

Technology Access For an Equitable Future of Work

Technology helps individuals and local economies adapt to workforce displacement. Equal access to broadband is needed to train workers for the knowledge economy.

By Cat Blake / *Next Century Cities*

Automation isn't a new phenomenon; people have invented technology to make lives easier for centuries. In November 1814, the Times of London became the first newspaper to use steam-powered printing presses to print 1,100 sheets of newsprint per hour. This technology replaced scribes, accelerated the printing revolution and transformed the nature of communications.

Despite the cycle of innovation and automation, new technologies often cause anxiety about exactly how – and by whom – their effects will be felt. This worry is not unfounded. A recent report from the Brookings Institution, “Automation and Artificial Intelligence: How Machines Are Affecting People and Places,” shows that just as economic growth has been distributed unevenly in the United States, so the effects of automation will be.

Not all jobs are equally threatened by automation. Industries in which tasks are routine face the highest susceptibility to automation: production, food service, transportation, administration, maintenance and construction. This means that smaller, more rural, less educated communities are often more at risk than cities. Brookings found that roughly three-quarters of counties in metro areas have lower average automation exposure than rural counties. Among metro areas, cities with higher average educational attainment face lower automation exposure.

As for individuals, Brookings found that men, youth, those with lower educational attainment and racial minorities are most likely to be affected by automation. (Consider, for example, that jobs traditionally held by women in the United States are more likely to rely on what we think of as “soft skills” that are harder for technology to replace.)

With a few exceptions, such as age and gender, the populations identified as most likely to be affected by workforce displacement due to automation overlap significantly with populations that are least likely to have robust technology access in the United States. Pew Research Center data shows that there are significant divides along lines of community geography, educational attainment, income and race when it comes to home broadband use and smartphone ownership. For example, Pew found that 67 percent of urban households used home broadband in 2018, but only 58 percent of rural households used home broadband. And though 85 percent of college graduates used home broadband, only 24 percent of those without a high school degree said the same.

HELPING WORKERS UPGRADE SKILLS

The overlap in populations more likely to be affected by automation with those that have notably low access to or adoption of technology is important because technology is a critical tool in helping individuals and local economies adapt to workforce displacement.



Students learn cybersecurity skills at an ethical hacking competition in Westminster, Maryland.

At the individual level, technology helps workers upskill and reskill. Access to fast, affordable broadband provides the opportunity for workers to gain new and diverse skills on their own time, schedule and budget. In Westminster, Maryland, the Mid-Atlantic Gigabit Innovation Collaboratory leveraged the city's robust broadband access to create an ethical hacking competition that teaches cybersecurity skills to students. Wilson Community College in Wilson, North Carolina, recently started offering a fiber optics training course at a low cost to offer entrance to a new technical field through education and apprenticeships.

The Raleigh (North Carolina) Connected initiative teaches technology skills to promote workforce training and attract new technology companies to the area. In Austin, Texas, the network of Austin Free-Net computer labs provide free digital literacy and information technology workforce training programs.

At the community level, robust broadband access can help diversify local economies. Lafayette, Louisiana, has historically depended on the gas and oil industries, but the city's municipal fiber network helps attract new technology companies and a varied set of opportunities for residents. In Gaylord, Minnesota, the cooperative network RS Fiber played a direct role in bringing a new medical school to town, creating hundreds of new jobs.

Although these communities have made technology access a priority, a lack of competitive options and high costs mean that access is not equitably attainable for everyone in the United States. The repercussions are that individuals and communities that have access to technology are much better positioned to respond and adapt to a changing workforce than those without access.

Automation will inevitably affect jobs, and it's imperative to make sure the harms aren't felt asymmetrically.

Workforce displacement is already poised to affect vulnerable populations most significantly, and disproportionate access to the tools needed to adapt will only deepen this divide.

The United States can take steps to prepare for an equitable future of work at the local and federal level by:

- Supporting digital skills training so individuals can fully leverage technology as a tool.
- Making broadband access a national infrastructure priority, just like water and transportation.
- Including broadband and technology access as a pillar in conversations about economic development, education and workforce training. ❖

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