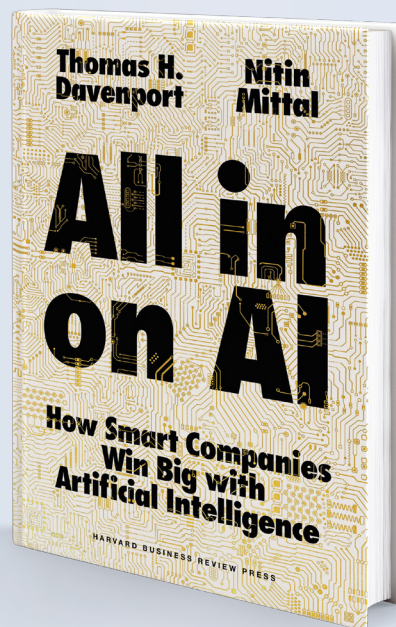


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All In On AI

How Smart Companies Win Big with Artificial Intelligence

By Thomas H. Davenport and Nitin Mittal

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Are You Ready for AI?

In their book, *All In On AI: How Smart Companies Win Big with Artificial Intelligence*, authors Thomas H. Davenport and Nitin Mittal attempt to show their readers how to take their business to the next level by investing in AI technologies. Their goal is to convince their readers to become AI fueled. This requires investment of time and money, and it also requires companies to look beyond the mere basics that AI can offer. Some companies engrossed in AI are natives to the technology, but many existed before this technology did, and the task of these companies is to transform their businesses through artificial intelligence. Davenport and Mittal deeply explore numerous companies in various industries in order to show how the companies harness AI capabilities to different degrees.

Davenport and Mittal begin their book by discussing what they actually mean by the phrase, AI-Fueled. The vast majority of businesses do not qualify for this moniker; in fact, the authors state that at the time of the writing only 1% of large companies can be considered AI-fueled. This requires large amounts of data, and many companies simply never harness it to its full potential by "deploying a model into production." They explain that companies need to "fundamentally rethink the way humans and machines interact within working environments." Companies ought to use AI across different domains, they state. AI is "most commonly applied in making business processes more efficient, improving decisions, and enhancing existing products and services." Both knowledge and computation are required in order for AI to be possible, and executives must be willing to do their research in order to understand all the possibilities that exist. Not all companies that attempt to make progress with AI are able to do so, however. The authors attribute this to implementation issues, data issues, and issues with "integrating AI into the company's roles and functions." Companies can overcome some of these failures by planning from the beginning on deploying the technologies and putting people in charge of development and deployment; they also need to make ample use of data scientists.

While many people believe that AI can decrease the number of employees needed, this has generally not proven to be the case. Rather, people are seeing changes in their jobs rather than the elimination of their jobs. Davenport and Mittal write that "being all-in on AI is as much about people as technology. Companies that want to use a lot of AI in their businesses need a lot of executives and employees who understand how it works." This requires

upskilling workers as well as evangelizing. The authors believe an aim to “replace current employees with new talent” is short sighted, and a better approach is to retrain current employees.

Data is key, the authors say, to becoming AI-fueled. They say that part of this data development process includes exploiting existing data in new ways as well as acquiring new data. Also important for companies is to develop systems whereby they can analyze and use this data in real time. They write, “what contemporary AI capability has essentially done is to make it possible and economical to productionize learning at scale and speed.”

The Human Side

Davenport and Mittal write that “Leadership, culture, attitudes, and skills are human attributes that affect AI as much as or more than any other aspect of a company.” A company must make progress in these areas in order to progress with AI, and enthusiastic leadership is key. Davenport and Mittal believe that leaders need “to be familiar with information technology” and need to be able to work across the business with different groups. Executives also must be willing to finance AI operations, and lastly it is important for leaders to become personally invested in at least some part of the business’s use of artificial intelligence. It is important for leaders to not only know about AI in general but to know, in particular, how it can affect their organization. “In short,” the authors write, “great AI technology without the right culture probably won’t provide any value.”

In order to make the change to being AI-fueled, companies will need to invest in learning. Two ways employees learn effectively are through simulations and case studies. Even after an initial training, however, concepts will need to be reinforced. When it comes to specific projects, “change management typically involves activities such as identifying stakeholders, gaining clarity about objectives and performance expectations for the AI system, communicating frequently about project progress, and demonstrating prototypes to get feedback, and retraining/upskilling workers who will be users of the new system.” Investing in change management increases the likelihood that AI initiatives will succeed.

Evangelization about AI, however, is key according to the authors. They encourage leaders to embrace early adopters and make sure to communicate successes frequently. “To maintain a positive view of AI,” it is important for people to look at both short term gain and long term potential.

Strategy

When discussing strategy, Davenport and Mittal assert that conversations are important because no single individual can have all of the ideas. They see three major archetypes when it comes to what companies try to accomplish with AI. These are “creating something new,” “transforming operations,” and “influencing customer behavior.” Companies attempting to create something new are frequently trying to enter into new markets. These companies are generally more successful than companies that simply seek to improve existing processes. When it comes to creating new products and services, Davenport and Mittal find that this

is much simpler for digitally native organizations than it is for legacy organizations. AI can improve services offered as well as products offered. Davenport and Mittal discuss how successful companies like Facebook and Google have been in influencing behavior in intended and unintended ways, but legacy companies attempt to influence consumer behavior as well. To make any of these changes mentioned, it is important to start at the top of the company as they require strategic decisions. Companies need to have AI strategies if they want to be successful in this venue.

Technology and Data

Davenport and Mittal again discuss the importance of data in this section of their book. Companies that are successful are aware of the breadth of technologies available and attempt to apply them widely. While they state that different companies will have different needs, they write that “a large company is unlikely to get by with a single AI method or technology.” One desire that executives have is for speed, and new technologies are making it “possible for data scientists - both professional and amateur - to build new models that do an excellent job of machine learning, or predicting the future based on past data.” Developing effective models can take time, but the steps involved in the process can now be done by automated learning itself.

Another concern executives have is with getting to scale, but this can be managed when companies combine their technologies “with other changes like new processes and newly involved groups of people.” Davenport and Mittal say that the biggest obstacle companies face in scaling “is acquiring, cleaning, and integrating the right data.” They find that many companies that are AI-oriented share several characteristics. Among these are using a cloud-based system and using machine readable data. They also attempt to centralize their data and use new systems.

Organizations that want to delve deeply into AI need to develop “suitable hardware environments.” They also need storage space. Things are changing quickly in information technology, and changes will need to be continuously made. Therefore, it is important for organizations to designate key people to follow trends and technologies and to determine what might work for their particular organization.

Capabilities

Davenport and Mittal state that “The path to becoming all-in on AI is not particularly well trodden.” Some of the factors they have used to determine maturity in AI are the breadth of use, the extent of AI resources available, and the extent of deployment. The authors go into detail explaining Ping An’s use of AI. They consider Ping An’s attitude to be fully committed. They then explain, through an exploration of Scotiabank, how companies who started out slowly in AI can catch up if they use the proper methods. Some of the ways Scotiabank did this was by “integrating its data and analytics work; taking a pragmatic approach to AI; and focusing on reusable datasets.” Scotiabank used what it called blue collar AI which focused on projects likely to be successful rather than on experimentation and research.



... the first step in ensuring ethical use of AI is in creating ethics policies and placing people in roles to oversee adherence to those policies.”

While Davenport and Mittal believe that the least common objective that companies have with AI is to change consumer behavior, they explain numerous companies that were successful in this endeavor. One such company is the insurance company Progressive which uses AI to get a snapshot of its customers' driving and to provide discounts to safe drivers. Anthem and Manulife are other organizations that use their services to help customers improve their health.

Ethics is always an important consideration when developing AI capabilities. Davenport and Mittal believe that the first step in ensuring ethical use of AI is in creating ethics policies and placing people in roles to oversee adherence to those policies. Policies should ensure fairness, impartiality, transparency, explainability, responsibility, accountability, safety, security, privacy, and reliability. When dealing with ethical issues, some companies join with others to form consortiums. The authors believe there are benefits to these consortia, but resources need to be dedicated to such. Developing policies is not enough for any organization. They need to ensure that they are also governing and enforcing them.

Particular Cases

Davenport and Mittal then move on to discuss specific ways that particular industries and organizations are using AI to advance their objectives. For each of the industries, the authors explain both commonly used cases as well as more narrowly used cases. The industries explored include consumer industries, energy, resources, and industrial industries, financial services industries, government and public services industries, life sciences and healthcare industries, and technology, media, and telecommunications industries. This last industry, technology, media, and telecommunications (TMT) contain some of the most advanced organizations in terms of AI usage.

Davenport and Mittal look more closely at the Walt Disney company and explain some of the ways they use AI. One of these ways is by mimicking the approach that airlines use for pricing based on supply and demand to determine pricing for hotel rooms. Disney's profit management group uses analytics and AI to increase "profitability of hotels, parks, Broadway shows, books, and other Disney assets." The company also uses AI to help with vacation planning and to help analyze where customers are in parks in order to "minimize long lines and to maximize customers' experience."

In order to free up the time of human analysts, Disney uses algorithms to review the pixels in movie frames for quality. Davenport and Mittal emphasize that there may be an overwhelming number of options for companies seeking to advance their AI, but they maintain that it is important for companies to adopt a broad

number of use cases if they want to transform their organization.

In the final section of their book, Davenport and Mittal detail four different companies in their pursuit of becoming AI-fueled. They discuss Deloitte's transformation from being driven by humans to being driven by humans collaborating with machines. Deloitte has employed AI in auditing, tax, consulting, and financial advising. Capital One, Davenport and Mittal explain, transitioned from being analytics based to AI-focused. They quote Capital One CIO Rob Alexander as saying, "Every time we make a decision it's an opportunity to use machine learning." Capital One's IT professionals have switched from building architecture to "developing great software and business capabilities." Switching to the cloud was another step Capital One took to enhance their AI capabilities. The company CCC made the switch from being a data focused organization to being an AI focused one. Davenport and Mittal say about CCC, "This virtuous cycle of more data/better models/more business/more data is what makes the ecosystem structure so powerful in combination with AI." CCC is not trying to replace humans; rather they are attempting to use AI to help employees engage with customers and work on the issues that AI cannot adequately handle. Finally Davenport and Mittal focus on Well which is an AI-fueled start up. Well is a company that is attempting to positively impact people's health behaviors through the use of AI. They use their AI to help personalize care for patients.

Davenport and Mittal conclude their book with a list of important lessons that successful AI-fueled companies have to offer. The first of these is to understand the company's goals with AI. Being more financially successful is not enough; companies need to know what exactly it is that they want to accomplish. Companies also need to create "flexible IT architecture." When legacy companies cannot successfully do this, they may need to consider partnering with startups that do not have this technological depth. Companies also need to gather data. This is easier in some industries than in others. Through these and other lessons, Davenport and Mittal garner all the wisdom they learned through their examination of numerous companies and distill it down into manageable guidelines that companies can follow. Their book begins by discussing what companies need to do in order to become all-in on AI, and the second half of the book details specific uses companies employ with their AI, ending with more in-depth case studies to help the reader determine how AI can improve their own business. Through ample exploration of both industries and particular companies, readers can garner a better understanding of all that AI has to offer.

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