

US economy faces impending skills gap

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Economists, demographers and political leaders are increasingly concerned that the next generation of workers won't be ready to fill millions of new jobs across the country.

The combination of a generational sea change in the workforce and a technological revolution in the economy is conspiring to create a skills gap that could leave jobs unfilled, experts said.

And that could stifle growth while exacerbating an already wide gap in the new economy between thriving and struggling communities.

"It's a national problem. We don't have the skilled workforce that we need for the future," said David Long, the Republican leader of the Indiana state Senate. "We have to make sure we have the bodies to fill these jobs."

About 108 million workers hold jobs that require moderate or high digital knowledge, according to a Brookings Institution report published in December, and jobs are increasingly likely to require higher levels of technical knowledge.

“There’s this broad need for more digital experience, whether it be a full-time high-end IT worker or to simply carry on in the rest of the economy,” said Mark Muro, director of policy at the Brookings Metropolitan Policy Program and a co-author of the 2017 report.

The Bureau of Labor Statistics estimates the economy will need as many as 100,000 new information technology workers per year over the next decade. Right now, only about 60,000 of these workers enter the workforce each year.

Retiring baby boomers are exacerbating the problem.

The Pew Research Center estimates that as many as 10,000 Boomers reach retirement age every day, leaving behind jobs that require more technical knowledge.

Retirements and new growth mean 3.5 million new manufacturing jobs will need to be filled by 2025, said Carolyn Lee, executive director of The Manufacturing Institute at the National Association of Manufacturers. If present trends hold, as many as 2 million of those jobs are expected to go unfilled.

“We are definitely not producing enough workers to fill those jobs,” Lee said.

Pfizer, the pharmaceutical manufacturer, highlights both the demands of the new economy and the shortfalls from the labor force.

At Pfizer’s 17 manufacturing sites across the country, a low-level technician once followed a set of scripted steps to mix individual batches of medicine. Those batches would be tested in a lab to ensure each dose would meet the company’s standards.

Today, a technician operates computers that mix and analyze new batches of medicine instantly. The technician who once just needed to follow a recipe now needs to know a little bit about chemistry, biology, data analysis and lab work.

“The technician role has become much more high tech, in that the operators are monitoring the online data and they are manipulating the control systems and making online decisions based on real-time data,” said Kevin Nepveux, Pfizer’s vice president of global manufacturing services. “That requires a different skill set for the operators.”

Companies determining where to base certain operations are looking at what schools are offering.

As part of a 2013 deal to keep tens of thousands of jobs in the Puget Sound area, Boeing secured a commitment from the state of Washington to bolster science, technology, engineering and mathematics curriculum in public schools.

Amazon, searching for a location for its mammoth new HQ2 project, has made clear a well-educated workforce will be a major factor in their decision.

“The employer community is very aware of the need to start talking to late elementary school kids. Now that’s a long time to wait for your workforce,” the Manufacturing Institute’s Lee said.

If Pfizer, Boeing, Amazon and others in search of a high-tech workforce can’t find qualified employees, experts say, they would be forced to look overseas for new high-skilled workers.

Their other options are far less appealing: sacrifice growth or hasten the adoption of automation that would cost jobs in the longer term.

“A workforce lag very much can become a drag on growth. And it can accelerate automation, and the economy, meanwhile, can leave a bunch of people behind,” Muro said. “If you can’t find decently priced relevant workers, then you might be more likely to invest in automation. And some people think that’s what’s happening in manufacturing right now.”

Policymakers are increasingly worried that automation will strike across industry lines, far beyond manufacturing. Autonomous vehicles are the most visible example of a clear threat to existing industries, but no profession is entirely immune: A McKinsey & Co. forecast issued in November estimated as many as 800 million people worldwide could lose their jobs to automation in the next dozen years.

“We have over 700,000 job openings that we think will be available in Washington state in the near term, and most of those will go to people out of the state and even out of the country. So we need to reconfigure,” Seattle Mayor Jenny Durkan (D) said in a recent interview. “If you look at where the economy is moving, that’s going to become even more exacerbated. When automation comes on full bore, just autonomous vehicles will have about 20 million Americans out of work, overnight. And there’s no plan on where you then move them in the workforce.”

The threat of automation is a fundamental shift that most experts see as inevitable. The U.S. Conference of Mayors last month established a new task force to consider how cities should respond, and workforce development is a constant topic of nervous conversation among governors and state legislators.

“Unlike some of the other economic shocks, this is one that we see coming,” said Pete Buttigieg, the Democratic mayor of South Bend, Ind., who heads the group’s automation task force. “It’s going to hit every industry.”

Some cities and states are moving to bolster the information technology education they offer to even their youngest students. Philadelphia is launching a computer science program, CS for Philly, to teach technical skills throughout its public school system. North Carolina high schools now offer a certification in the Microsoft Office suite of programs.

And many cities that have thrived in the technological revolution are already preparing their students to take over the next generation of jobs — which, at the same time, exacerbates the skills gap between successful urban areas and rural parts of the country that have been left behind.

“The presence of highly skilled digital workers also attracts other mobile, highly skilled digital workers. So we get this feedback loop in which the digital advantage of a Boston, a Seattle, a San Francisco or an Austin gets amplified. The digital rich get richer, and other places are left behind,” Muro said. “That is very troubling for huge swaths of the country.”

For generations, low-skilled manufacturing jobs were sufficient to sustain middle class workers in America’s industrial heartland. Today, that’s no longer the case — and not just for manufacturing but for jobs across industries.

“Fifty years from now, half the jobs that we know of today will be gone,” Indiana’s Long said. “That’s the one that keeps you up at night.”