



Why CFOs should have artificial intelligence on their minds

Smart CFOs now have to give serious thought to artificial intelligence (AI). The technology, which enables computers to be taught to analyze data, identify patterns, and predict outcomes, has evolved from aspirational to mainstream, opening a potential knowledge gap among some finance leaders.

In fact, “AI’s ‘early adopter’ phase is ending,” according to the recently published third edition of [Deloitte’s State of AI in the Enterprise](#) report.¹ The survey, which collected responses from nearly 2,750 executives at companies that have adopted AI, found that about half of respondents (47%) were “skilled” in their AI efforts, meaning that their companies had launched multiple AI systems, but lagged in terms of their number of implementations or their

AI expertise—or both. Another 26% were categorized as “seasoned,” given that they had already built multiple AI systems and shown a high level of maturity in selecting, managing, and integrating AI technologies.

For their part, CFOs seem eager to explore AI’s potential, despite the pandemic-forced focus on cash. In fact, in Deloitte’s North American [CFO Signals](#)[™] survey for the third quarter of 2020, “accelerated business digitization,” including AI, was one of the top strategic shifts CFOs said their companies were making in response to the turbulent economic environment.²

What many finance leaders recognize is that AI is more than another cutting-edge tool. By unleashing its full capabilities in finance and throughout the business, companies

can turn it into a driver of differentiation that not only increases productivity, but also boosts growth. Within the finance function, for example, AI can be applied to replacing repetitive and labor-intensive tasks, performing such transactional work with increased speed and accuracy. Moreover, with its capacity to learn from large datasets, the technology can also be used to improve accuracy in such areas as budgeting and forecasting to enhance companywide decision-making.

In this issue of *CFO Insights*, we’ll discuss how finance leaders can incorporate AI (particularly the pattern-recognition skills of its machine learning application) into their operations. In addition, we’ll explore some of the decisions involved with implementing AI: What kinds of projects should you 

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start with (Hint: think visibility)? Where can you source hard-to-find talent that aligns with the mission (Hint: look around you)? Should you now become a data scientist—or at least learn how to sound like one (Hint: apply humility liberally)?

Getting smart about AI and ML

The term “artificial intelligence” refers to the concept of making machines smarter, enabling them to mimic human cognitive functions. Machine learning (ML) is an algorithmic branch of AI that involves allowing the machine to teach itself based on the data it receives. As the algorithms derive predictions or insights from the data, and get feedback on the outcomes, they keep refining their capabilities to achieve higher degrees of certainty.

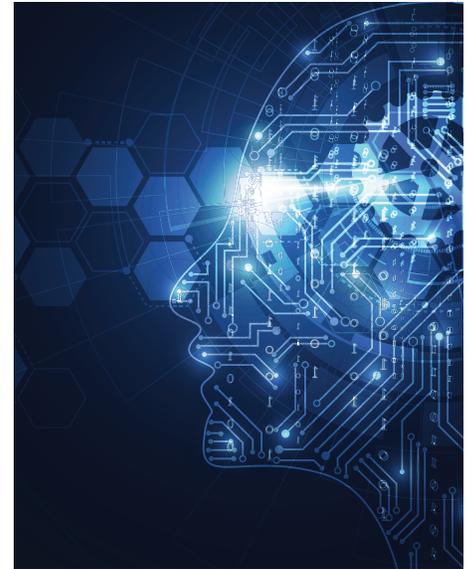
Such an approach is clearly well-suited to the finance function, which routinely relies on large and complex volumes of data, both financial and operational, to fuel its many processes. In the *State of AI* survey, 67% of respondents reported that they are currently using machine learning, and almost all (97%) plan to use it in the near future. Among executives whose companies have adopted AI, many envision it transforming not only businesses, but also entire industries in the next five years (see Figure 1). Using ML to optimize and transform processes, CFOs can automate tasks that typically require manual intervention, improving the accuracy of the accrual process or speeding up account reconciliation, and, ideally, eliminating any traces of human bias.

But ML’s place isn’t just in back-office applications, where it can boost efficiencies. By partnering with the commercial side of the business, ML can produce insights and boost predictability, providing increasingly accurate predictions as to, for instance, which customers are likely to make repeat purchases, or which suppliers are likely to default.

The algorithms, of course, only know what they absorb from the data—which is based on countless human decisions and a vast array of systems. As such, its knowledge base reflects and projects flaws, ranging from inconsistent data quality to potential human bias. Identifying and eliminating such deficiencies requires ongoing maintenance and testing, subjecting the algorithms to quality control so that, for instance, a bank doesn’t unfairly reject the lending application of a credit-worthy individual. ML would know better.

Around the blocks

The technology’s capacity for learning depends on not only the volume and quality of data it receives, but also how well it is aligned with the problem. To lay down a solid foundation for the technology, companies need to assess and mitigate any quality issues involving data, undertaking data-cleansing initiatives to boost integrity and accuracy. Companies that set their expectations high, and find the availability of relevant data low, are setting themselves up for disappointment.



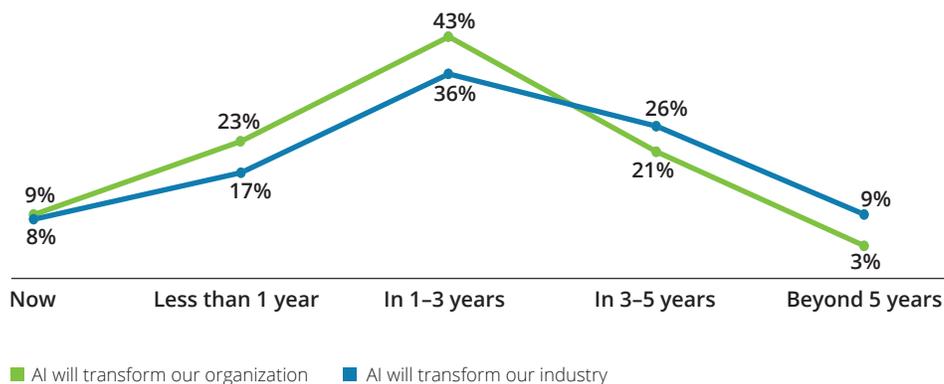
To support AI, any data governance issues also need to be addressed beforehand. Internal wrangling over data—some data owners may be risk averse about sharing theirs, while others want to keep control over their data because of its value—can result in needless delays.

But CFOs who remain focused on realizing the ultimate benefits of ML sooner rather than later—aware that it can free up their teams to spend more time on strategic issues—can see past the initial questions they may have, including:

- **How can we fund our AI projects?** Taking a cross-functional, integrated approach to ML will likely produce the most value for the enterprise, resulting in a shared decision-making tool. But companies can start with point solutions, aiming the technology at a specific problem, rather than investing in a more costly enterprise-wide solution. Barriers to entry for AI have dropped significantly, as platforms offering **ready-made** infrastructure and algorithms have become available.³ If necessary, finance leaders can explore creative funding sources, such as vendor subsidy and ecosystems programs, co-investment strategies, and other models, to provide funding for technology innovation within finance. Teams can also explore venture capital models to fund AI use cases and to use the outcomes as proof points for further investment.

Figure 1. Artificial intelligence will drive real change

Both organizations and industries are poised for transformation in the near future.



Note: Percentages may not total 100% due to a small number of respondents who answered “Don’t know.”
Source: Deloitte, *State of AI in the Enterprise*, 3rd Edition, 2020.

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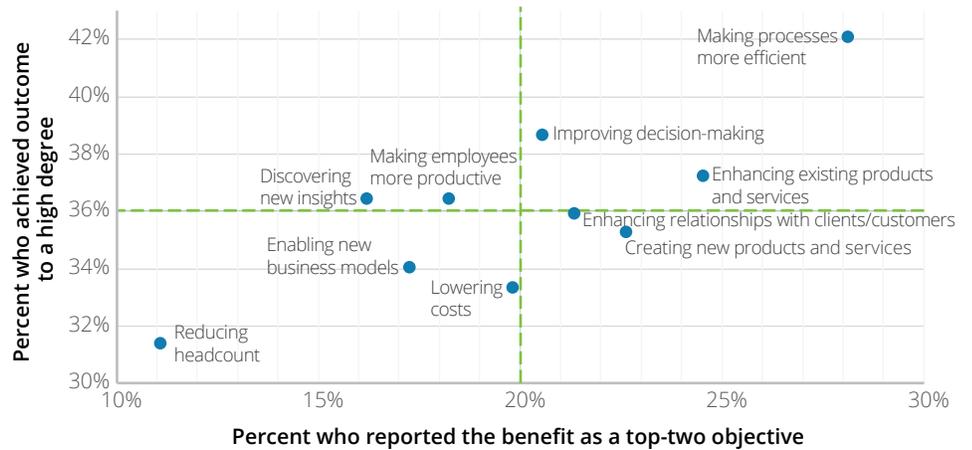
- Which early use cases are likely to yield a financial return?** ML's self-learning capabilities means it gains value over time. But identifying a specific problem, and defining the desired outcome, can enable CFOs to measure the technology's impact early on. The greatest opportunity for short-term ROI may lie with streamlining back-office activities, including transaction-processing (particularly in shared services). Decreasing labor-intensive repetitive tasks will quickly and clearly justify long-term investment in AI technology. In the *State of AI* survey, respondents cited improved process efficiency as the top benefit that AI has enabled them to achieve (see Figure 2). The best use cases tend to be function-specific, but should also offer broad visibility, if possible.

- Should we build or buy AI?** Finance leaders may want to collaborate with their technology counterparts (CIO, CTO) to determine whether to partner with third-party AI providers, develop solutions internally, or pursue a hybrid approach. In making this decision, finance and IT should investigate other use cases being implemented in the organization and leverage home-grown experience and talent to understand what suits the current environment. Organizations frequently mix bought capabilities and home-grown models. When evaluating whether to expand partnerships with cloud vendors and other providers or to foster new ones, consider if the problem is shared across other areas of the enterprise and ensure alignment of the organization's AI ambitions. Is the process you are solving for specific to finance (e.g., revenue forecasting)? Or is it a solution that could benefit other areas as well (e.g., invoice matching)?

- How can we quickly develop in-house expertise?** Assessing off-the-shelf solutions and designing realistic use cases requires deep competency in AI. One option is to outsource the technical end to a provider of managed AI services, enabling finance to focus on excavating data out of functional silos. Developing in-house expertise can begin with prioritizing AI-related skills in recruitment and training.

Figure 2. Benefits package: the top advantages of AI

Process efficiency tops the list of benefits achieved with AI.



Note: Blue dotted lines represent the average of each dimension.
 Source: Deloitte, *State of AI in the Enterprise*, 3rd Edition, 2020.

It may be helpful to stage a hackathon to solve a specific business problem, using it to identify a group of developers who are interested in becoming ML engineers. By making it part of their job to do so, the company can build a knowledgeable team.

- Why should we trust AI?** The notion of intelligent machines replacing—and overpowering—humans is strictly the province of blockbuster movies. CFOs should evaluate their current operations and identify opportunities to update the operating model, ensuring that the right people and capabilities are in place to maintain an AI-fueled finance function. Employees embedded in transactional tasks may need to retool themselves, developing stronger analytical skills. The finance function's overall skill set may shift, but not necessarily its population of FTEs. Humans with the right training need to manage AI systems, leveraging the appropriate capabilities.

Artificial intelligentsia: Humans working with machines

In the past, many CFOs have led campaigns to incorporate analytics, particularly in FP&A. But the stakes and rewards involved in championing ML are much higher, given its potential use across the enterprise. And while uncertainty surrounding the pandemic continues, the fact that ML is not rules-based (there's no limit to its ability to evolve) means it can change and adapt

as the next normal takes shape. Similarly, finance leaders can lay the groundwork for the technology by taking piecemeal steps, such as:

- Inventory internal capabilities.** AI technology, including ML, is function-agnostic, so before CFOs plant their flag, they ought to check to make sure other functions haven't preceded them. Marketing may have begun using it to understand how to better retain customers in a virtual environment. Supply chain may already be relying on it to help anticipate production or inventory disruptions. If significant internal capability exists, finance can get a jump-start by piggybacking on those other functions' efforts.
- Choose a data strategy.** ML benefits from receiving a very complex set of inputs and analyzing how that data fits together. Data often ends up residing in functional silos, where it isn't rich enough to inform the ML model and help with decisions. Finance needs to come up with a strategy for breaking down those silos—or design a limited pilot project that maximizes the data within a silo, such as classifying sales data for use by finance and commercial teams (see [“The CFO guide to data management strategy,”](#) Crunch time series, Deloitte Development LLC, 2020).

- 3. Establish a cross-functional task force.** Since just about all functions can leverage ML, it's best treated as a collaborative, iterative process. It's vital that whatever initial issues ML is deployed to solve can produce results that will have a strong impact on the business. Furthermore, any such tests should be on the radar of all members of the senior leadership team. Experimentation may result in success or failure—or something in-between, depending on the different perspectives that are brought to bear.
- 4. Build an AI Center of Excellence.** Depending on the company's AI maturity level, and the breadth of its capabilities across the organization, it may choose to establish a Finance AI Center of Excellence. Such a resource can help spread the technology throughout the business, evangelizing for AI, deploying resources for pilots, leading training, and advising on hiring. Such a COE could be launched as a subset of an existing continuous improvement function within finance or within an innovation group that sits in the CTO's office.
- 5. Confront fear of AI.** Finance executives may instinctively resist the appeal of ML, as many have previously reacted to other mammoth IT projects. They may feel that they aren't sufficiently knowledgeable or conversant to engage their peers in a dialogue about AI. But through cross-functional partnering, CFOs will gain fluency around AI, which will translate into confidence and a regular seat at the table when it comes to tech strategy.

No matter how they initially react, most CFOs can learn to appreciate what ML can do. Yes, implementing it successfully may produce some misses, likely the product of misalignment and data quality issues. That's why it's so important for CFOs to approach AI projects with humility regarding the company's talent and technology. It's an emotion that separates humans from other species—including, presumably, even the most intelligent machines. ◀

Brain trust: An ethical framework for AI

AI's enormous potential for transforming business is nearly matched by its capacity for generating ethical dilemmas.

In Deloitte's recent [AI in the Enterprise, 3rd Edition study](#), 95% of enterprise AI adopters say they have concerns about ethical risks.⁴ More than half of respondents—which totaled 2,737 IT and line-of-business executives—agree that their organization is slowing adoption because of those emerging risks.

To help companies address AI ethics and integrity, the [Deloitte AI Institute](#) created the [Trustworthy AI™ framework](#).⁵ The framework aims to guide companies on applying AI responsibly and ethically, as well as managing related risks and challenges:

- 1. Conduct fair and impartial use checks.** To avoid replicating the bias introduced by humans, companies need to determine what constitutes fairness and actively identify biases within their AI algorithms and data, imposing controls to avoid unexpected outcomes.
- 2. Implement transparent and explainable AI.** For AI to be trustworthy, anyone whose data is used—employees, customers, suppliers—should know how it's being used and how the AI system is making decisions. Organizations should build algorithms, attributes, and correlations that are open to inspection.
- 3. Establish responsibility and accountability.** Trustworthy AI systems need policies that clearly establish who is responsible and accountable for their output. This issue epitomizes the uncharted aspect of AI: Is it the responsibility of the developer, tester, or product manager? Is it the machine learning engineer, who understands the inner workings? Or does the ultimate responsibility belong with the CIO or CEO, who might have to testify before a government body?
- 4. Setting proper security in place.** AI should be protected from risks, including cybersecurity threats, that could lead to physical and/or digital harm. Companies need to thoroughly consider and address those risks and then communicate them to users.
- 5. Monitor for reliability.** For AI to achieve widespread adoption, it must be as robust and reliable as the systems, processes, and people it is augmenting. Companies need to ensure their AI algorithms produce the expected results for each new data set. They also need established processes for handling any issues and inconsistencies that arise.
- 6. Safeguarding privacy:** Trustworthy AI must comply with data regulations and only use data for its stated and agreed-upon purposes. Organizations should ensure that consumer privacy is respected, customer data is not leveraged beyond its intended and stated use, and consumers can opt-in and out of sharing their data.

Having these measures in place to harness the strength—and manage the risk—of AI offers ancillary benefits. In addition to preserving trust, such safeguards enable organizations to innovate, break boundaries, and drive better outcomes.

End notes

1. "Thriving in the era of pervasive AI," Deloitte's *State of AI in the Enterprise*, 3rd Edition, The Deloitte AI Institute, Deloitte Development LLC, July 2020.
2. *CFO Signals*,™ Q3 2020, CFO Program, Deloitte LLP, August 2020.
3. "Thriving in the era of pervasive AI," Deloitte's *State of AI in the Enterprise*, 3rd Edition, The Deloitte AI Institute, Deloitte Development LLC, July 2020.
4. Ibid.
5. *Trustworthy AI: Bridging the ethics gap surrounding AI*, Deloitte AI Institute, Deloitte Consulting LLP.

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