

Getting Beyond the Hype— Predictive Analytics and Machine Learning



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Introduction

With all the buzz in the information technology industry around artificial intelligence (AI) and machine learning (ML), you'd think that every organization was using these tools or planning for how they are going to use them. After all, the promise is that AI and ML will help organizations harness the ever-growing volumes of data being generated by automating and augmenting human analytic processes and decision-making.

But is that really the case? What percentage of companies are actually using these tools? In what functions and for what applications? That was the focus of a market survey OneStream Software launched in July of 2019. And the results are somewhat surprising. Read on to learn more.

OneStream's Predictive Analytics, AI and ML Survey

The OneStream survey on predictive analytics and AI/ML usage was launched and executed in July and August of 2019. The survey was launched to our database of Finance and IT contacts and promoted via social media. We received a total of 144 responses, with 76% of them coming from North America and 18% in Europe, the Middle East and Africa (EMEA). The majority of respondents were Finance professionals (69%) while IT represented 24% of responses. In terms of company size, 80% of respondents were from companies with over \$500M in revenue. So we felt the sample was a good representation of our customer base and target market.

To gain a further sense of the nature of the respondents, we asked what type of software solution they were using for corporate performance management (CPM). The results showed the following, with multiple selections available:

- **45%** — Spreadsheets
- **32%** — OneStream
- **32%** — Oracle/Hyperion
- **18%** — SAP
- Then many others in single digits

Validating the market shift to cloud-based CPM solutions — 42% of respondents said they were cloud-deployed, while another 38% said they were deployed On-Premise, but were considering the cloud (see figure 1).

How CPM Solutions Are Deployed

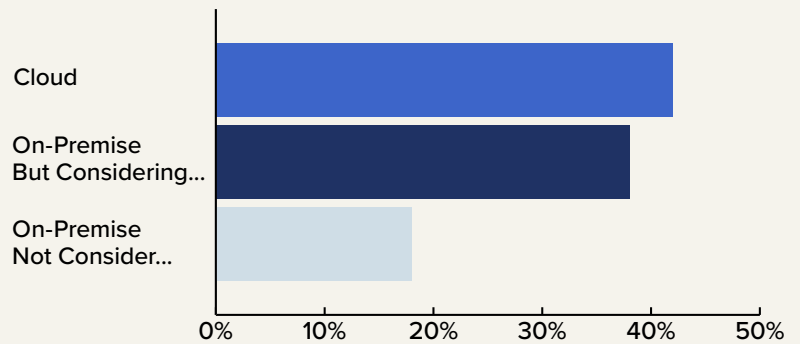


Figure 1 — How CPM Solutions Are Deployed

When asked what the primary benefits their CPM solution delivers, the most often-cited benefit was Faster Financial Close Cycles at 65%, followed by Shorter Planning/Forecasting Cycles at 42%. This was followed by Improved User Productivity (39%), Improved Decision-Making (38%), Enhanced Business Insights (35%) and Improved Forecast Accuracy (30%) (see figure 2).

Benefits of CPM Solutions

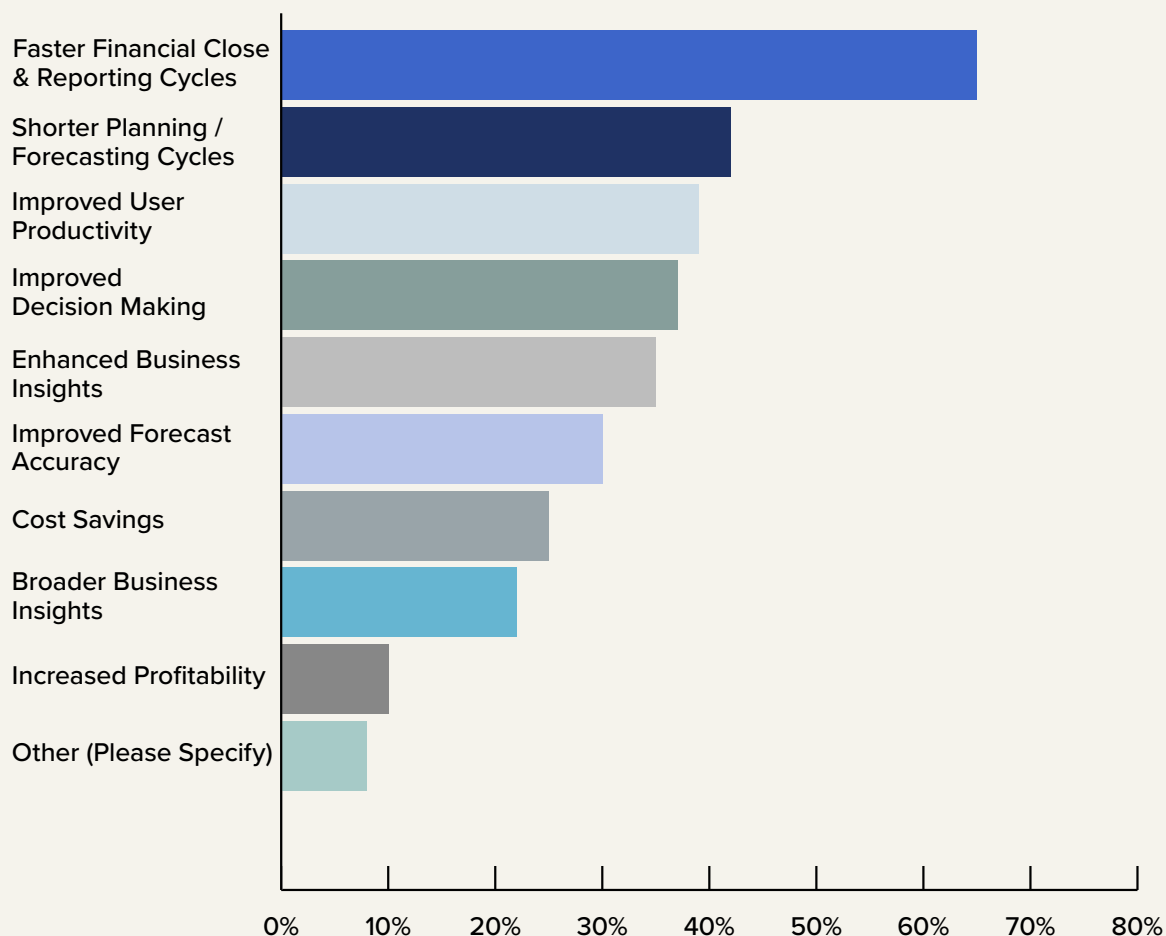


Figure 2 — Benefits of CPM Solutions

Improving the Accuracy of Forecasts

With the primary focus of this survey being on Predictive Analytics and Machine Learning, we asked respondents what their current level of forecast accuracy was for their organization. Not surprisingly, 46% of respondents weren't sure. For those who did know, the largest grouping of responses was 22% saying 6–10% forecast accuracy. Another 17% claimed 3–5% accuracy, while only 6% claimed 1–2% forecast accuracy (see figure 3).

Current Level of Forecast Accuracy

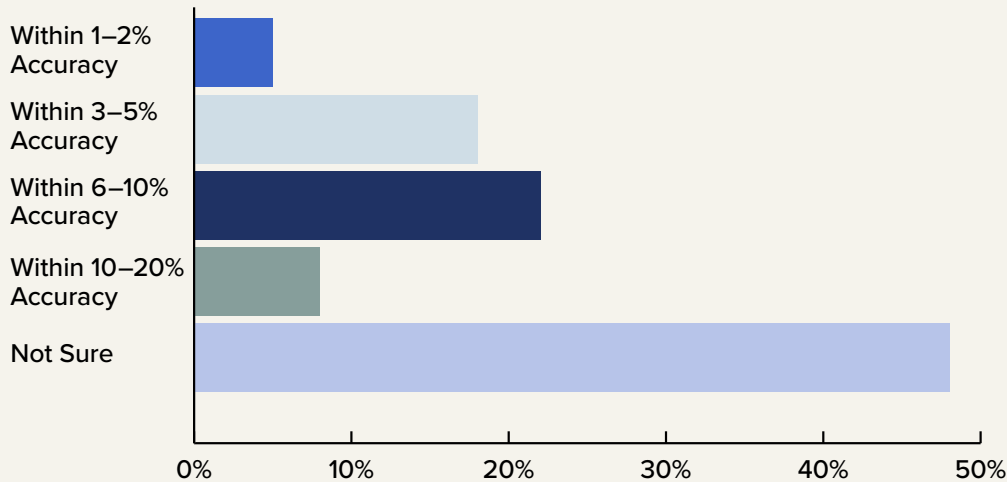


Figure 3 — Current Level of Forecast Accuracy

While 48% of respondents said they were satisfied with the accuracy of their forecasts, 83% said that improving forecast accuracy would have a medium to high impact on their business (see figure 4). When asked what factors were impacting their ability to produce more accurate forecasts, the primary responses included:

- **39%** — Lack of line management input and accountability
- **38%** — Lack of access to necessary data
- **32%** — Ineffective software tools
- **29%** — Poorly-developed calculations and drivers
- **29%** — Unable to react quickly enough to industry/market volatility

These survey responses highlight some important trends. First, a very small number of organizations are operating with 1–2% forecast accuracy and the majority don't even know what the accuracy of their forecasts are. For large companies, every 1% in forecast accuracy can

be worth millions of dollars in inventory holding cost savings, or by recouping lost sales by not having product in the right place or at the right time. And this is validated by our survey results, showing that 83% of respondents feel an increase in forecast accuracy could have a medium to high impact on their business.

So what's holding them back from producing more accurate forecasts? The survey highlights that lack of line management input, lack of access to the necessary data and ineffective software tools are the top challenges.

Business Impact of Increased Forecast Accuracy

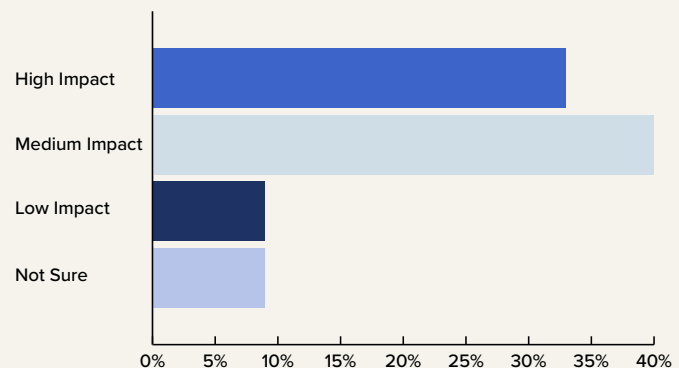


Figure 4 — Business Impact of Increased Forecast Accuracy

Use of Predictive Analytics and Machine Learning

Before we look at the survey results on questions about Predictive Analytics and Machine Learning, let's start with some definitions. Predictive Analytics is the practice of extracting information from existing, historical data sets in order to determine patterns and predict future outcomes and trends. Predictive Analytics does not tell you what will happen in the future. It forecasts what might happen in the future with an acceptable level of reliability and includes what-if scenarios and risk assessment.

Machine Learning is a branch of Artificial Intelligence, or AI, that is specifically focused on software that has decision-making capabilities based on recent experiences and past trends. It goes beyond traditional rules-based programming, leveraging statistical algorithms to learn and get smarter over time (e.g., training), retraining itself the more it “experiences.”

So what's the state of market adoption for tools that can help improve forecast accuracy, such as Predictive Analytics and Machine Learning? Surprisingly, only 16% of respondents to our survey said they were currently using Predictive Analytics, but 40% said they were considering or evaluating these tools (see figure 5).

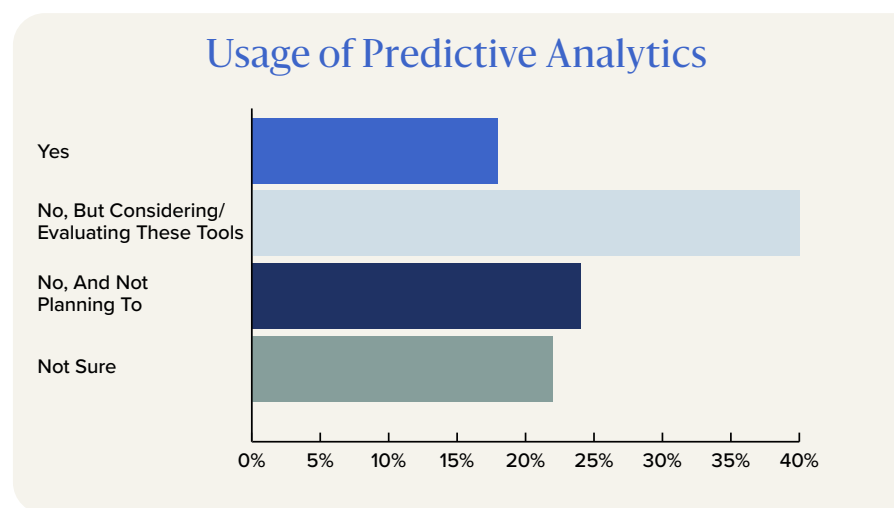


Figure 5 — Usage of Predictive Analytics

When asked about what the top use cases for Predictive Analytics include, #1 response was Sales/Revenue Planning at 66%. This was followed by Demand Planning (42%), Customer Service (23%), and Predictive Maintenance (21%) (see figure 6). These results are not surprising, since Predictive Analytics is all about using historic data to predict future outcomes — and sales/revenue and demand are the two areas that enterprises have the most trouble forecasting.

Top Use Cases for Predictive Analytics

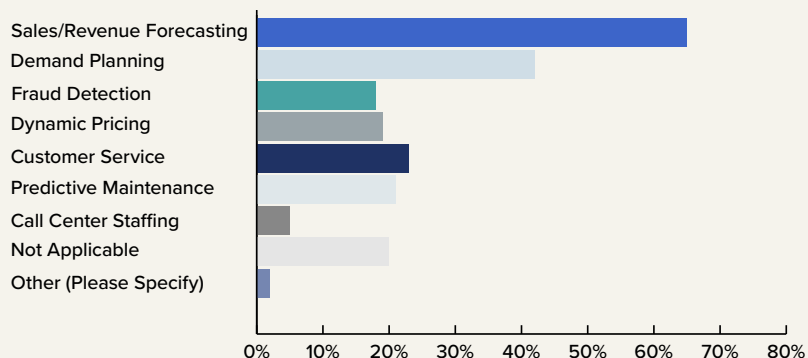


Figure 6 — Top Use Cases for Predictive Analytics

Getting Beyond the Hype — Predictive Analytics and Machine Learning

When asked about the use of Machine Learning tools, the results were similar — roughly 14% of respondents said they were currently using ML, while 35% said they were considering or planning to use ML (see figure 7).

When asked about the top use cases for Machine Learning, the answers were slightly different from those for Predictive Analytics. The #1 response was Intelligent Process Automation at 41%. This was followed by Sales/Revenue Forecasting (34%), Anomaly Detection (32%), Demand Planning (32%) and Demand Planning (32%) (see figure 8).

Use of Machine Learning

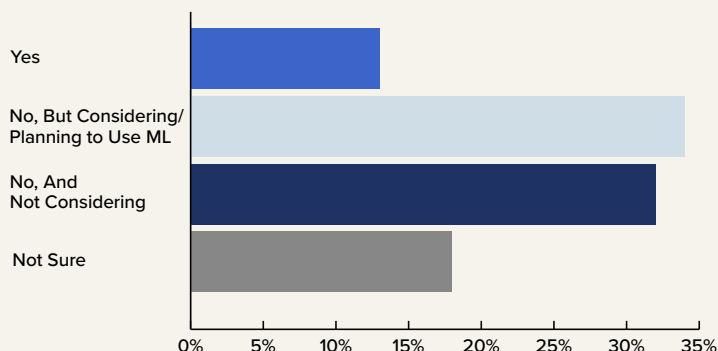


Figure 7 — Use of Machine Learning

Top Use Cases for Machine Learning

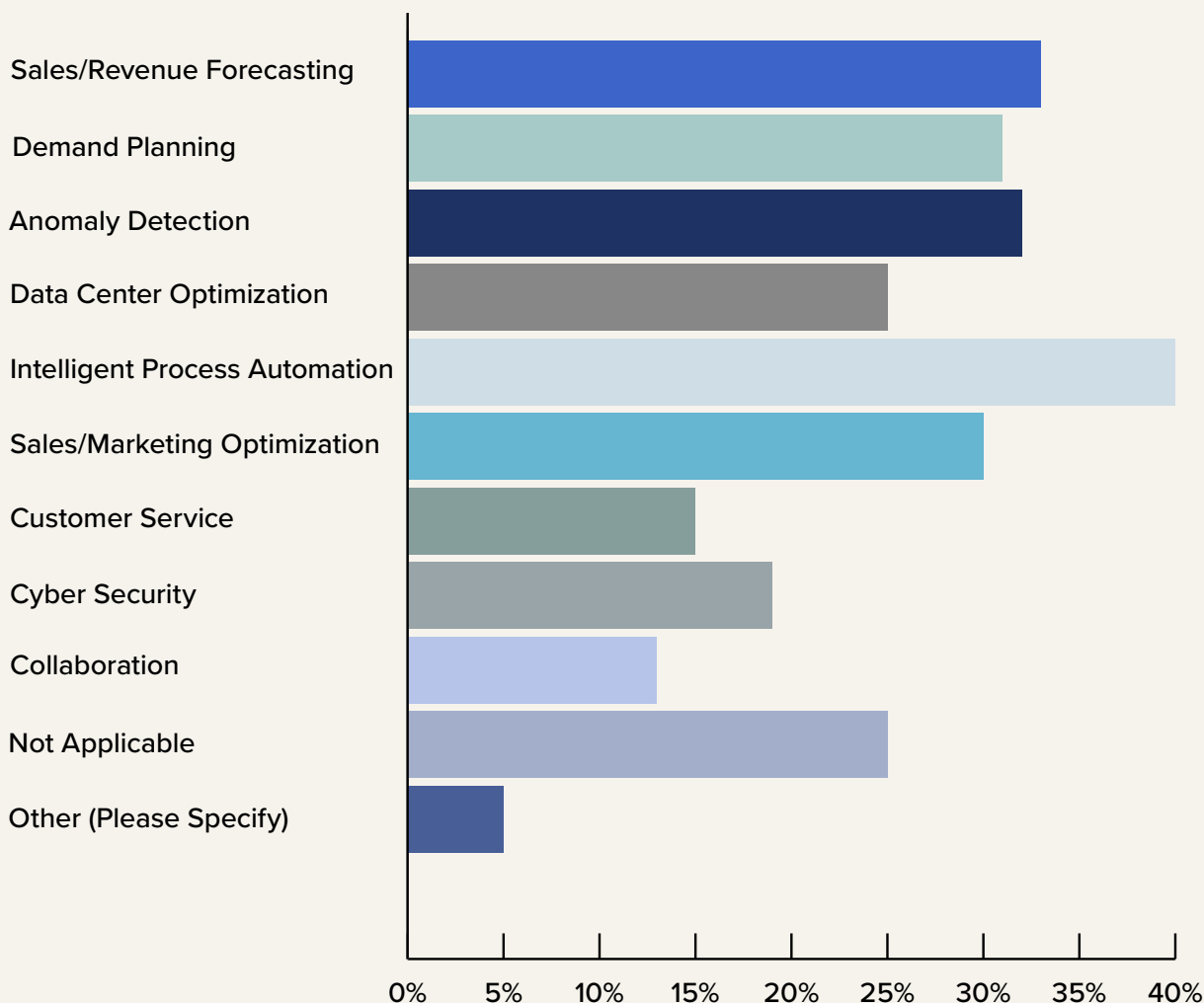


Figure 8 — Top Use Cases for Machine Learning

Getting Beyond the Hype — Predictive Analytics and Machine Learning

So while Sales/Revenue and Demand Planning are often cited as good use cases for Machine Learning, this technology also lends itself well to improving business processes as well as reviewing and detecting anomalies in large volumes of data. These anomalies could include errors, fraudulent transactions, or data mapping issues.

Given the sophistication of Machine Learning algorithms, there is consensus in the market that in order to be successful with ML, organizations need to have trained Data Scientists on board to handle data preparation, manage the ML projects and help users interpret the results.

When we asked respondents of the survey if they had Data Scientists in house, a surprising 34% said yes, while 3% are in the process of hiring and 12% are considering hiring Data Scientists. So where are they located? Surprisingly, 41% said they were in IT, while 33% said they were in Finance, and 25% said Operations (see figure 9).

Departments Where Data Scientists Are Deployed

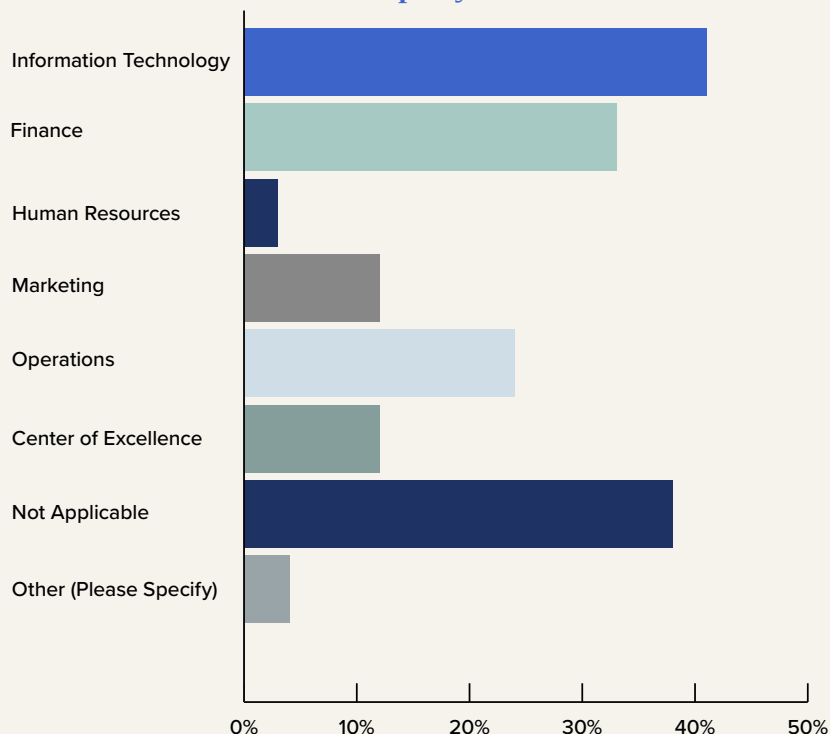


Figure 9 – Departments Where Data Scientists Are Deployed

Most Popular Machine Learning Tools

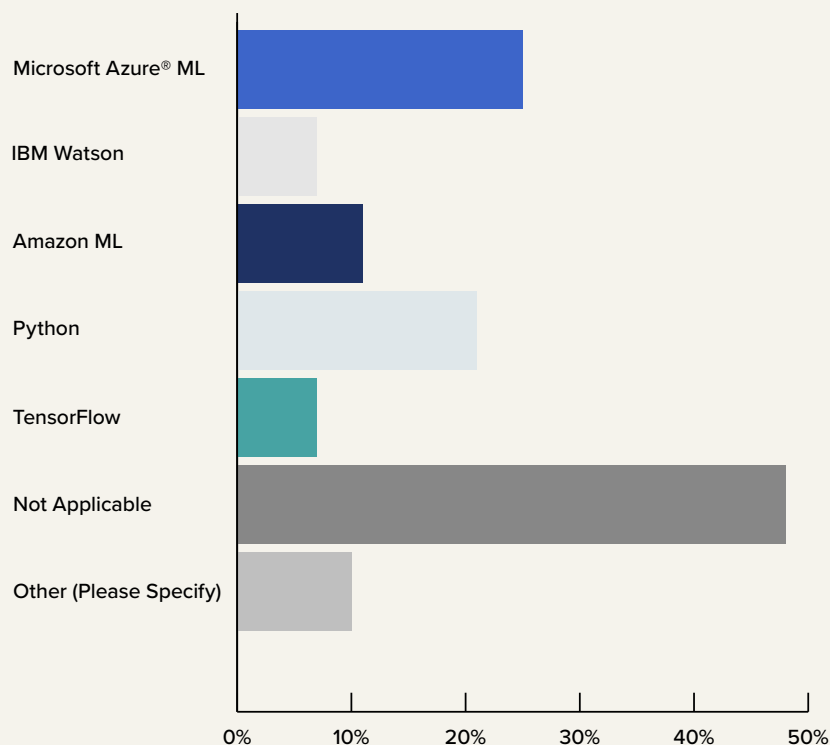


Figure 10 — Most Popular Machine Learning Tools

Lastly, we asked what Machine Learning tools were most popular. The top responses included Microsoft Azure® ML at 24%, Python at 21%, Amazon ML at 11% and IBM Watson at 6% (see figure 10).

Conclusion

What can we conclude from these survey results? First of all, forecast accuracy is clearly a challenge for many organizations, and a large majority say improving forecast accuracy can have a medium to high impact on their business. Lack of management input, lack of access to necessary data and ineffective software tools are the primary drivers holding them back.

Predictive Analytics and ML tools that can help improve forecast accuracy are readily available, but adoption is still in the early stages with only 14–16% of respondents saying they have adopted these tools. But 35–40% are considering or planning to adopt these tools. The target use cases for Predictive Analytics and ML are mostly on the revenue side of the business with Sales Forecasting and Demand Planning in the top five, along with Customer Service, Intelligent Process Automation and Anomaly Detection. And it does appear that

many organizations are starting to re-tool their skill sets with Data Scientists already in place at roughly a third of organizations.

To be prepared for the use of Predictive Analytics and ML, organizations should make sure they are selecting software partners, when for ERP or CPM, that are investing in these technologies and making them accessible and applicable to the business processes where that can most benefit customers.

The industry has clearly gotten beyond the “hype” stage, and we are now seeing positive results from practical use cases for Predictive Analytics and ML. The next few years should be exciting as more organizations adopt Predictive Analytics and ML tools, achieve initial success and expand their adoption across departments and additional use cases.

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