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The State of AI in the Enterprise



A signboard of AI, 5G and IoT technologies on display during the SoftBank World 2019 exhibition hall in Tokyo, July 18, 2019. PHOTO: RODRIGO REYES MARIN/ZUMA PRESS

By Irving Wladawsky-Berger

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Companies are pushing into artificial intelligence, a shift powered in part by cloud providers, whose advanced AI algorithms, trained models and computing power make experimentation easier. But while part of the technology puzzle has been solved, questions remain over how and when to best employ AI. Fortunately, there are enough early use-case scenarios to provide an idea of where enterprise adoption is heading.

Tom Davenport, a professor of information technology and management at Babson College in Massachusetts, spoke about this topic a few months ago at the Massachusetts Institute of Technology's Initiative on the Digital Economy. His speech was based on two recent U.S. surveys conducted by Deloitte LLP. Mr. Davenport was a co-author of both reports.

The 2017 survey polled 250 U.S. executives leading the applications of AI at their companies. The larger 2018 survey reached out to 1,100 IT and other executives at U.S.-based companies, 64% of them at the C-level. All of the respondents were early AI adopters compared with their counterparts at an average company; 90% were directly involved in their company's AI projects; and 75% said that they had an excellent understanding of AI.

A few of the surveys' key findings:

- 20% to 30% of enterprises are early adopters, having implemented at least one AI prototype or production application
- Relatively simple *low-hanging fruit* projects prevail over more ambitious and complex *moon shots*
- Only 24% of respondents to the 2018 survey cited "reducing headcount through automation" as one of their top AI priorities

Early adopters have been increasing their investments in sophisticated AI technologies, with 37% of respondents to the larger 2018 survey saying that their companies had invested \$5 million or more in AI technologies and 82% saying that their AI investments are paying off. Across all industries, the median return on these investments is estimated at 17%.

Not surprisingly, technology companies led both in AI investments and returns, followed by media, entertainment and telecommunications. Health-care and life-sciences businesses are also investing in AI, but, so far, they have less to show for it.

In his MIT talk, Mr. Davenport discussed and contrasted two very different approaches to AI projects. Moon *shots* tend to be highly ambitious, CEO-driven, large-budget projects with very high media visibility. In contrast, low-hanging fruit projects are modest, invisible, and generally CIO-driven, designed to improve operations, customer satisfaction and financial returns.

In health care, for example, the use of AI to transform the treatment of cancer patients is an example of a moon-shot project that turned out to be much more difficult than originally anticipated. Modest health-care AI projects have been much more successful, including patient- and family-centered care, assisting patients with bills and helping staff with IT problems.

In a 2018 "Harvard Business Review" article, Mr. Davenport suggested companies should look at AI through the lens of business opportunities, not technologies. As has been the case with the great majority of new technologies, multiyear moon-shot projects are less likely to be successful than low-hanging-fruit projects that enhance business processes. These are the best way to get on the AI learning curve, and the least expensive and easiest capability to implement, given that companies have long pursued automation and enhancement of business processes.

Early AI adopters struggle with an array of basic challenges. The most common ones, each cited by about 40% of respondents to the 2018 survey, were implementation difficulties, integrating AI into the company's roles

and functions, and data privacy and related data issues—not surprising for a complex technology in its early stages.

Most current AI projects are focused on augmenting the capabilities of the workforce. Automation to cut jobs received the lowest rankings among the list of top AI benefits, the choice of only 24% of respondents. However, the vast majority of respondents agree that AI is transforming many jobs, leading to moderate or substantial changes in roles and skills.

Mr. Davenport concluded his presentation with a set of recommendations to help leverage AI for competitive advantage:

- Think big: Figure out how AI can transform your business processes, business models and overall strategy
- Start small: Begin with pilot projects and less ambitious goals
- Scale up: Develop a pipeline toward production and move along it
- Skill out: Offer AI training to augment the skills of the workforce and help them transition to new jobs
- Put an ethical framework in place
- Appoint a company-wide AI leader

Irving Wladawsky-Berger worked at IBM from 1970 to 2007, and has been a strategic adviser to Citigroup, HBO and Mastercard and a visiting professor at Imperial College. He's been affiliated with MIT since 2005, and is a regular contributor to CIO Journal.

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