



HOW THE OFFICE OF FINANCE WILL **LEVERAGE** **ARTIFICIAL INTELLIGENCE**

**AI, NATURAL LANGUAGE, AND MACHINE LEARNING
WILL SHAPE THE FINANCE FUNCTION AND BEYOND**

MANY OF US HAVE PERSONAL DIGITAL ASSISTANTS in our homes that can play our favorite song, order groceries with a voice command, and even predict when we will run out of dog food so that our canine companion doesn't go hungry. And as much as robust technologies make our personal lives run a bit more smoothly, there is similar potential for Artificial Intelligence (AI), Natural Language queries, and Machine Learning to transform the Office of Finance.

Being able to use the spoken word to "call up the last month of sales" and have the report appear can be a valuable tool that dovetails with expectations from our roles as consumers. However, there is more to AI and related technologies than ditching the keyboard.

What if the finance chief could then ask the system to "explain the variances from the forecast and project the next twelve months." The tools are out there to pull in the appropriate data and perform the analysis needed to forecast the future.

Another potential benefit of AI and related technologies: generating financial reports with minimal human intervention. The system would pull the latest numbers and insert the appropriate language. The finance team would act as editors and quality assurance specialists, not spreadsheet experts.

This may sound a bit futuristic, but it is not that far from reality. Advancements in AI and associated technologies such as Natural Language Interaction (NLI), Natural Language Generation (NLG), and Machine Learning are leveraging the power of the cloud platform to free-up time for staff to identify new business opportunities, collaborate with their peers, and strengthen strategic partnerships.

This eBook will look at the challenges of implementing AI and how the next generation of technology will play a role in the Office of Finance over the next five years and beyond.

Topics include:

- **How AI is transforming routine tasks such as audits, exception reporting, and account reconciliation by improving productivity through fewer errors, higher output, and greater speed.**
- **Potential applications for the next level of solutions in which AI will intersect with Natural Language and Machine Learning to perform data analysis and predictive analysis using voice commands and Natural Language queries.**
- **How cloud-based computing will drive the adoption of AI, Natural Language, and Machine Learning going forward.**

OVERCOMING CHALLENGES TO PROVE VALUE

THERE ARE CERTAINLY some challenges to implementing AI and related technologies, but most of them involve overcoming cultural and staffing hurdles rather than technological barriers.

One of the most significant challenges is finding the right talent. The routine, repetitive tasks of finance, such as data entry and transaction processing, are tailor-made for automation and AI. The most efficient finance function is a blend of new technologies and a more skilled workforce focused on strategic initiatives.

“It is not easy to find someone with a knowledge of Machine Learning and AI who also has an appreciation of what is required of finance and can effectively collaborate,” said Michael Hu, Partner, A.T. Kearney.

“Culture is another common challenge,” Hu said. “Some companies are fine with testing out AI in internal-facing tasks, but can hesitate when it comes to using it for applications such as debt collection and fraud prevention where there is a high risk if the machine doesn’t get it right,” Hu explained. Another cultural barrier is the fear that automation will replace workers.

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Incomplete and inaccurate data can also hamper AI success. In many organizations, data resides in a number of departmental silos. “It is important to centralize all of the relevant data needed to train AI,” Hu noted.

Robotic process automation (RPA) – a class of software that replicates the actions of humans and is often used in conjunction with AI — is already automating much of the routine FP&A work. More than half (58%) of companies expect RPA to have a significant impact on their FP&A processes over the next two years, according to *Finance in the Digital Age*, a recent survey conducted by the Genpact Research Institute and analyst firm, HfS Research.

Robots are also less expensive than having people perform repetitive tasks, even if labor costs are low. A software robot can cost as little as one-third the price of an offshore fulltime employee (FTE) and as little as one-fifth of the cost of an onshore FTE, according to the 2016 Robotic Process Automation report from Capgemini Consulting and Capgemini Business. The potential cost savings is 20% to 50%.

“Anything that is transaction-based is a candidate for AI, which includes many of the low-value activities of finance, such as account reconciliation and invoice matching,” said Brian Kalish, Principal, Kalish Consulting. “If it is a process that cannot be made better by a human touch, then it is a candidate for AI.”

TAKING AI BEYOND ITS TRANSACTION-PROCESSING ROOTS

A MAJORITY (62%) OF FINANCE EXECUTIVES report that they will make significant investments in AI over the next three years, according to PwC's *Digital IQ* research. Gains from RPA and basic AI will provide the building blocks for finance to later achieve more dramatic gains with advanced AI, setting the stage to go beyond using AI and related technologies for only routine transactions.

AI holds the keys to better forecasting as Machine Learning and other tools become more adept at interpreting structured and unstructured data. Advancements include tools for mining less-structured data, including Natural Language Processing. This will enable Google-like queries, either typed or spoken, to sift through the organization's far-flung data resources.

"Organizations are culling large amounts of structured and unstructured data from internal and external sources, and that is sparking interest in how AI can help to build out more detailed, comprehensive forecasts that take advantage of the deep learning capabilities of AI," said Alok Ajmera, President, Prophix Software, a global leader in Corporate Performance Management (CPM) software.



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Organizations are making strides in understanding data around market trends, customer sentiment, and engagement, but they aren't making the connection back to the bottom line. The next steps involve automated Machine Learning and data management to make the process more seamless and robust.

"The next level of AI will be transformational as it will bring a finance focus to business strategy. AI will automate much of the budgeting and forecasting process, enabling humans to focus on the exceptions," Ajmera said.

Using cognitive learning to identify patterns in customer behavior, payment history, account reconciliation, and other functions can help reduce the amount of human intervention needed.

"The goal is to have the machine solve these issues to the best of their abilities, and then send an alert to humans when all possibilities have been exhausted," said Nilly Essaides, Senior Finance Research Director, The Hackett Group.

Applying AI to some of these processes early on results in more informed decision-making when a human gets involved. "When humans are notified of a pattern of slow payments, for example, they are now armed with intelligence to make better decisions when weighing their options to address the issue, such as increasing customers' credit or adjusting their payment terms," Essaides said.

Advances in AI will also automate the way that financial reports will be generated in the future, Kalish predicted. He said about 70% of the work involved in compiling a quarterly report is pulling and verifying data. That data is then handed off to an analyst to provide context, but Kalish sees that part of the process being automated as well.

"The machine can learn that if the numbers change by a certain percentage from the previous report, this is the language that should be used, and if they change by a different percentage, different wording should be applied," Kalish said. Then, the role of the analyst would shift to ensuring that the machine-generated report is correct.

Going forward, machines will not just point to gaps in the data. They will use predictive and prescriptive analytics to fill in the data gaps based on past performance and future expectations.



THE ROLE OF CLOUD COMPUTING IN AI'S FUTURE

EXPERTS NOTE THAT PUBLIC CLOUDS make it easier for organizations to leverage different types of internal and external data, which is critical as data fuels AI, NLI, NLG and Machine Learning. With public clouds on the rise — Gartner projects the worldwide public cloud services market will increase 21% in 2018 to \$186.4 billion — AI will have more runway to take off.

While the cloud offers lower operating costs, interoperability is an attractive feature of the platform as companies look to leverage AI in their finance operation and beyond. “The cloud platform enables multiple technologies to come together and work cohesively,” Ajmera said.

Cloud also offers organizations the ability to tap into short bursts of computing power to handle sophisticated AI-driven forecasting models. “In a cloud computing environment, companies can analyze 10 terabytes of data in minutes, which they can’t do with on-premise hardware,” Ajmera said.

Flexibility and scalability of the cloud enables companies to explore AI’s capabilities before making large investments. “You can start with one division or one geography, and make small bets without breaking the bank,” Kalish said.

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CONCLUSION: THE VALUE OF AI BEYOND ROUTINE TASKS

EARLY ITERATIONS OF AI AND RELATED TOOLS have become adept at mastering process-driven tasks. Matching up payments and invoices, balancing accounts, and other work that used to be handled manually can now avoid the human touch for the most part.

The next frontier is to use AI not simply to replicate work, but to leverage deeper learning to enable more accurate planning and forecasting. Machines can determine that a payment is late, but the true value is bringing in internal and external data that can help the finance team understand why and make the best decision about next steps.

AI is poised to change the way that the finance team and others in the organization interact with data. People have become accustomed to asking personal digital assistants to set their alarms, play a song, or search for a deal on airfare, and they are expecting the same speed and accuracy of response when they go to work.

While the future is bright, there is still work to be done, and organizations that treat AI as a panacea and not an opportunity to rethink their processes will not reap the benefits. The number of firms investing in AI rose from 40% in 2016 to 51% in 2017, according to Forrester's survey, *Predictions 2018: The Honeymoon For AI Is Over*. But success isn't easy — 55% of firms have not yet achieved any tangible business outcomes from AI, and 43% say it's too soon to tell.

Key takeaways from this eBook:

- AI and related technologies are already helping the finance team be more productive by taking on some of the rules-based manual tasks such as invoice matching and account reconciliation.
- As deeper learning takes place, AI can take on more sophisticated tasks, such as generating the language for reports based on variances in the data and providing more in-depth analysis to support human decision-making.
- The next level of AI and related technologies will need more comprehensive data, and cloud computing is poised to enable AI to quickly analyze large chunks of data.

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