

# All in on AI

## How Smart Companies Win Big with Artificial Intelligence

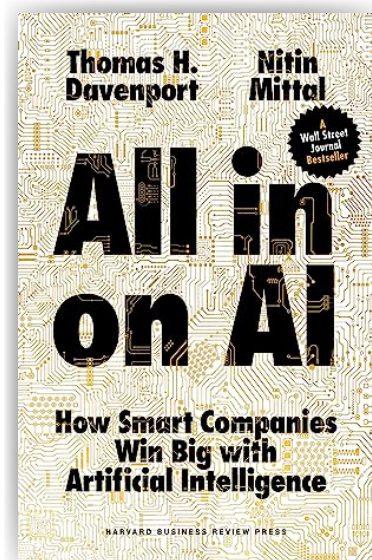
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## KEY TAKEAWAYS

- Going “all in” on AI requires you to create a diverse toolkit of AI technologies that can be broadly applied across the company.
- Developing your company’s AI capabilities requires time, money, and experimentation.
- Because AI runs on data, your company must become cloud-based and collect as much data as possible.
- There’s no standard recipe for AI success—your company must find its own way.

## OVERVIEW

**All in on AI** profiles companies that have transformed themselves by integrating AI into every facet of their operations. Throughout the book, Thomas H. Davenport and Nitin Mittal detail the steps these companies took, which technologies they adopted, and how they succeeded in generating more value. By adhering to the AI lessons they learned, your company can also become more efficient, profitable, and capable of delivering superior customer experiences.

## INTRODUCTION

Artificial intelligence (AI) isn’t just for tech giants, startups, and e-commerce sites. In recent years, companies like Airbus and Ping An have proven that traditional, legacy businesses also have a lot to gain by reinventing themselves with these technologies, which are capable of analyzing, learning, predicting, reasoning, and interacting. However, they’re in the minority, as studies show that only one percent of companies today are going all in on AI.

## WHAT DOES IT MEAN TO BE AI-FUELED?

Companies that are “all in on AI” or *AI-fueled* don’t limit themselves to one new technology or focus on improving a single process. Instead, they integrate as much AI as possible into their operations from the following three AI technology categories:

1. *Statistical machine learning*: Technologies that use machine learning, neural networks, or deep learning to identify patterns in data, learn by experimentation, and generate prediction models.
2. *Logic-based AI systems*: Technologies that make simple decisions by using if/then rules engines.
3. *Semantics-based AI*: Technologies that can assess textual content or decipher human speech and convert it into text.

In addition to having a robust portfolio of AI technologies, AI-fueled companies:

- Create an AI-based system for product development.
- Use AI to analyze and improve their work processes.
- Train their staff to become fluent in AI and its applications.
- Make a long-term commitment to AI by investing significant time and money into its adoption.
- Build voluminous collections of data for their AI tools to analyze and act upon.
- Develop rules to ensure that their use of AI is always ethical.

While the process of transforming your company into an AI-fueled one may seem overwhelming, the long-term benefits greatly outweigh the short-term challenges. Not only will your company become more efficient, profitable, and safe from cyber-intrusion, but it will be able to better generate new innovations, market opportunities, and business models.

## THE HUMAN SIDE

AI can’t transform your company’s success unless it’s embraced by every employee. Therefore, as a leader, it’s important that you cultivate an AI-enthusiastic company culture by:

- *Educating yourself*. Develop a fundamental understanding of AI technologies, how they work, and the IT infrastructure they require.
- *Working across multiple fronts*. Aim to get all departments excited about becoming AI-fueled by modeling the AI attitude, knowledge, skills, and data-driven decisions you want them to adopt.
- *Investing in it*. Becoming AI-fueled is expensive and takes time. It requires you to direct significant funding toward AI experimentation and integration and not to expect a ROI right away.
- *Getting personally involved*. Select a company AI project for which you can oversee every step. This is what Morgan Stanley’s former COO Jim Rosenthal did with the development of a Netflix-like system that recommends personalized investment opportunities to clients.
- *Planting seeds for success*. Provide your employees with AI classes and training opportunities and teach them how the technologies will affect their future work. The more you explain the value of AI and publicize its positive results to them, the more mobilized they’ll become to explore, build, and use it.

## STRATEGY

Before you integrate AI across your company's operations, you must first develop a strategy. To begin the strategizing process, ask yourself the following questions:

- How will adopting AI affect your company's existing business strategies?
- What's your company's strategy for using, managing, and building its AI capabilities?
- How could AI improve the company's operations?
- How will it use AI to create new products and services for its customers?
- How will it use AI to grow and make more money?

Ultimately, there are three AI strategy archetypes:

1. *Creating something new.* Use AI technologies to generate new products, services, business models, markets, or ecosystems. This is the strategy of Toyota, which uses AI to develop new autonomous driving features in its cars.
2. *Transforming operations.* Use insights gleaned by AI to make your company more efficient and effective. Companies like Kroger, for example, have used AI to personalize their grocery shoppers' experiences, improve pricing, and reduce food waste.
3. *Influencing customer behavior.* Provide customers with AI features that impact how they socialize, maintain their finances, or improve their health. Companies like Facebook (Meta) and TikTok employ this strategy by using technology to guide their users' purchasing, sharing, and information-consumption behavior.

## TECHNOLOGY AND DATA

For your company to become AI-fueled, it must adopt the following technology initiatives:

- *Create an extensive toolkit of AI technologies.* The more AI technologies your company adopts, the more it can support a broad range of AI usage. For example, DBS Bank manages 150 different AI projects because it has a diverse range of technologies and the right infrastructure to support them.
- *Build applications faster and better.* When your company uses AI processes like automated machine learning (AML) to create applications that require little human intervention, it becomes more efficient. Kroger began automating solutions to complex business problems to prevent its data scientists from wasting time on iterative tasks.
- *Achieve a broad scale of AI deployment.* To maximize the impact that AI has on your company's performance, you must apply it to as many tasks and processes as possible. Shell, for example, uses AI technologies to monitor pipelines, prevent breakdowns, assist workers, and manage a collaborative database with 160 other companies.
- *Manage and improve data for model training and other purposes.* Data is the lifeblood of AI. Therefore, your company must become cloud-based and have a centralized system for collecting, organizing, and analyzing as much machine-readable data as possible.
- *Simplify legacy applications and complex technology architectures.* Aim to update your existing systems with AI technologies and combine them into a single platform when possible.
- *Build or source a high-performance computing infrastructure for AI.* Your company must use automated tools known as *AIOps* to collect data on its IT operation processes, identify problems, and then

fix them. It's also important that its computing environment comprises the right hardware, servers, and graphic processing units.

## CAPABILITIES

Like any major change initiative, integrating AI into your company requires you to engage in a process of experimentation so that you can learn what works and what doesn't. While developing your company's AI capabilities takes time, you can determine how far along it is in this process by assessing it across the following dimensions:

- The breadth of its AI usage.
- The number of AI technologies it employs.
- The level of AI engagement among its senior leaders.
- The role that data plays in its decision making.
- The number of fully developed and deployed AI applications compared to experiments.
- How integrated AI is in its business strategy.
- How much AI is being used to create something new, improve something that exists, or influence customers' behavior.

Ultimately, your company will advance through five levels as it develops its AI capabilities:

1. *Underachiever*. It has started experimenting with AI but has yet to achieve value from this process.
2. *Starters*. It's experimenting with AI, has a plan to integrate it further, and has deployed a few successful AI systems and tools.
3. *Path seekers*. It's making steady progress in its AI capabilities and has deployed several AI systems.
4. *Transformers*. While not completely transformed, it has multiple AI deployments and attributes in place that are creating economic value.
5. *AI fueled*. It's successfully executed a top-down transformation so that AI has been integrated throughout its operations, and it's now a learning machine.

No matter where your company is in this process, you must ensure that its AI capabilities are:

- *Fair and impartial*. AI should be equitably applied to all "participants" or customers.
- *Transparent and explainable*. Participants should know how their data is going to be used and how the AI systems make decisions.
- *Accountable*. Someone at the company must be responsible for the outcome of AI-system decisions.
- *Safe and secure*. Measures must be taken to protect participants' data from being leaked or abused.

## INDUSTRY USE CASES

All companies can benefit from becoming AI-fueled, no matter what their business is. The following are examples of how companies in different industries can harness AI to create value:

- *Consumer*. These companies can use AI to optimize their supply-chain flow and ensure that their shelves are always well-stocked. They can also use AI to assess their customers' data and better understand their preferences, predict what they'll want, and personalize their shopping experiences.

- *Energy, resources, and industrials.* While these business-to-business companies don't always have enough customer data for machine learning, they can use AI for assessing the environment and maintaining their assets. For example, Shell uses predictive models, drones, and sensors to determine when it's time to replace their equipment before it breaks down.
- *Financial services.* Banking and investment management companies can use AI for everything from assessing legal compliance to detecting consumer fraud, predicting what trades will fail, incorporating biometric digital payments, and making real estate price predictions. Insurance companies can use AI for evaluating risks and claims.
- *Government.* For organizations in the public service industry, AI can be used for population risk support, administering benefits, video surveillance analysis, and military simulations.
- *Life sciences and healthcare.* Digital data flow can help healthcare providers monitor their patients' vitals, make diagnoses, and personalize treatments. AI can also assist pharmaceutical companies with clinical drug trials.
- *Telecommunications.* Media companies can use AI to detect deepfake videos, provide language translation services, analyze video and audio quality, and create metaverse content.

## BECOMING AI FUELED

As it's still the early days of AI adoption, there's no singular "right" way to turn your company into an AI-fueled one. The following companies took different approaches to going all in on AI:

- *Deloitte.* While not fully AI-fueled yet, Deloitte has become a company where smart people collaborate with smart machines. So far, it has used AI to improve its people-oriented services, modernize its systems, reduce the drudgery of its employees' jobs, and continuously experiment to find the next "big idea."
- *Capital One.* In 2011, Capital One decided that to make banking easier for its customers, it would need to completely reinvent its business by integrating AI into everything—from its culture to all of its processes. To facilitate this transition, it went "cloud native," built a large-scale engineering department, and hired thousands of people into new digital jobs.
- *CCC Information Solutions.* CCC went all in on AI with the goal of reducing the administrative burden for car insurance companies and their customers when they're in accidents. It became AI-fueled by leveraging its extensive data assets, ultimately providing its machine learning technologies with trillions of data points and images of past accidents to make assessments.
- *Well.* A startup that aimed to be AI-fueled from its conception, Well encourages people to take better care of themselves by collecting data on their behavior, providing them with personalized healthcare advice, and providing rewards when they follow through. It built its machine learning models with data scientists and engineers while a team of physicians, nurses, and pharmacists create healthcare content for users.

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## ABOUT THE AUTHORS

**Thomas H. Davenport** is the President's Distinguished Professor of IT and Management at Babson College, a visiting professor at Oxford University's Said Business School, a fellow of the MIT Initiative on the Digital Economy, and a senior advisor to Deloitte's AI practice. He has published over 20 books and 300

articles for *Harvard Business Review*, *MIT Sloan Management Review*, and many other publications. He writes columns for *Forbes*, *MIT Sloan Management Review*, and the *Wall Street Journal*. Davenport has been named one of the world's top 25 consultants by *Consulting* magazine, one of the 100 most influential people in the IT industry by *Ziff-Davis* magazines, and one of the world's top 50 business school professors by *Fortune* magazine. He's also been a LinkedIn Top Voice for both the education and tech sectors.

**Nitin Mittal** is a principal with Deloitte Consulting LLP. He currently serves as the U.S. Artificial Intelligence (AI) Strategic Growth Offering Leader. He was the 2019 recipient of the AI Innovator of the Year award at the AI Summit, New York. He specializes in advising clients to achieve competitive advantage through data and AI-powered transformations that promote amplified intelligence and enable our clients to make strategic choices and transform ahead of disruption. Throughout his career, Mittal has served as a trusted advisor on data, analytics, and AI and has worked across a number of industry sectors. His primary focus has been working with life sciences and healthcare clients, implementing large scale data programs that promote organizational intelligence, and using advanced analytics and AI to drive insights and business strategy.

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