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Dispelling five myths about cognitive technology

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ONE of the most frequently discussed topics in business today is artificial intelligence (AI). Its impacts and implications are mentioned in many press accounts. Some of this information is accurate, of course, but it also includes many myths. It's still early days for this technology, and there are not many sources of data. We have been researching Deloitte's work in AI as well as that of market leaders and it's important to dispel myths whenever possible.

In the 2017 State of Cognitive Survey, Deloitte surveyed 250 "cognitive-aware" US executives from large companies. These managers were knowledgeable about AI/cognitive technologies and informed about what their companies were doing with the technology. Their responses about their companies are subjective, but they shed considerable light on the current state of cognitive technology within organizations. Five myths that the respondents dispel are discussed below.

Myth No. 1

The main use of cognitive technologies is automating work that people do. It is rare to find a story in the media about AI that doesn't speculate about how the

technology is destined to put lots of people out of work. (See Myth No. 2.) This is because it is widely assumed that AI is all about automating the work that people do. But this is hardly the full story. As our prior research has shown, and the survey has validated, there are significant uses for AI that do not involve substituting machine labor for human labor.

Our analysis of hundreds of AI applications in every industry has revealed that these applications tend to fall into three categories: product, process, and insight. And these applications don't necessarily involve automating work that people do. Product applications, for instance, embed cognitive technologies into products or services to help provide a better experience for the end user, whether by enabling "intelligent" behavior, a more natural interface (such as natural language text or voice), or by automating some of the steps a user normally performs. Process applications use cognitive technology to enhance, scale, or automate business processes. This might entail automating work that people were doing; but it also might involve doing new work that wasn't practical to do without AI. And insight applications use AI technology such as machine learning and computer vision to analyze data in order to reveal patterns, make predictions, and guide more effective actions. Again, in some cases this can be used to automate human work. But it is also used to do work that no human could have done previously because the analysis was impractical without the use of AI.

Our survey respondents clearly believe that AI is important for more than automation. While 93 percent said its use was important or very important in their internal businesses processes, 88 percent ranked it of similar importance to the products and services they sell. And, as noted below, when ranking the benefits of AI, cutting jobs through automation is at the bottom of the list for our respondents. Enhancing products or creating new ones and making better decisions rank higher. Our research shows that AI is about far more than automating work that people do.

Myth No. 2

Cognitive technologies lead to substantial loss of jobs. It's widely argued that cognitive technologies bring about automation-related job losses. Entire books have been written about this notion. While it's impossible to

know what will happen in the distant future with regard to this issue, both the objectives and the predictions of the survey respondents suggest that job loss won't be a major implication of cognitive technologies.

Among the benefits of cognitive technologies that respondents viewed for their companies, the benefit of "reduce headcount through automation" was selected less than any other choice from a list of nine alternatives. Only 7 percent of respondents selected it as their first choice in benefits, and only 22 percent chose it among their top three benefit choices. These results suggest that cognitive-aware managers aren't even aspiring to automation-driven job loss.

When asked what they believe about the likelihood of job loss in the future, the respondents were similarly positive about the prospects for human workers. They were queried about job-oriented futures three, five, and ten years from now (see figure 1). Just over half of the respondents expect that augmentation—smart machines and humans working alongside each other—would be the most likely future three years from now. Only 11 percent expected substantial job displacement from cognitive technologies. A larger percentage expected that there would be job gains, or at least no substantial impact on jobs.
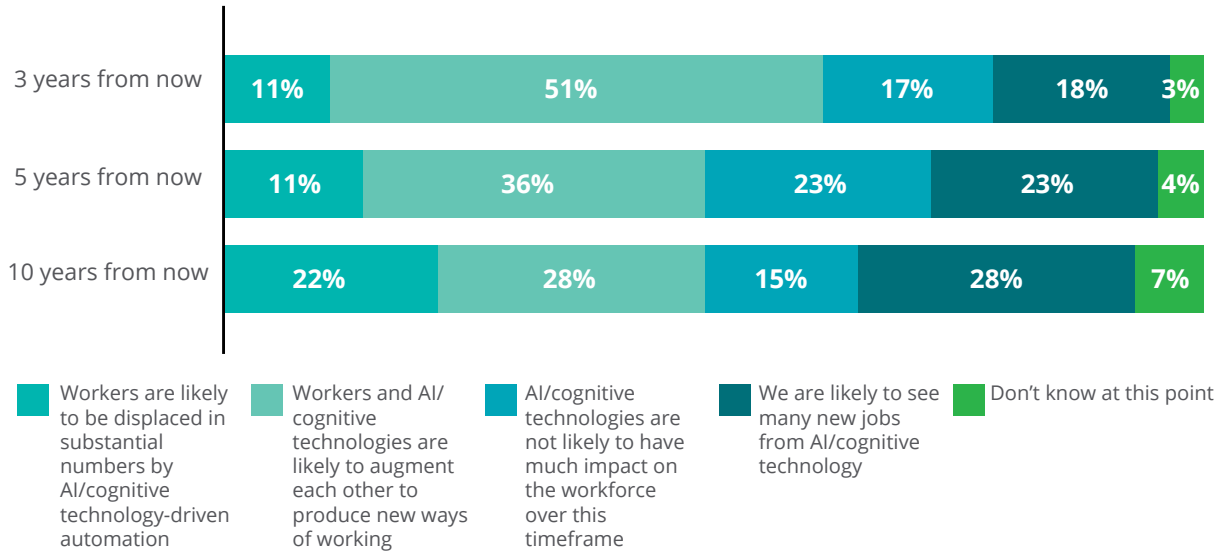
Respondents are more likely to be concerned about substantial job loss when it comes to the ten-years-from-now scenario. Twenty-two percent expect it to happen, but 28 percent still expect augmentation to be the most likely outcome, and the same percentage anticipate new jobs.

In short, while respondents had some concerns about automation-related job loss, they considered it less likely than several other positive outcomes. These cognitive-aware managers understand both their organizations and cognitive technologies; so they are well-equipped to make relatively accurate predictions about job futures.

Myth No. 3

The financial benefits of cognitive are far down the road. For all the hype surrounding AI, many people still view it as a futuristic technology. They see a handful of tech giants making headlines with high-profile applications but believe typical companies will not be able to achieve real financial benefits from using the technology in the near term. There is some truth to this view:

Figure 1. A workforce in flux over the longer term: AI predicted to cause both gains and losses

	Workers are likely to be displaced in substantial numbers by AI/cognitive technology-driven automation	Workers and AI/cognitive technologies are likely to augment each other to produce new ways of working	AI/cognitive technologies are not likely to have much impact on the workforce over this timeframe	We are likely to see many new jobs from AI/cognitive technology	Don't know at this point
3 years from now	11%	51%	17%	18%	3%
5 years from now	11%	36%	23%	23%	4%
10 years from now	22%	28%	15%	28%	7%

Source: Deloitte State of Cognitive Survey, August 2017.

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The tech giants are indeed at the forefront of AI R&D and have capabilities not available to typical companies. On the other hand, there are ordinary companies in every industry that have deployed AI and have already reaped financial benefits from doing so. The survey bears this out.

Respondents shared the level of investment their companies had made in AI. Considering that we asked them to report cumulative investment to date, the amounts were significant but not astronomical. Just 12 percent had invested $10 million or more. A quarter had invested from $5 million to less than $10 million. Most had committed less than $5 million to date. Indeed, 35 percent had invested less than $1 million.

A significant majority—83 percent—of respondents said their companies have already achieved either moderate (53 percent) or substantial (30 percent) economic benefits from their AI projects. Only 16 percent of respondents said their company had so far failed to realize an economic benefit. Furthermore, the survey suggests that the economic benefits of AI increase with experience: The more AI deployments respondents reported, the higher the percentage who said they had realized economic benefits. Among executives who said their company had deployed 11 or more AI projects, 92 percent said their projects had yielded economic benefit.

This is not to suggest that any AI project has a high probability of yielding a positive return on investment. The technology is still relatively immature, and some project failures are to be expected, particularly when applications are novel or the technology untested. It's worth noting that IT projects generally are not immune to failure. A recent study estimated that 14 percent of projects are deemed failures. Still, the data suggests that the benefits of AI are in the here and now—for companies who invest.

Myth No. 4

AI is overhyped and is about to disappoint us. This one, we admit is subjective. There is no question that AI is one of the technology topics about which there is the most buzz. And it does sometimes seem that the key to raising venture capital these days is to include the terms "AI" or "machine learning" in your investor pitch. But is AI overhyped? Many of survey respondents—and recall, they work at companies that are deploying the technology—don't think so. Just 9 percent say they think AI is overhyped; 10 percent, in fact, say that the technology is *underhyped*. And over a third—37 percent—believe that AI is fundamentally different from IT, suggesting they believe at least a lot of the excitement surround the technology is warranted.

Myth No. 5

Cognitive technology is only about transformational change. It's not uncommon to hear cognitive technology projects equated with "moon shots"—highly ambitious, transformational change initiatives. The same projects are also often referred to as disruptive of companies and industries. A manager might assume that cognitive projects that don't transform their companies are not worth undertaking.

A substantial percentage of respondents (47 percent) do agree that "it is important to strive for large-scale, transformational change with cognitive technologies." But 52 percent believe either that it is better to "pick the low hanging fruit" (40 percent) or wait a few years until the technology matures (12 percent). The fact that a majority of respondents believes that something other than transformational change is a reasonable objective suggests that managers can justifiably consider alternatives to transformation.

We believe that companies that have successfully achieved transformation from other technologies should consider pursuing it with cognitive technologies as well. However, any transformational project is likely to face high risks and expense. Multiple less ambitious projects—particularly when focused on a specific business process goal—can be more likely to succeed and may in combination yield transformational outcomes.

Conclusion

As we've noted, the fact that the survey respondents don't agree with the myths doesn't necessarily mean that they won't ever come true. Particularly with regard to future predictions, no one really knows how cognitive technologies will affect our work and lives. But the fact that 250 managers who are knowledgeable and experienced with cognitive technologies do not support (in aggregate, anyway) these myths certainly casts doubt on their veracity. At the very least, the respondent views suggest that all managers should maintain an open mind about the potential and actual impact of these powerful technologies.

ENDNOTES

1. David Schatsky, Craig Muraskin, and Ragu Gurumurthy, "Cognitive technologies: The real opportunities for business," *Deloitte Review* 16, January 26, 2015.

2. Sharon Florentine, "IT project success rates finally improving," *CIO*, February 27, 2017.

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