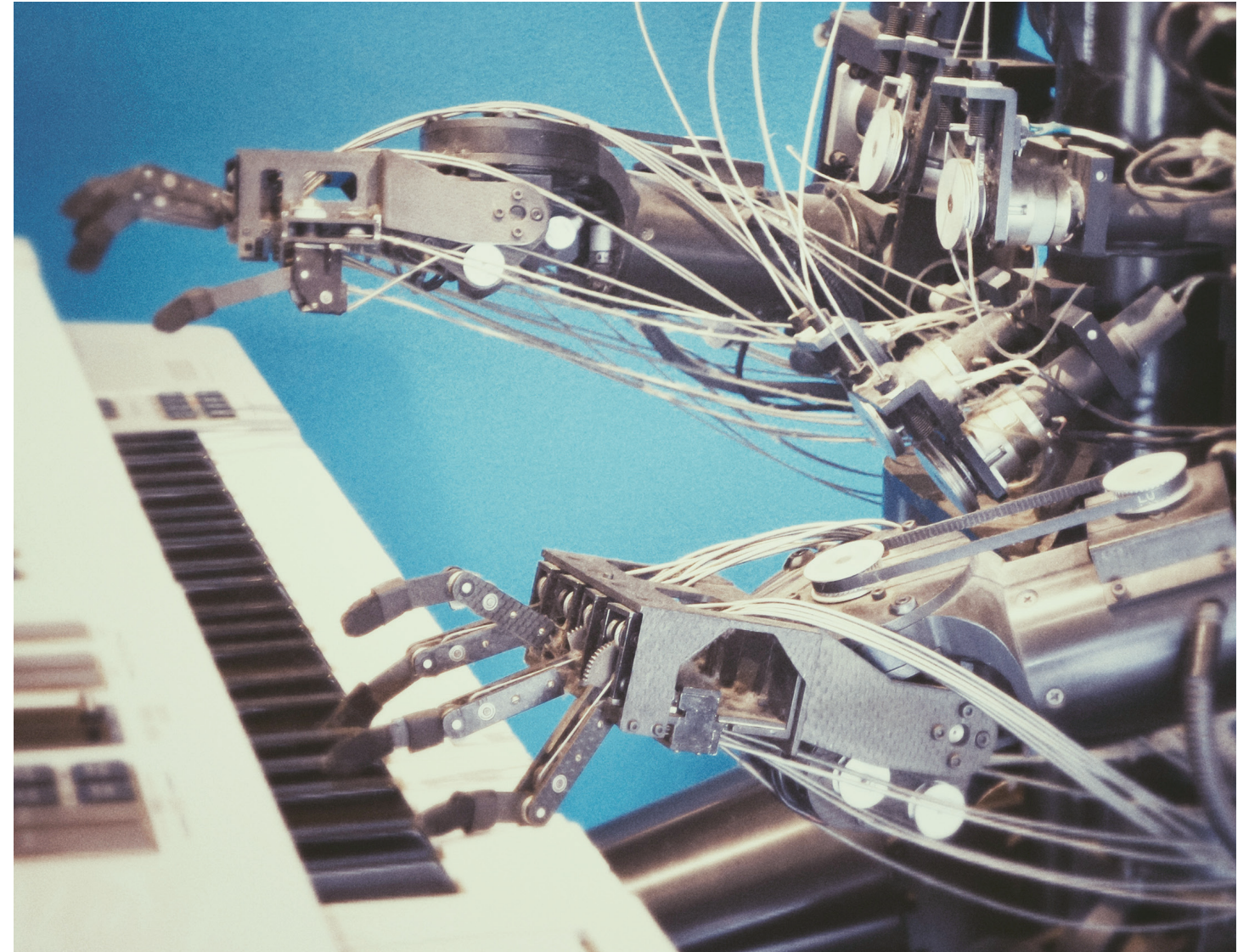# Deloitte.

Seizing the real AI opportunity
Ignore the hype to make real progress

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Thanks to rapid advances in artificial intelligence (AI)-related technologies and tremendous growth in the amount of data available to businesses, financial institutions and other companies are well-positioned to seize opportunities to transform themselves into AI-powered, insight-driven organizations. The International Data Corporation forecasts spending on AI and machine learning to rise from $12 billion in 2017 to $57.6 billion by 2021.

But adoption remains in the initial stages, and there are challenges. Expectations are rising rapidly thanks to the achievements of technology giants, nimble fintechs, emerging AI firms, and the sheer amount of hype surrounding AI. Decision-makers at traditional, legacy companies—from banks to industrial firms and more—must find ways to look past the hype, and set and manage realistic expectations for AI within their own organizations. They must also address fundamental questions: How can they scale AI pilots and proofs of concept? How do they ensure AI solutions deliver a meaningful and measurable business impact? How can they use AI to spark innovative thinking and generate new products and services? And what steps can be taken to accelerate progress?

Untangling what we mean by "AI"

Artificial intelligence is decision-making enabled by machine learning.

*Machine learning describes the ability of computers to learn through the analysis of data.*

Companies and commentators alike use "AI" as a convenient shorthand for the range of powerful new technologies that are changing the way we live, work, do business, and make decisions. However, it's worthwhile to distinguish between AI and other terminology that often arises in these conversations.

In straightforward terms, artificial intelligence is decision-making enabled by machine learning. Machine learning, in turn, describes the ability of computers to learn through the analysis of data. Deep learning involves the harnessing of massive computer processing power and incredibly large datasets to solve highly complex problems, particularly problems requiring analysis of unstructured or analog data (e.g., audio, raw text, photos).

Especially advanced or powerful systems can exceed human capabilities, at least in very specific tasks such as object recognition, speech recognition, and game-playing, where they can analyze far more data than we can far more quickly. This is cognitive AI, cognitive being the human-like layer of interaction between people and the underlying data and technologies that form AI. Cognitive bundles algorithms to simulate such human characteristics as perception, memory, and judgment.
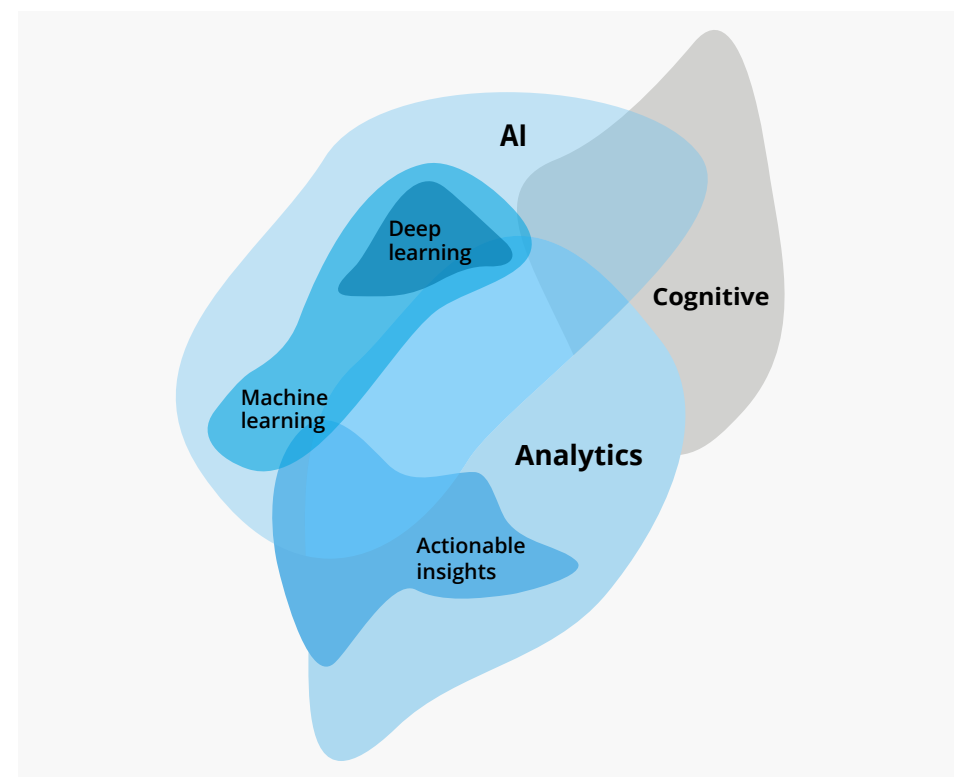
Where does analytics fit into all of this? Analytics is perhaps best thought of as the built-in intelligence that enables a business to start moving in the right direction, make smart adjustments on the fly, and then hit the target with unprecedented accuracy and impact—rather like a guided missile. Analytics is not only a core input to an organization's strategy process, but a core capability that needs to be built into everyday business practices—helping the organization make smarter decisions at every step.

Getting past the AI hype is key

From the business pages to Black Mirror, AI is the focus for tremendous hope and rising fear. Some believe AI will herald a brave new world of human achievement, while others worry that autonomous machine intelligences will lead to a dystopia. And many feel their vision of an AI-dominated future is imminent.

The reality is more humble. It's undoubtedly true that AI and its related technologies have made incredible advances in recent years, thanks in part to cloud computing and powerful new processing chips. And there is some substance behind the hype. AI does indeed offer the possibility of increased productivity, improved customer interactions, and the solving of problems too complex for human brains.

But AI is still in its infancy. The widespread perception that society is on the cusp of unveiling artificial general intelligence or "sentient" AI that's equal or superior to human intelligence far exceeds reality. It's not yet clear when—or even if—cognitive technologies will ever reach a point where AI is better than humans at every kind of thinking. Current technologies offer little to suggest they'll lead to artificial general intelligence; it's likely a decade or more before AI will be advanced enough to realistically augment our own intelligence, much less supplant it. Machine learning, which in its existing form is suited best to carrying out very specific, narrow tasks, won't be independently developing products or solutions any time soon.

Despite this, organizations can't be complacent about AI, or slow down the vital transformations already underway using today's AI systems. The first significant deployments will be behind the scenes, as AI systems assume control over back-office processes and functions that customers are affected by but never experience directly: inventory management, credit risk decisions, and the like. Financial institutions and others will increasingly deploy roboadvisors to support large segments of their customer base. Firms in many industries will introduce AI-powered chatbots to deliver customer service with a friendly, human-like face. Replacing smart humans with smart machines—or perhaps putting them alongside each other—will likely emerge as a popular cost-saving approach.

The sizable gap between AI hype and AI reality can create very real issues for leadership teams and their companies. Executives and others whose day-to-day work keeps them well removed from AI's technological trenches often fall into the trap of believing AI is further along than it really is. Technology teams, in contrast, can grow frustrated by what they perceive as leadership's outlandish expectations.

Navigating these two very different perspectives can slow an organization's progress—or worse. Because when reality hits and doesn't live up to the hype, there's a risk that decision makers will grow disillusioned and cut back on further AI investment. But there's no reason for despair, because we've been here before. Many organizations encountered similar disillusionment and disagreement as analytics arrived amid much fanfare, only to fall rather short of its incredible hype. Yet today we're seeing analytics truly beginning to live up to its earlier promises; it's just taking a bit longer.

Curbing AI investment is exactly the wrong thing to do. Because as with analytics, AI is only going to grow more and more powerful, and those companies that opt out will find themselves cast aside in the years to come.

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Older companies weren't set up to function like 21st-century, data-driven companies. Yet there are ways they can overcome these challenges and accelerate their progress with AI.

Seizing AI opportunities will become easier

Moving past the hype, good and bad, surrounding AI is essential if decision makers want to make real, meaningful progress in using AI to transform their business. Financial institutions and other organizations can exploit the power of machine learning, cognitive computing, and deep learning in many areas of their business. The technologies can be used to better personalize customer communication and engagement, enabling seamless, automated, cross-channel customer self-service at an entirely new level of convenience. They can be deployed to automate highly repetitive tasks and knowledge-related processes—even those that involve natural language, such as regulatory compliance and business reporting.

Today, companies of all sizes and in all industries have access to a wide array of tools and data that are ready to be deployed to improve efficiencies and enable useful business insights. Proprietary and open-source software is available, and cloud-based hardware means researchers and developers can readily access the computing power they need. Prominent vendors have made open-source data libraries available to help "train" machine learning systems. The barriers to entry are dropping rapidly and dramatically, making it easier for businesses to make significant progress on their AI vision.

Legacy companies face real but surmountable challenges

Financial institutions and other "legacy" companies whose businesses were around long before the internet era find themselves playing catch-up with startups and technology companies that are setting AI expectations—without having to overcome legacy companies' structural obstacles.

Twenty-first-century companies such as Google, Facebook, and Amazon, and emerging fintech, insurtech, and AI-driven businesses are first and foremost data companies. They've been built from the ground up to accumulate vast quantities of data, analyze it, and use data-powered insights to inform their business decisions quickly and nimbly. And they're skillful at gathering and exploiting data by design.

Older companies weren't set up to function in this way, and often confront less-than-optimal circumstances in trying to move forward. They may have the algorithms they need, but they discover they lack sufficient data or their technology is inadequate to the task. The organization's people and culture may be unready, unwilling, or unable to translate data-driven insights into swift, practical action. Regulators might not be ready to sanction or approve cutting-edge, AI-driven approaches to tackling traditional services or reporting.

These are just some of the factors that can impede legacy companies' efforts to scale AI, derive meaningful business value from AI projects, or spur greater innovation. Yet there are ways organizations can overcome these challenges and accelerate their progress with AI. The following are some examples drawn from Deloitte's own experience working with clients.

How to scale AI solutions

Many organizations have embarked on pilot projects, test cases, and proofs of concept to explore AI's potential and begin the journey of embedding AI-enabled, data-driven decision-making into the enterprise. Yet moving past these early efforts to expand the use of AI into more areas of the organization often stalls. In many cases, it's because companies focus so deeply on the technology, data, and algorithms involved that they overlook the fundamental importance of culture and talent to the success of such initiatives.

In our experience, companies can overcome this by combining long-term vision with short-term execution. Developing and communicating a long-term vision for transforming the business into an AI-powered, insight-driven organization can unite people and build buy-in for the changes to come. Coupling that vision with a relentless focus on short-term execution that delivers regular quick wins and real business value can create momentum and provide the foundation for change.

Deloitte helped a Canadian financial institution develop a five-year analytics roadmap that laid out a long-term vision for itself. The organization, with our assistance, followed up with a series of successful projects that delivered meaningful value. In the first 20 weeks, three pilot projects were executed to test vital systems and refine recommendations; two projects were undertaken in the following four weeks to improve the credit risk model and deliver better value to merchant services clients; and four more projects were executed in the subsequent 12 weeks with the help of agile methodologies. The combination of long-term vision and short-term execution has provided the financial institution with up to $58 million in credit loss savings and other benefits.

Identifying measurable business impacts

As many organizations have discovered in their earlier forays into analytics and AI, it's one thing to uncover insights through data analysis and something else entirely to find insights that have a measurable impact on the business itself. We believe organizations need to urge their analytics teams to use machine learning to dig deeper into the data to find the complex patterns and insights that lie undiscovered or simply overlooked. Such insights can be key to unlocking new value.

A US financial institution, in one example, harnessed the power of AI to eliminate "stupid declines" on credit authorizations. These declines, driven by rigid adherence to strict rules, were a source of enormous frustration for customers and merchants alike. The organization used machine learning to explore and make sense of uncommon customer behaviour patterns that went unnoticed by existing authorization rules.

As a result of this change, the institution experienced a 20-point jump in its customer-experience Net Promoter Score, a rise in month-to-month spending for most of its active customers and—most notably—an increase of billions in year-over-year purchase volumes for its small-business and consumer card portfolios. By finding what no one had noticed before, machine learning delivered a significant business boost.

Sparking innovation

Organizations in all industries are eager to capitalize on AI to help them improve efficiencies, deliver better customer experiences, and unlock value inherent to the existing business. Many are also hoping to use AI to open up unexpected and innovative avenues to growth and profitability. And sometimes, it can be used to seize the opportunities a company can sense but that lie just outside its grasp.

For example: a major Canadian grocery chain knew, from observation, that customers from ethnic communities were a significant source of revenue. Yet it could not discover a way to realize the opportunity these customers so clearly represented. Deloitte helped the chain use leading-edge analytics to identify its most valuable ethnic shoppers and foster stronger engagement and loyalty among ethnic shoppers overall. We worked with the company to create purchase-based ethnic customer categories, identify product drivers, and generate personalized product recommendations. The behaviours of these new "MVP" shoppers were analyzed closely to help refine approaches for particular customer segments.

Deploying machine-learning solutions to capture this elusive opportunity unlocked a series of new and innovative approaches for the grocery chain. The company now has a richer, more detailed understanding of nearly a million customers and its product drivers, and can provide personalized recommendations right down to the customer level—delivering the timely, relevant offerings customers crave. This greatly refined customer intelligence even enables the company to tailor highly detailed merchandising and marketing recommendations to individual stores and micro-markets.

Steps to accelerate the journey

While the hype may be overblown, the reality is that AI—even in its current, early form—has to potential to transform the way organizations make decisions, unlock value, and achieve sustained, profitable growth. Unlike their modern, digital-first counterparts, legacy companies often face a range of challenges in moving forward with their AI strategies. Fortunately, there are ways leaders and their teams can accelerate their journey, such as:

1. **Ensure your organization is ready.** To deliver on its promise, AI requires organizations to get some preliminary work out of the way first. Does yours have the ability to access clean, quality data inside and outside the business as required? Are you getting value from your analytics efforts to date? Are you making real progress with your digital strategy? If you're still struggling with data, analytics, or digital, your AI efforts will face an uphill battle. Focus on getting the basics right first.

2. **Start demystifying AI.** Expectations for AI are sky-high, and the hype often bears little relation to where AI is today. Bring the business and technology teams together to talk about AI, debunk the myths, and lay out the facts. Discuss the vision, the goals, the strategies, and the challenges, and begin to build a roadmap based on a shared understanding of where you want to go and what feasible steps you can take today.

3. **Start small, but think long-term.** No matter the size of your organization, open source tools and data along with cloud-based processing and storage mean that your teams can begin to experiment and try to make things happen. Get started, look for quick wins, and build on them, using each success to further your organization's larger ambitions for AI.

4. **Don't dabble. Commit.** Avoid having your teams work on projects that demonstrate AI's capabilities but fail to deliver anything of value to the business. Move beyond demonstrations; commit to taking the next step and push on into production. Make bold bets on using AI in a number of areas where success could have a significant and transformative impact. Some of those bets will pay off, some won't, but that's better than any number of ultimately meaningless mock successes.

5. **Learn how to experiment—and embrace it.** AI technologies have come a long, long way in a very short time, but it's still early days. Organizations must learn to adopt experimentation as a discipline, and embrace both trial and error as they learn what works and what doesn't in implementing AI solutions across the data and insights processes. Too many companies continue to take an all-or-nothing, win-or-lose view of AI and other technology investments. The fact is, AI is a new frontier for all of us; we're all going to make the occasional misstep. We have to stay the course.

6. **Don't hire talent and then figure out the AI strategy.** Some organizations rush off to recruit data scientists, engineers, and other technology experts before they've developed a good understanding of what they want to achieve in the short or long term. The result can be costly, frustrated, underused AI teams—and equally frustrated leaders on the business side. Organizations need to develop a long-term vision for their AI efforts and short-term objectives that can be used to refine any recruitment strategy and provide a platform for those essential quick wins.

The AI revolution is just beginning

Artificial intelligence is here to stay. And while it may never live up to the incredible hype surrounding it—positive or negative—there can be no doubt that AI and its constituent technologies are going to profoundly change the way we live, work, and do business, no matter the industry or the size of the organization. Companies ignore the rise of AI at their competitive peril.

There are challenges, especially for large legacy organizations such as traditional financial institutions and other large corporate stalwarts. But rapidly advancing technologies mean that the tools and data required to begin the AI journey—and make meaningful, swift progress—are available and ready to be put to use to overcome those challenges. By staying focused on achieving short-term wins and create momentum and a platform for future AI efforts, companies can achieve their long-term goals for AI.

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