



Future of Finance: Extreme automation

**Transforming finance operations
with disruptive technology**

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Extreme automation

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Disruptive technologies are the largest drivers of change in business today. In fact, technology is shifting so fast that organizations such as Samsung, Ford, and NATO are enlisting science fiction writers to help them visualize the future and consider opportunities for innovation.¹

Meanwhile, the combination of connected sensors, massive data gathering, and machine learning is driving unprecedented changes at home and work, with Amazon's Alexa and Google's Nest becoming standard fixtures. In addition, robots are maturing in both their accuracy and their interactions with humans, creating new applications from remote surgery to autonomous aircraft navigation.²

Technological disruption is affecting all corners of business, and finance is no exception. Indeed, extreme automation—the confluence of robotics, advanced analytics, cloud applications, blockchain, and more—is expected to create an all-new operating model. It is expected to empower finance to deliver more value with less effort, respond quickly to the needs of the business, and truly shift from traditional processing to strategic partnering.

For example, instead of providing reactive answers to unforeseen problems, the finance organization of the future may deliver predictive insights to drive growth. Rather than cumbersome foundational systems, finance will likely have as-a-service architectures for instant agility and scalability. And instead



of siloed, people-intensive processes, finance will likely be part of end-to-end, automated processes—with real-time, cross-functional data for dynamic reporting and analysis.

This is the future of finance, and chief financial officers (CFOs) must start creating it now, lest their companies get disrupted by more nimble competitors. The winners in finance will reimagine their operating model and develop a long-term strategy for extreme automation.

Implementing technology at new extremes

According to a recent KPMG LLP (KPMG) study, 97 percent of chief executive officers (CEOs) see

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¹ The New Yorker, *Better Business through Sci-Fi* (July 30, 2017): <https://www.newyorker.com/tech/annals-of-technology/better-business-through-sci-fi>

² KPMG LLP, *The Changing Landscape of Disruptive Technologies* (2018): <https://advisory.kpmg.us/content/dam/advisory/en/pdfs/tech-disruptors.pdf>

technological disruption as more of an opportunity than a threat,³ so it's no wonder that almost every finance organization is in some stage of implementing data and analytics and considering where to focus. Some are piloting robotic process automation (RPA) for manual tasks like creating journal entries or purchase orders, while others are battling legacy technology by moving to cloud financials. Still, others are experimenting with machine learning in such areas as contract review.

However, most of these efforts today are for one-off solutions and are not yet embedded into day-to-day operations. The "extreme" in extreme automation refers to the integration of multiple disruptive technologies—all at once—across all processes. In the next three to five years, for example, organizations are likely to have robotics and artificial intelligence (AI) everywhere, with electronic brains assisting in human decisions.

From scorekeeper to strategic business partner

Extreme automation is expected to create never-before-seen levels of maturity in finance operations. In addition to automating core finance and accounting processes and reducing labor requirements by up to 70 percent,⁴ it may enable finance to harness the data inside those processes and become a strategic interpreter, providing new kinds of insights.

For example, financial planning and analysis (FP&A) includes a lot of manual processes that may be automated, and that automation may also surface key data for advanced analytics on pricing strategies, market expansion opportunities, and other areas. In FP&A of the future, some finance professionals may have more formalized roles as business partners, working with analytics to provide predictive and

Extreme automation is the combination of multiple disruptive technologies:

Data management. The progressive integration and governance of internal and external data, along with the mining of untapped data sources, will drive predictive and prescriptive insights. Finance must rethink its data management to deliver fast, dynamic insights and better business partnering.

Cloud technologies. As-a-service software for enterprise performance management (EPM) and enterprise resource planning (ERP) is enabling integrated, real-time data and end-to-end global processes. In addition to creating a collaborative platform that positions finance as a business partner, these technologies can help finance standardize processes and improve efficiency in areas such as budgeting and planning, management reporting, and payroll processing.

Robotic process automation. This software automates repetitive, rules-based activities that have traditionally been done by humans. Finance can use RPA for activities such as closing and reconciling subsidiary ledgers, processing journal entries, creating purchase orders, and preparing and distributing management reports.

Digital analytics and delivery. Cloud technologies and process automation enable on-demand, customized analytics and real-time collaboration to support key business decisions. For example, finance may use these capabilities for management reporting and analysis, live monitoring of the financial close process, and analysis of strategic scenarios.

Machine learning. These software algorithms, which power AI, can augment human reasoning, problem-solving, and decision-making. Finance can use machine learning for processes such as management of payment exceptions, supplier and contract management, P-card reconciliation and analysis, and preparation of statutory filings and shareholder reports.

Natural language processing. This technology quickly processes large volumes of textual data that previously could be understood only by humans. For example, natural language processing can enable a system to answer inquiries from finance professionals, such as "What were comparable store sales in February?"

Cognitive. This class of automation, which encompasses machine learning and AI, refers to electronic brains that will challenge the finance and accounting opinion, provide deep analytics, and enable dynamic insights. Cognitive technologies can perform financial close analysis, forecast performance, manage customer contracts, develop strategic plans, and conduct other judgement-based activities.

Blockchain. This revolutionary recordkeeping technology may increase data security, shorten transaction cycles, and eliminate the need for reconciliations. The technology may improve efficiency and security in processes such as source-to-pay, order-to-cash, and acquire-to-retire.

prescriptive insights to help business units make better decisions.

Already, one agricultural company is using AI to improve forecasting on crop yields. The company deploys drones to collect data on the color, height, and other characteristics of the corn crop, which AI can then analyze in order to predict the yield within two percent.

As another example, if a company is rolling out a new product, a finance business partner could provide analytics using internal and external data—such as real-time sales data and social media sentiments—to predict the product's reception in various markets and inform the launch plan.

These kinds of forward-looking, data-driven decisions are expected to become the norm, which is in sharp contrast to today, as many leaders simply do not trust the misaligned or incomplete data that is informing their company's algorithms. Indeed, 66 percent of CEOs say that over the last three years, they have overlooked insights provided by computer-driven data analysis because they were contrary to their experience and intuition.⁵ This confidence will change significantly as finance applies extreme automation to processes and builds reliable analytics.

A new labor footprint and service delivery model

As routine activities such as regulatory reporting or accounts payable become highly automated, labor requirements are expected to decline significantly. However, the automation of other areas of finance—such as reporting and planning—may result in an increase in the number of humans who will work with intelligent automation to provide strategic insights to the business. In fact, nearly three out of four CEOs expect AI and robotics to create more jobs than it they destroy.⁶

An automated environment may help finance compete for the best talent,

and that talent will bring an entirely new set of competencies, from advanced analytics to business partnering. Another critical role will be the data scientists who prepare data for use by machine learning, but as demand for data scientists continues to exceed the supply, finance may need a strategy for outsourcing this work.

As extreme automation changes the size of finance teams and the types of services, it is expected to also dramatically change the service delivery model. For example, instead of embedding financial planners in each part of the business, FP&A can use advanced analytics and cloud-based EPM to create an integrated view of the front, middle, and back offices. As such, companies may effectively replace the "F" in FP&A with a "B," creating a new business planning process that integrates finance forecasting with operations, supply chain, sales, marketing, and other functions.

Getting into action with an automation strategy

To implement extreme automation, no organization will be able to "flip the switch" on a big bang. "Transformation is a journey," said Lance G. Morton, Advisory principal at KPMG LLP. "And while every company's journey will be different, the goal is the same: to prioritize investments to achieve the highest impact—on both efficiency and strategic value—in both the short and long term."

How will extreme automation disrupt the finance operating model in the next year, the next five years, and the next ten years? What is the potential of each technology, how will it be implemented, and how can it be knitted together with other technologies, including legacy systems, to drive new kinds of value? Successful CFOs will look holistically at extreme automation—considering the impact on services, systems, processes, and people—to create a long-term finance automation strategy that is aligned with the enterprise vision.

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Lance G. Morton

Principal, Advisory
KPMG LLP



For more on the finance service delivery model and talent needs of the future, please see **Reshaping finance: Building the service delivery model of the future** and **Evolving finance: Embracing new talent structures and strategies**.



of CEOs have put their own experience and gut instincts over data-driven insights in the past 3 years.

"Companies that focus only on new technology may be able to execute processes more quickly, but if their processes are broken, then they're likely to stay broken," said Julie Munn-Sims, principal in KPMG LLP's Finance Transformation practice. "Market leaders are looking at the entire finance operating model. They're using disruptive technology as a driver while also addressing process design, service delivery, and the rest of their finance operations."

To develop an automation strategy, CFOs should contemplate the future state and develop a multiyear road map, with sequenced investments for getting there.

For example, the CFO of one consumer packaged goods company envisions a finance organization that will reduce cost, improve service delivery, and create a new level of

business partnering, with a focus on three key subprocesses: FP&A, financial close and consolidation, and management reporting. The organization's road map includes cloud technologies in the near term, to be followed by RPA and, eventually, AI and blockchain. With this approach, the company prioritized cloud EPM and ERP as the foundation for the new design—a way to standardize processes while putting finance in position to adopt emerging technology.

Another key consideration for an automation strategy is risk. On one hand, the implementation of RPA, cloud applications, and other technologies is expected to lower risk by reducing manual work and associated inaccuracies, improving access to data, increasing efficiency, supporting enterprise decisions, and positioning finance for the future. On the other hand, when intelligent automation starts to drive much of the business, the reliability of the

the underlying data model correct? How trustworthy are the sources of internal and external data?

Data quality and governance should be important parts of the extreme automation strategy, and CFOs—with their expertise in process governance and controls—are in a great position to lead this inquiry. What kinds of controls will be necessary in the automation of record-to-report and other end-to-end processes? How will finance ensure data integrity? How will bots be authenticated and monitored? Extreme automation must come with a strong focus on risk management.

Ultimately, to build the finance organization of the future, leaders must get into action today to harness extreme automation, transcend their transactional role, and provide new value. The organization's ability to meet changing requirements—both in and outside the company—depends on it.

Disruption in action

Leading finance organizations have already started their technology-enabled transformation.

A FORTUNE 100 global retailer wanted to become more nimble, quickly reacting to market changes through innovative technology and creating true value for its business and its shoppers. The retailer saw intelligent automation as the key to continuing its mission and worked closely with KPMG on an intelligent automation program.

Teams from across KPMG joined forces to identify automation opportunities, establish a center of excellence around RPA, and configure intelligent automation solutions. As the project progressed, the client looked to an entire suite of intelligent automation tools to

transform the back office.

Utilizing automation, KPMG helped the retailer identify 118 processes and 445 impacted headcount, resulting in a possible \$14 million in annual savings. Throughout the project, the retailer thought ahead not only to technology implementation, but also to the governance and program management needed to keep everything on track and future ready.

With streamlined back-office functions, high-quality analytics, and global oversight, the retailer can pass its benefits on to its customers the world over.

How KPMG can help

KPMG's Finance Transformation practice supports the growing agenda and increased responsibilities of the CFO. We work with our clients with passion and purpose, integrating innovative approaches and deep knowledge to deliver real results.

Our approach, methodologies, and tools are time-tested across various industries and have consistently demonstrated enhanced strategic value to the finance function. KPMG's global network of Finance Transformation professionals helps clients align their finance organizations with the strategies and needs of their businesses to realize and sustain value over the long term.

About KPMG

KPMG in Singapore is part of a global network of professional services firms providing Audit, Tax and Advisory services. With over 219,000 outstanding professionals in the network working together to deliver value in 147 countries and territories, we offer a globally-consistent standard of service based on professional capabilities, industry insight and local knowledge.

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