FEATURE

How AI and Automation Will Transform the Future of Work

Some experts predict a dystopia with high unemployment and increased inequality, while others foresee a utopia where work plays a lesser role in our lives.

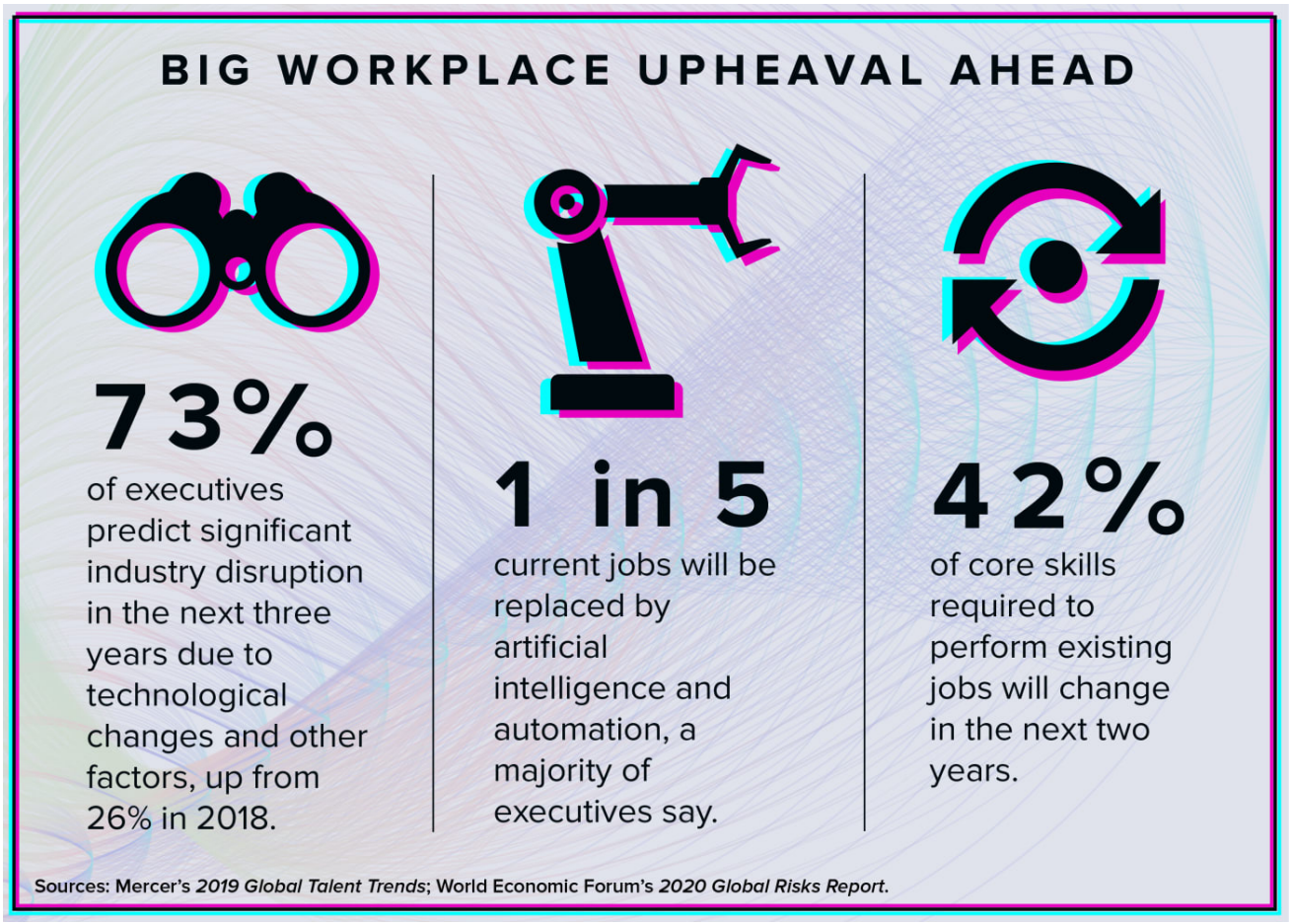
Tam Harbert

In a 2019 documentary - (https://www.youtube.com/watch?v=_iaKHeCKcq4) on the future of work by Vice News, a graying truck driver talks about how proud he is of his work. "I know I'm providing the world with whatever I've got in my freight," he says. "I deliver your clothes, your food. It's a good feeling as a driver, as a human being."

That feeling, and his job, could go away soon. After the trucker rides along on a demonstration of a self-driving semi, the interviewer asks him what he would do if he didn't drive a truck. "I can't honestly answer because I really don't know what I would do," he says. "I'd be scared."

He's not the only one.

The phrase "future of work" is inextricably linked with fear over how artificial intelligence and automation will replace large swaths of workers. But the implications of such changes aren't clear.



Experts talk about two possible scenarios, as summed up by Darrell West, vice president and director of governance studies and founding director of the Center for Technology Innovation at the Brookings Institution in Washington, D.C. One would be a dystopia, with high unemployment and increased income inequality. The other would be a utopia: a more inclusive society in which people won't have to work as much, at least not for money. They would have more time to pursue their interests or to do unpaid yet necessary work such as parenting or community service.

Which way will we go? The determining factors will be how the government, business and the education system respond, West says.

First, the Bad—and the Worse—News

The numbers are striking. Over the past 50-plus years, automation has enabled companies to do more work with fewer people. West illustrates this by comparing some of the largest companies of 1962, such as AT&T, to the largest companies of 2017. Apple, for example, was 40 times as valuable (in terms of market capitalization) as AT&T was in 1962, but its workforce was just one-fifth the size.

Some experts believe that the next wave of automation will play out as previous waves did. They point out that the Industrial Revolution made lots of jobs obsolete but replaced them several times over, creating more new jobs than it destroyed. But this time around, there are at least three important differences:

- The transition is happening much faster.
- Machines are replacing human judgment and thought, as opposed to repetitive tasks or manual labor.
- The COVID-19 pandemic instantly highlighted an under-appreciated benefit of automation: It lessens the need for human contact and thus slows down transmission of the virus.

Imagine, for example, having robots or cobots (robots that interact directly and in close proximity with humans) help process COVID-19-infected patients arriving at an emergency room, says Michael J. Lotito, a shareholder at employment law firm Littler and co-chair of the firm's Workplace Policy Institute. Or fully automating the delivery of groceries so that online orders are collected and packed by robots, then delivered by driverless cars, virtually untouched by human hands.

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Artificial intelligence (AI) and automation are progressing three times faster than Moore's Law, according to a report published by Stanford University in December 2019. First articulated by Intel co-founder Gordon Moore, the rule of Silicon Valley is that processor speed doubles every 18 months. Moore's Law explains why the cost of computing has fallen so dramatically. At first, AI developed at Moore's Law pace. But in 2012, AI computational power started doubling every 3.4 months.

"That's super scary," says Rob Irizarry, a tech entrepreneur and investor based in Bozeman, Mont., who currently works as Oracle's director of customer experience optimization and teaches at Montana State University. It means more jobs could be automated much sooner than we thought. And that was *before* the pandemic.

'A Sputnik Moment'

Even more alarming is the lack of strategy for how to handle the tidal wave of technology.

The nonprofit Emma Coalition educates employers and policymakers about the issues surrounding what the coalition calls TIDE—technology-induced displacement of employees. The coalition was formed by Littler, government relations firm Prime Policy Group and the National Restaurant Association.

Restaurant workers are among the largest employment segments threatened by automation. In many fast-food chains, kiosks have replaced cashiers. Customers order by touchscreen or mobile phone. The only humans are the ones cooking the food, and they will likely be replaced by robots soon. When they are, some 5.4 million food service jobs are expected to disappear. Millions more jobs in office support, retail sales and transportation will likely follow. According to the McKinsey Global Institute report *The Future of Work in America*, nearly 40 percent of U.S. jobs are in occupational categories that could shrink between now and 2030.

42%

of U.S. workers define themselves by the jobs they do and/or the companies they work for.

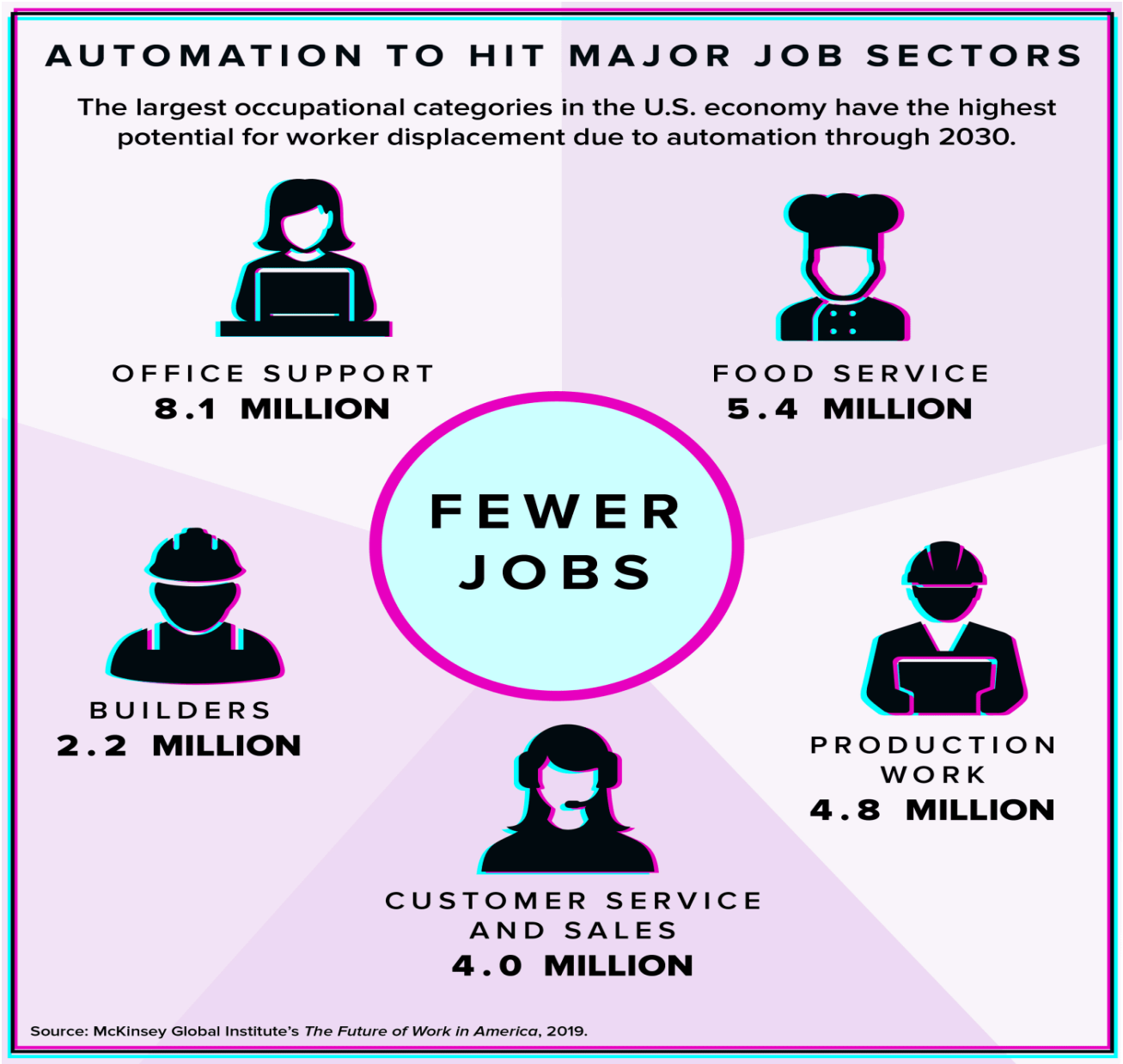
Source: Jobvite.

Lotito, who co-founded the Emma Coalition, says he's been frustrated by a lack of federal leadership on how to prepare the workforce. The pandemic might have called more attention to the need for workforce retraining and upskilling, but so far it hasn't, he says. Despite the massive amounts of stimulus money the federal government is doling out to try to minimize the economic fallout, no money is being designated for worker training or education. U.S. citizens received a one-time payment of $1,200, plus $600 in extra unemployment, he notes, "but nobody is saying, 'Here's $600 in a lifelong learning account.'"

Lotito says the U.S. needs a leader who will sound the alarm and inspire the country to solve the problem. "This is a Sputnik moment," he says, referring to the Russian satellite launch of the 1950s that aroused fear of technical inferiority in the U.S. and prompted President John F. Kennedy to enter the space race.

Indeed, even before the mass unemployment caused by the pandemic, experts feared that America's lack of preparedness could lead to geopolitical instability and threaten national security. A 2018 Council on Foreign Relations report warned massive job loss could cause chaos and turmoil in the U.S. "In such a situation, populism would be sure to grow, as would opposition to both immigration and trade despite their record of contributing to the country's prosperity," the report stated.

While some call for massive retraining and reskilling, others doubt that's the answer, especially considering how quickly AI is advancing.



Former Democratic presidential candidate Andrew Yang, who notably promoted a universal basic income of $1,000 a month for all U.S. adults to cushion the blow of technology's disruption, says a focus on retraining masks the real, and bigger, problem. With automation happening so quickly, society won't be able to reliably predict what skills will be needed even a few years down the road. No sooner will we have trained people how to code, for example, than AI will be able to perform basic coding. "This is a race we will not win," Yang told Vice News.

And the problem goes beyond money. In a culture in which we define ourselves by what we do for a living, not having a job can be devastating physically and psychologically, not just financially. "It's not simply a question of how [people] are going to support themselves," says Richard Haass, president of the Council on Foreign Relations, in the Vice documentary. "What are they going to *do*?"

The political polarization and economic anxieties of recent years are at least partly a reflection of the fears of automation and job loss. And these signs of the times might prove to have been only the early tremors of a societal earthquake.

A New Renaissance?

Not everyone is predicting dark days ahead, however. University of Iowa professor Benjamin Hunnicutt has studied leisure, technology and labor history for decades. He's among a group of experts and academics called "post-workists." They believe that the economy is evolving into a new system in which money—and therefore traditional paid jobs—will be less important.

Hunnicutt's new book, *The Age of Experiences: Harnessing Happiness to Build a New Economy* (Temple University Press, 2020), describes an economy that's shifting from one based on money to one based on time. While people will work fewer hours because of automation, they won't need to work as much because they won't need as much money. "The coin needed to buy things in this experience economy will increasingly be time," he says. "We'll be less and less dependent on money."

Hunnicutt maintains that people, especially the younger generations, no longer want to make life all about their jobs. They also aren't materialistic, he says. "They prefer experience rather than buying stuff. They don't want to spend their lives paying off a mortgage."

Meanwhile, he says, an effective way to deal with a potential decimation of jobs will be to repackage existing work into shorter shifts or possibly even more part-time jobs. In the wave of unemployment following the Great Depression, businesses did this effectively, Hunnicutt says. Companies like cereal maker Kellogg Co. in Battle Creek, Mich., introduced six-hour days and 30-hour workweeks. "They responded to this national crisis by shortening working hours," he says. (At the time, economist John Maynard Keynes forecast that technological progress could lead to 15-hour workweeks and abundant leisure time by 2030.)

Today's employers could use the same remedy. Metro Plastics Technologies, a small plastics manufacturer in Noblesville, Ind., switched to six-hour shifts in the early 1990s. Company founder and CEO Lindsey Hahn says his purpose for doing so was to attract hard-to-find employees, not to make more jobs available during a mass wave of unemployment due to automation. Nevertheless, Hunnicutt calls it "a wonderful management initiative" and "a way of negotiating between money and time." Hahn has been able to find additional, reliable workers who were attracted by the flexibility—like parents, for example, who can work from 6 a.m. to noon, then be home when their kids get out of school.

Many people will also want to use their increased leisure time to volunteer for community service or develop artistic or musical talents—activities that may not be paid but that nevertheless produce value. In that sense, "our work is at the same time our leisure," Hunnicutt says. "Work and leisure merge."

Perhaps the right policies and benefits could enable a new wave of entrepreneurship. "Amid all this chaos, there are opportunities," notes tech entrepreneur Irizarry. "It could unleash the greatest human renaissance since the Middle Ages."

West, of the Brookings Institution, calls for a new social contract, noting that the crisis of the Great Depression led to the creation of safety nets such as Social Security and unemployment insurance that we have come to rely on. Government and employers today could adapt by separating traditional benefits (such as health insurance) from employment, creating citizen learning accounts that people could tap for education and training, expanding the earned income credit, and devising some form of universal basic income.

Lotito says he remains optimistic, despite his concern about mass worker displacement in the short term. "At the end of the day, we're going to create many new jobs," he says.

Maybe. But it hasn't happened yet. It's easier to see how automation eliminates jobs, both now and in the future. What no one doubts is that we were already headed for a huge disruption in the labor force, and COVID-19 has jump-started the process. So, like that truck driver, we're scared and we don't really know what we'll do.

Benefits of Universal Basic Income—in Finland

Number of participants in Finnish experiment: 2,000 unemployed

Monthly basic income: 560 euros (about $635)

Universal basic income (UBI) could help ease the psychological and emotional effects of job loss and encourage people to pursue entrepreneurial ambitions, based on preliminary results from an experiment by the Finnish government.

The goal of the experiment, which ran for two years—from Jan. 1, 2017, to Dec. 31, 2018—was to see whether a UBI would encourage individuals without jobs to accept low-paid or temp work without fear of losing benefits, which typically decrease as beneficiaries earn income.

Recipients of a basic income reported being healthier, happier, less stressed and less depressed than a control group, according to a 2019 report on the first year of the program from Kela, the Social Insurance Institution of Finland. (But maybe the Finns don't really need a UBI to be happy. The United Nations 2019 World Happiness Report rated Finland the happiest country in the world. The United States came in at No. 19.) They had fewer health problems and were more confident in their future and in their ability to influence societal issues. The test group also registered higher levels of trust in other people, in legal institutions and even in politicians.

"The proponents of basic income have emphasized its emancipatory nature: the basic income gives people the possibility to be creative, is empowering and diminishes financial insecurity," according to the Kela report.

Encouraging Entrepreneurship

Anecdotal evidence suggests that the basic income encouraged entrepreneurial activity. Sini Marttinen, a former IT consultant, told *The New York Times* that the income gave her confidence to start a restaurant with two friends. "You have the security of €560 per month," she said. "It gave me the security to start my own business."

Tuomas Muraja, a 45-year-old journalist and author, says the basic income freed him up to concentrate on writing. He published two books during the two-year trial period, which he could not have done before because he could earn only 300 euros a month before losing benefits. The basic income made him more creative and productive, he told Reuters. "If you feel free, you feel safer and then you can do whatever you want." —T.H.

Tam Harbert is a freelance technology and business reporter based in the Washington, D.C., area.

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