

The CIO Point of View **FINANCIAL SERVICES**

The New Agenda for Transformative Leadership:
Reimagine Business for Machine Learning



Global Overview

Machine learning has arrived in the enterprise, and companies are eager to reap the competitive benefits the technology can provide. From automating processes to enable faster business operations to applying algorithms to improve accuracy, CIOs are adapting the technology for a wide variety of uses—and transforming the way we work.

To investigate the rise of machine learning, we worked with Oxford Economics to conduct a survey of 500 CIOs in 11 countries on three continents and across 25 industries, alongside in-depth interviews with leaders in the field. We found that CIOs are increasing their investment in machine learning, but must overcome several barriers to achieve their productivity, revenue, and innovation goals. Unless CIOs turn their attention to updating talent and business process strategies alongside technology, the full value of machine learning cannot be realized.

Key Insights

The financial services industry is adopting machine learning at a faster rate than other sectors. As part of our global study, we surveyed 50 CIOs in the financial sector to better understand how the state of machine learning differs in this industry. We found that financial services firms are more likely to qualify for our leader group than other companies.

This leadership is likely the product of an intensely competitive market, as financial companies face pressure to innovate and compete with startups that have new processes and business models. Consumer demand for innovation is also high in the financial industry, fueled by the growth of online banking and a continuous search for higher-quality service and value.

The industry's early adoption is already yielding business value. For example, at JPMorgan Chase & Co., computers can quickly interpret loan agreements that until recently required 360,000 human hours per year to parse. Other companies are automating financial-analysis decisions and credit checks used to determine whether to approve loans, credit cards, or insurance policies.

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—Matt Potashnick, CIO at AXA UK

“The whole area around AI, robotics, and machine learning is firmly centered in our strategic plan,” says Matt Potashnick, CIO at AXA UK, the British subsidiary of the \$150 billion insurer. Potential uses of the technology go right to the heart of the business. “In terms of underwriting and pricing capabilities, we are moving away from traditional ways of building models, and utilizing machine learning to really enhance that.”

However, despite the financial sector’s early lead in machine learning and automated decision-making, many firms are not yet developing processes that address the risk of machine-made decisions. They are also slightly behind other sectors in ensuring that the data used to make decisions are accurate. For example, 14% of financial services CIOs have developed policies for insuring the accuracy of data compared to 18% of others. Moreover, financial services CIOs are just one percentage point ahead of others (18% vs. 17%) in addressing the legal risk of mistakes made by machines in enterprise policies. This leaves the industry vulnerable to mistakes, external cybersecurity threats, and unexpected changes to financial markets.

Without appropriate adjustments to processes around automation and risk management for machine learning, financial firms are unlikely to get full value from their investments.

The financial services industry is adopting machine learning at a faster rate than other sectors.

78%

of financial services CIOs say they are increasingly focused on strategy, rather than operations vs. **62%** of others.



Financial Services CIOs Lead in Machine Learning Adoption

Machine learning will be an important driver of digital transformation—that is, the strategic use of technology to improve enterprise performance, customer relationships, processes, and products and services—and CIOs from financial services firms are more prepared than their peers from other sectors to make this transformation happen.

These CIOs are increasingly leading broader, organization-wide digitization efforts (74% in finance say this is true vs. 72% from other sectors). They are focusing on strategy, rather than operations (78% vs. 62%), and say machine learning is a strategic focus for them in their role (64% vs. 52%).

Financial services firms are better prepared to integrate machine learning into their organizations, as they boast more mature capabilities in a range of other technologies. They are making greater investments in machine learning than other sectors. They are also spending more on the foundational technologies that will support machine learning, such as analytics (72% are making “substantial” or “major” investments today vs. 49% of others), mobile (56% vs. 39%), and IoT (48% vs. 32%)—and report greater organizational maturity for these technologies in terms of assets deployed, worker skills, and integration into business operations. The confidence reflected in these statistics suggests that financial services firms are better equipped to digitize their organizations.

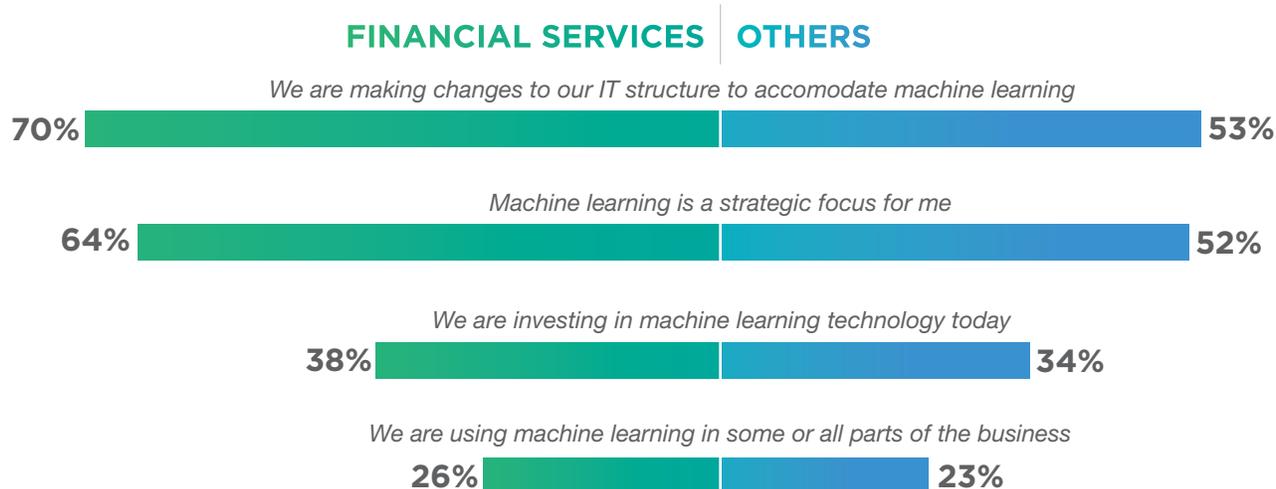
64%

of financial services CIOs say machine learning is a strategic focus for them vs. **52%** of others.

Machine learning is critical to the CIO role

Q: To what extent do you agree with the following statements?

“Agree” and “strongly agree” responses combined are shown here.



CIOs Expect Machine Learning to Drive Business Value

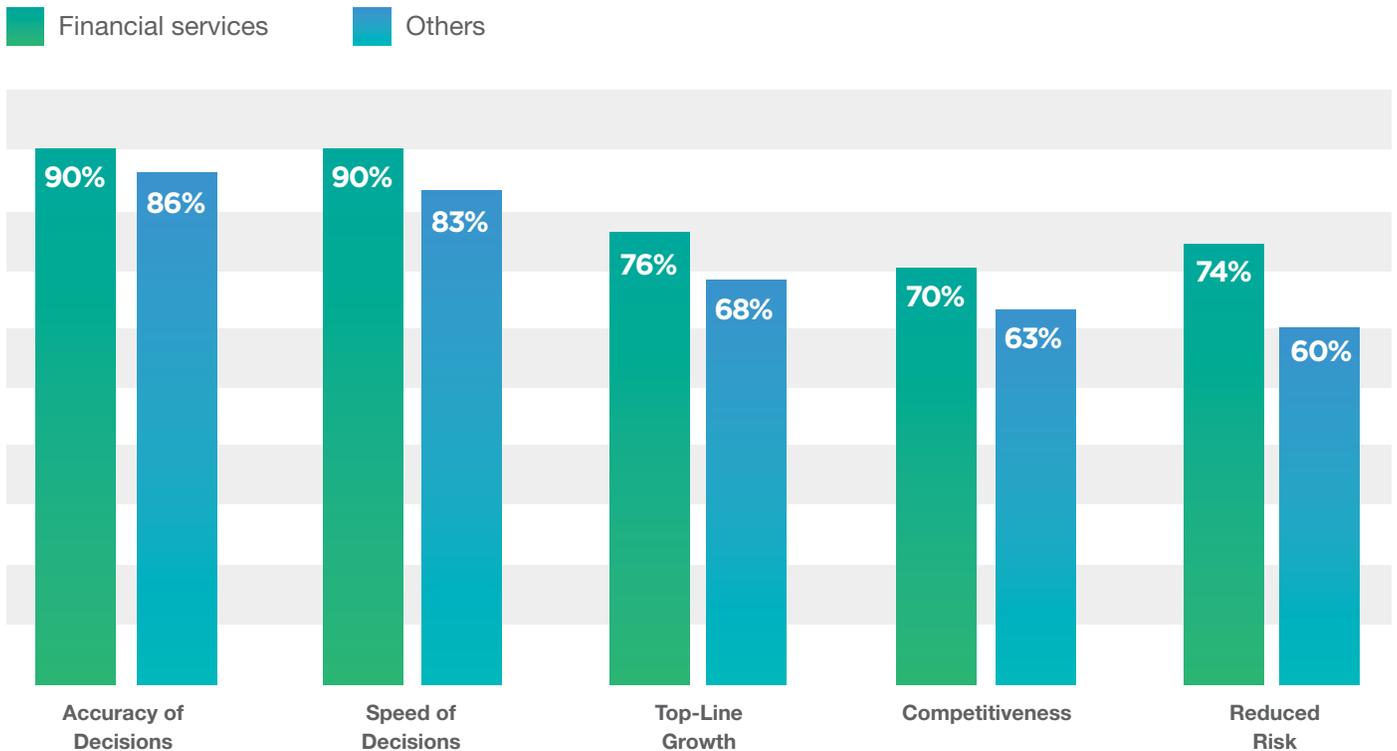
Investments in machine learning are starting to pay off as technology and business processes allow companies to advance beyond the automation of routine tasks and move toward the automation of complex decisions. For example, machines can advance from reviewing loan documents to sorting applications according to set parameters to approving loans and offering additional services.

Most respondents to our survey expect machine-made decisions to increase accuracy, delivering “substantial value” or “transformative value”—including 90% of financial services CIOs compared with 86% of others. A large majority also expect machine-made decisions to increase the speed of their enterprise in a way that delivers “substantial value” or “transformative value”—90% of financial services CIOs and 83% of others.

CIOs from financial services expect more from machine learning. They are also more likely to say machine-made decisions will be valuable to the success of specific business functions, including security operations (94% vs. 89%), the finance function (46% vs. 26%), and call centers (36% vs. 19%).

CIOs expect substantial value from machine learning

Q: To what extent do you expect decision automation to deliver value in the following areas over the next three years? “Substantial value” and “transformative value” responses combined are shown here.



Machine Learning Demands New Jobs and Processes

Successfully automating tasks and decisions requires more than just the right technology. It requires talent and updated business processes as well.

CIOs from the financial services industry are more likely to have made organizational changes to accommodate digital labor, including redefining job descriptions to focus on work with machines (62% vs. 36% of others), developing a road map for future process changes (52% vs. 35%), and recruiting employees with new skill sets (42% vs. 25%).

They also have made changes to IT to fit this new technology: nearly three-quarters (70%) are changing IT structures to accommodate machine learning (vs. 53% of others). Many are making organizational changes to accommodate machine-driven business processes (60% vs. 47%) and maintaining their IT management system with an automated process (44% vs. 34%).

Protecting sensitive information while still taking advantage of advances in machine learning and automated decision-making means the industry must vet business processes and risk models for this new era. As financial firms digitize more processes, they also become more vulnerable. Guarding against external threats is critical, especially as financial services is among the industries that suffer the most cyberattacks.

However, most financial firms have work to do to account for risks from machine learning and process change. While other industries are similarly behind, faster adoption of the technology among financial services firms means this industry is facing a significant security gap and must accelerate process change in this area to reduce risk. Financial services firms may expect machine learning to add value in the area of risk reduction (74% vs. 60% of others), but they need to develop the requisite processes and policies to capture this value. Just 18% have addressed the legal risk of mistakes made by machines—such as poor investment decisions or misallocation of customer assets.

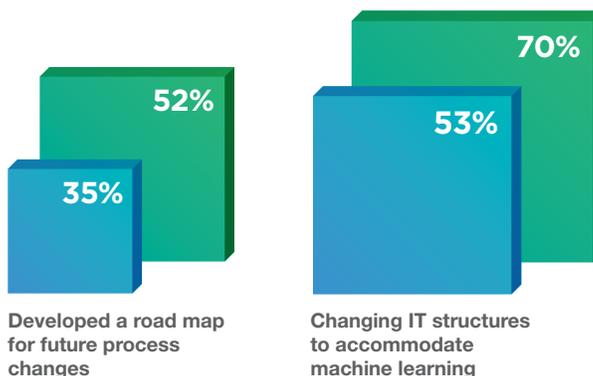
How financial services perform

Financial services Others

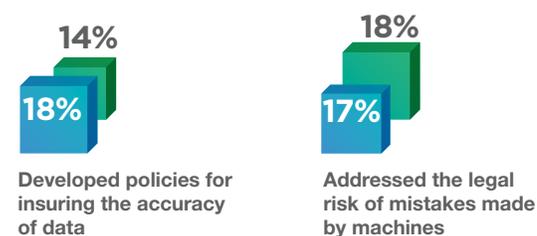
Financial services ahead in talent



Financial services ahead in redesigning processes



Financial services must improve risk policies



Conclusion

Financial services firms are further along than companies in other industries in preparing for machine learning: they are more enthusiastic about the technology; spend more on the technologies that support it; and are taking steps to redesign business processes in support of this new way of working.

However, in racing ahead with machine learning adoption, financial firms have not made the process and risk-mitigation changes needed to protect the companies and their clients.

As financial services companies continue to mature in their use of machine learning and other emerging technologies, they need to focus even more on skills and business processes. Financial technology startups continue to place pressure on incumbents to reach customers in new ways, and this pressure to innovate will demand advanced use of machine learning across the business. Getting it right will require new talent and technology investments, along with an increased focus on risk mitigation and new business process development.

First Mover Advantage

We isolated a group of respondents—we call them first movers—who are ahead of their peers in spending on machine learning, automating business processes, making organizational changes to support digital work, and updating business processes and talent strategy (see our [Global Point of View](#) for a full breakdown of the criteria). Their plans and actions provide a useful guide for CIOs to advance machine learning in their companies.

Companies are just beginning to adopt this technology, but some are further ahead than others: 10% of global CIOs and 14% of CIOs in the financial industry qualify as leaders in our analysis.

First movers demonstrate leadership in a number of areas: They are concentrating on innovation (70% vs. 54% of others), and say automating routine processes (50% vs. 33%) and digitizing business processes (46% vs. 27%) will be important to their organization's success over the next three years.

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