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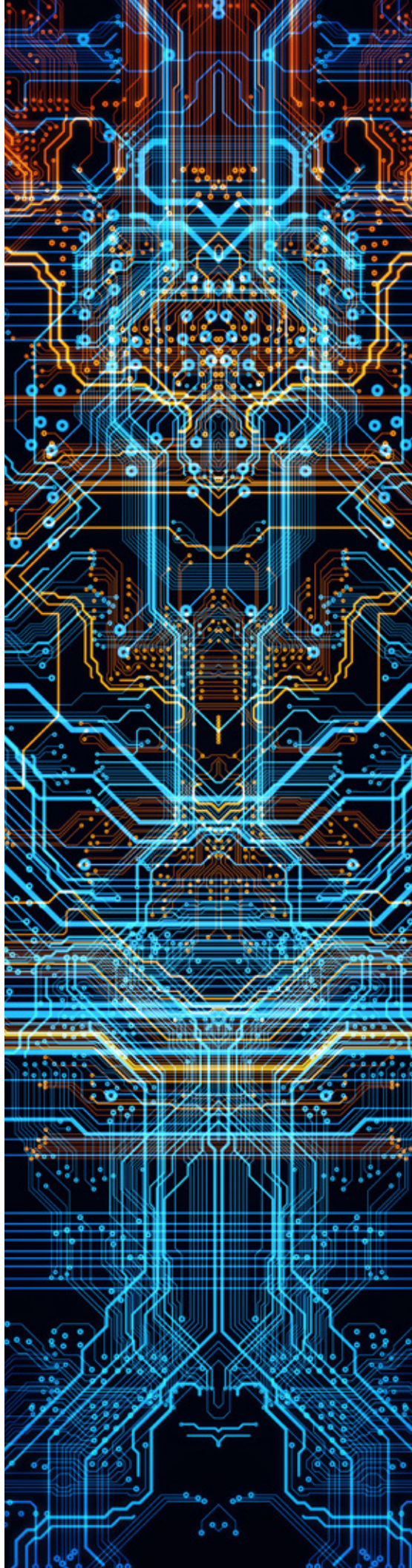
Technology Officer

Separating Myth from Reality

Why Leadership Remains Critical in an Era of Self-Driving Cars and Humanoid Robots

The rapid rise of digital technologies like artificial intelligence (AI), big data analytics and mobility has not just enabled businesses to run more efficiently and effectively. In addition, companies that fully embrace these tools have found them to be a key source of competitive advantage. In a matter of years, trailblazing companies such as Netflix, Amazon and Facebook have evolved from scrappy startups to global behemoths, threatening the very existence of their decades- or even centuries-old counterparts.

These advancements, however, come with a downside. As more human jobs are (or are threatened to be) displaced by the emergence of innovations like self-driving cars, humanoid robots and AI-produced medical diagnoses, it is unsurprising that some worry about a dystopian future in which people are rendered obsolete and only a rarified set of professions still require work by humans.



Despite how easy it is to fall prey to this idea, we would argue that it is a myth. We believe this prospect is far from reality, and the roles of capable talent and strong leadership, especially technology leaders like the chief technology officer (CTO) and chief information officer (CIO), are even more important than in the past. Here's why:

1. Digital technologies are a means to an end and not an end in themselves. In other words, there will always be a need for tech leaders who can provide strong direction, deep insight and strategic vision.
2. While digital technologies have become increasingly powerful, pervasive and transformational, there are still fundamental limitations that make them largely more suited to augmenting — as opposed to replacing — humans. Leaders, then, are necessary to guide this integration.
3. Adoption of digital technologies within organizations requires inspirational leaders who can conceive, create and maintain a culture that can win the hearts and minds of the employees to embrace these new changes.

TECHNOLOGY: THE JOURNEY, NOT THE DESTINATION

Tech experts note that overblown fears about the effects of new developments have always been around, and these changes have never created the chaos that doomsayers envisioned. Examples include the inflated anxiety that greeted the printing press, advanced industrial machinery and, now, robot technology or artificial intelligence. Technological change is happening across the globe to different degrees, and disruption is clearly universal.

As the myth of all-powerful technology grows, it's crucial that technology leaders remain grounded and advocate the idea that, while technology is an important driver of customer experience, innovation and operational synergies, it is only one piece of the puzzle. In other words, technology is a means to an end, not the end itself. A company still needs a wide-focused vision, forward-thinking strategy and the right people in place to incorporate technological innovation and stay apace.

Higher-level executives may be prone to buying into the myths of technology, as well. So tech leaders must be able to evaluate the scope and limitations of technology so they can advise management teams about

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what can — and cannot — drive their organizations forward. Tech leaders must also ensure C-level leaders are fully engaged with the organization's technological initiatives, so that there is alignment within the company's highest levels.

As they incorporate this technology-oriented perspective, tech officers are developing a credible voice within the boardroom and C-suite. Eventually, it may benefit companies to consider tech officers who can combine tech awareness with strategy — i.e., they can see the forest AND the trees — as possible CEOs.

IMPERFECT TECHNOLOGY MEANS PEOPLE WILL ALWAYS BE NECESSARY

Technological advancements are impressive, but hardly flawless. Andrew Ng — the founding lead of the Google Brain artificial intelligence project, former director of the Stanford Artificial Intelligence Laboratory and former lead of Baidu's AI team — notes that AI tasks are still fairly limited. Ng wrote in *Harvard Business Review*[1] that, despite AI's breadth of impact, its typical tasks are largely confined to situations where some input data is used to generate a quick, simple response. Ng highlighted that supervised learning, the type of software that enables this input-to-output generation, has an Achilles heel: it requires a huge amount of data to train it. For example, while language translation is a popular usage of AI, it requires a human to input the data and create the program. Translation programs also have a difficult time capturing the critical nuances of language. Even the previously lionized term "big data" is losing its luster, as examples of its shortcomings have proliferated and analytical analysis has become standard.

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CHRISTOPHER MIMS
TECHNOLOGY COLUMNIST
WALL STREET JOURNAL

While AI can automate many human tasks, these tasks often fit into a larger context and business process. Consequently, tech leaders still need to figure out the linkages to the rest of the business, understand what AI can and cannot do, and identify where value is created in order to formulate a winning business strategy.

"The best AI-powered systems require humans to play an active role in their creation, tending and operation," *Wall Street Journal* technology columnist Christopher Mims recently wrote.[2] "Far from displacing workers, this combination is spawning new non-engineer jobs every day, and the preponderance of evidence suggests the boom will continue for the foreseeable future."

1 Andrew Ng. "What Artificial Intelligence Can and Can't Do Right Now." *Harvard Business Review*, November 9, 2016.

2 Christopher Mims. "Without Humans, Artificial Intelligence Is Still Pretty Stupid." *Wall Street Journal*, November 12, 2017.

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Indeed, as noted in The Economist,[3] "Automating a particular task, so that it can be done more quickly or cheaply, increases the demand for human workers to do the other tasks around it that have not been automated." The article cites the example of ATMs, which were initially predicted to end the position of bank teller. Instead, the reduced costs of banking allowed banks to open more branches, thereby moving tellers "away from routine tasks and toward things like sales and customer service that machines could not do."

These views are consistent with those expressed in a recent McKinsey Global Institute report[4] on automation and its implications for employment and productivity. Based on an analysis of 2,000 distinct work activities across 800 occupations, McKinsey's research found that full automation is far from inevitable: According to their study, 60 percent of occupations have at least 30 percent of their activities that can be automatable, but few occupations can be fully automated. The underlying reason is that most occupations still involve leadership-related activities like managing people, interfacing with stakeholders and thinking creatively, all of which are not easily automatable (at least for now).

THE CULTURAL IMPLICATIONS OF TECHNOLOGICAL TRANSFORMATION

As technology advances, the cultural ramifications for companies grow increasingly significant. To stay atop new developments, well-rounded tech leaders should be conversant in cultural issues and help their companies embrace the inevitable changes and align around the benefits of the transformation. Some companies are more advanced digitally than others, so the larger the transformation the greater the effect may be on the culture. In these situations, a diagnostic assessment of a company culture can be crucial in helping the organizational culture align with the strategic vision.

Now, tech leaders must deftly navigate the perpetually shifting terrain of the technological world and evaluate how it affects their organizations. Companies must adapt quickly within this new paradigm, so cultures that are more cautious need to become more experiment-driven and failure-tolerant. Next-generation tech leaders must help their organizations adapt on the fly within a more innovative environment.

3 *The Economist*. "Automation and Anxiety: Will Smarter Machines Cause Mass Unemployment?" June 25, 2016.

4 McKinsey Global Institute. "What the future of Work Will Mean for Jobs, Skills and Wages." November 2017.

To help direct this shift, tech leaders will need to augment — or develop — new, "softer" skills, such as critical thinking and listening, as well as a highly attuned sense of culture. Tech leaders likely have the requisite technological knowledge, but succeeding in this area requires a more holistic sense of leadership.

Within the workforce, it's true that automation does indeed displace workers. However, the result is that new jobs are often created in different areas. Leaders must be aware that workers are bound to worry that their jobs will disappear as technology advances. It's crucial for company morale that workers know they are appreciated and kept apprised of how technology will affect them.

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Conclusion

In the end, it's clear that technological advances have dramatically changed — and will continue to change — our world. But it's a never-ending balancing act as companies incorporate these changes, and smart leadership will always be necessary to direct technology in our favor — not the other way around.

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