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'The Cloud Revolution' and 'The Work of the Future' Review: Anticipating a Boom

Could it be that advances in technology, already embedded in our daily lives, will create broad, exponential economic growth?

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Marc Levinson
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Years before a purported shortage of truck drivers brought us empty supermarket shelves, a purported surplus of truck drivers was making headlines. In 2016, the Council of Economic Advisers warned that nearly all jobs driving heavy trucks were threatened by self-driving vehicles. A year later, Goldman Sachs foresaw 300,000 jobs vanishing annually when autonomous vehicles take over. The Guardian reported that "self-driving trucks are set to lay waste to one of the country's most beloved jobs—and the fallout could be huge." Perhaps such carnage will yet devastate the truck-driving profession. To date, though, the number of truckers displaced by autonomous vehicles is zero.

Forecasting is a risky business, so when Mark Mills asserts that technology has

brought us to "the beginning of the next great cycle" of productive innovation, some skepticism may be in order. But even if you don't fully buy into Mr. Mills's claim that new technologies will create the Roaring 2020s, "The Cloud Revolution" provides an entertaining tour of a wide range of developments that have the potential to reshape our world sooner than we might expect.

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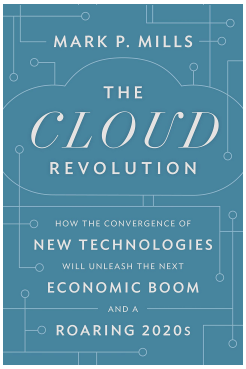
The Cloud Revolution: How the Convergence of New Technologies Will Unleash the Next Economic Boom and A Roaring 2020s

By Mark P. Mills
Encounter



Mr. Mills's starting point is the proliferation of devices connected to a global computing network widely referred to as "the cloud," which fundamentally changes how people share and process information. The cloud's infrastructure, he writes, "is as different from the Internet as a smartphone is different from a 1960s telephone." Effectively, every smartphone is really a handheld supercomputer capable of monitoring a satellite in outer space, determining whether an elevator requires maintenance, and buying a few bitcoins while waiting for dinner to be delivered. The cloud is already present in the radio tags embedded in everything from workout clothes to fuel gauges and will soon, Mr. Mills contends, alter fields as disparate as sports and pharmaceutical research.

Most of the technologies Mr. Mills describes are not exactly new, and that's precisely his point. Historically, he emphasizes, it has often taken 20 years for an idea to become a commercial product and an additional 20 before the product's growth takes off. Mr. Mills refers to the "rule of threes," the combination of three distinct technological developments that are frequently needed to make an innovation commercially viable—think of microprocessors, lithium batteries and tiny screens, each created separately and all essential to the smartphone. The cloud has grown out of developments in materials, machines and information management that got their start in the 1990s or early 2000s. It is only now, he says, that they are poised to power exponential economic growth.

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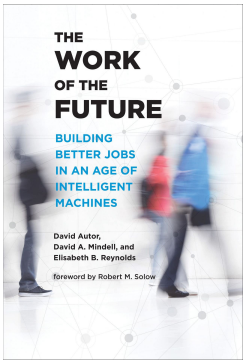
The Work of the Future: Building Better Jobs in an Age of Intelligent Machines

By David Autor, David A. Mindell and Elisabeth B. Reynolds
MIT



Mr. Mills, an energy and tech expert at the Manhattan Institute, would admit to being an optimist: "Instead of our future being one of perennial slow growth and technological stagnation, it will be just the opposite." A physicist by training, he acknowledges that the emerging cloud-based world is by no means weightless: The computers "learning" to support a single artificial-intelligence application, he notes, can use in a day more energy than 10,000 cars. Innovation, he says, will address this problem as new materials lead to more energy-efficient semiconductors and a better-managed electrical grid. Perhaps, but it seems unlikely that data centers and bitcoin miners will cease guzzling energy any time soon.

Mr. Mills doesn't worry too much about how workers will fare amid the boom he foresees. "The 'rising tide' does 'lift all boats,' " he insists. But of course there are many examples of innovations leaving groups of workers and entire communities behind, even as they boost productivity economy-wide.

Minimizing such ill effects is the subject of "The Work of the Future," a timely book arising from a project at MIT. The authors—David Autor, David A. Mindell and Elisabeth B. Reynolds, all MIT scholars (though Ms. Reynolds joined the Biden administration last year)—expect technological advances to affect the economy far more gradually than Mr. Mills anticipates. Their project's researches found, for instance, that many U.S. manufacturers still reject robots, which are seen to be inflexible and hard to integrate into a production process. Similarly, artificial intelligence has replaced human labor only for certain specialized tasks: It helps answer the questions that customers ask through an insurance company's website, but it hasn't supplanted insurance agents. AI and robotic applications are coming, but "they are not as close as some would fear."

The authors aren't technophobes. They state up front that there is no evidence to suggest that "technological advances are driving us toward a jobless future."

Their criticism is aimed at public policies that fail to protect workers from dislocation even in a flourishing economy. "Rising labor productivity," they write, "has not translated into broad increases in incomes because labor market institutions and policies have fallen into disrepair." Income inequality and wage stagnation, they say, are not inevitable effects of globalization or the shift to a digital economy. But a new generation of advanced technologies will not correct such problems; nor will everyone's favorite nostrum—better training. The key, for the authors, is an update to our unemployment-insurance, minimum-wage and collective-bargaining laws—an update for the digital age.

It may be that, as "The Work of the Future" contends, the productive dynamism of the economy needs to be balanced by a system that better "bolsters the skills and compensation of all workers." Mr. Mills, for his part, wants to celebrate the forces that create such dynamism in the first place.

Mr. Levinson's books include "The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger."

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