

250 Years of Disruption: What 6 Inventions Say About Work's Future

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Two and a half centuries ago, when the American founders declared independence, the nation they envisioned didn't just offer political freedom. The independence they anticipated touched every part of an individual's life, including work, even as extending this grand vision to everyone remained a work in progress.

While work was always an important part of the experiment, American ingenuity has ensured that occupations have never remained stagnant. New inventions and advancements continually change the way work gets done, the types of jobs available, and the locations where people work—from farms to cities and back home again. Just as America's founders reinvented the idea of government, its people have continually reinvented their ways of life and work.

Today, many workers are concerned about the impact of generative AI (artificial intelligence) on their jobs and the future workplace. The 2025 SHRM report ***Automation, Generative AI, and Job Displacement Risk in U.S. Employment*** - (<https://www.shrm.org/topics-tools/research/automation-generative-ai-and-job-displacement-risk-in-u-s-employment>) found 15.1% of U.S. employment (23.2 million jobs) is at least 50% automated, and 7.8% of U.S. employment (12 million jobs) is at least 50% done using generative AI.

As AI transforms the workforce, it's important to remember that throughout American history, new technologies have often disrupted industries. While new tools have reinvented some jobs, they have also “reorganized the possibilities of life, changing people's ideas of what was possible,” said Tobias Higbie, Ph.D., *professor of history and labor studies at UCLA* and the director of the UCLA Institute for Research on Labor and Employment.

Here's a look at six of the many technologies that have changed work in America over the past 250 years, and how Americans have adapted and adjusted their occupations and their lives in response.

Labor Disruption: Cotton Gin

Before Eli Whitney invented the cotton gin in 1793, removing the sticky seeds from cotton fibers was a slow, arduous task. One cotton gin could clean 50 pounds of cotton in a day, replacing several hundred hours of manual labor.

How it changed work: Whitney hoped his invention would reduce the use of enslaved labor on cotton plantations, but the increased efficiency made cotton production significantly more profitable, which expanded the power and influence of plantation owners and their reliance on enslaved labor. The number of enslaved people in the United States increased by 550% from 1790 to 1860, according to the [Eli Whitney Museum](https://www.eliwhitney.org/cotton-gin-and-its-legacies) - (<https://www.eliwhitney.org/cotton-gin-and-its-legacies>).

"The cotton gin invention was supposed to save labor time, but it actually drove enslaved labor to new, horrible human tolls and elevated slavery so much that so many families were torn apart," said Rosemary Feurer, Ph.D., labor historian and professor of history at Northern Illinois University.

The work of planting, harvesting and ginning cotton remained grueling, contributing to the growth of slavery and leading to the Civil War. But the cotton gin eventually led the way to the development of other agricultural automations, and today, much of the physical work of agriculture can be managed by machines.

Labor Disruption: Railroads

In 1804, the world's first [steam-powered locomotive](https://www.aar.org/chronology-of-americas-freight-railroads/) - (<https://www.aar.org/chronology-of-americas-freight-railroads/>) launched the era of rail transport. The first transcontinental railroad was completed in 1869, transforming coast-to-coast commerce.

How it changed work: "Railroads compressed time and space and had huge impacts on commodity markets and labor markets," Higbie said. "They created the first national working class by stretching across the whole continent."

People were able to travel for work more easily, providing new opportunities beyond the farm and home community. While the railroads expanded national markets, standardized labor and wages, and shaped the broader industrial economy, the results weren't always positive. Railroad workers protested dangerous conditions and unfair treatment, he said.

Labor Disruption: Assembly Lines

As early as the 1860s, meatpacking plants in Chicago and Cincinnati were using "disassembly lines," Higbie said. Overhead conveyor belts moved animal carcasses from one station to the next, where each butcher specialized in removing a specific cut of meat.

After visiting the Chicago meatpacking plants and studying the disassembly line concept, Henry Ford reverse-engineered it, implementing the first moving assembly line at his automotive plant in Detroit in 1913.

How it changed work: The assembly line broke down labor that would have been done by one person into small, individual tasks to be spread across multiple workers. "It allowed a manager to control the speed of production, unlocking previously unknown productivity levels," Higbie said.

The assembly line enabled mass production and gave rise to modern communities where people had greater access to consumer goods and more affordable homes.

But the shift to mass production led to some monotonous, physically exhausting, often dangerous work environments with the pace dictated by machines. Widespread dissatisfaction drove workers to organize and demand safer workplaces and reasonable work hours and workloads, Feurer said.

Labor Disruption: Shipping Containers

In 1956, [Malcolm McLean](https://maritime-executive.com/editorials/a-brief-history-of-the-shipping-container) - (<https://maritime-executive.com/editorials/a-brief-history-of-the-shipping-container>) created the standard shipping container to simplify the loading and unloading of goods on ships, trucks and trains. The standard containers drastically reduced the time and costs to load and unload goods.

How it changed work: Standardized shipping containers created the modern logistics industry, Higbie said. They disrupted the work of longshoremen and dockworkers, resulting in high union participation in that industry.

Increased productivity in moving goods paved the way for new jobs and industries, including e-commerce and big-box retail stores.

Labor Disruption: Personal Computers

Personal computers were introduced in the 1970s, but when IBM rolled out its [IBM Personal Computer \(PC\)](https://www.computerhistory.org/revolution/personal-computers/17/301) - (<https://www.computerhistory.org/revolution/personal-computers/17/301>) in 1981, the PC suddenly became viewed as a serious business tool.

How it changed work: The personal computer dramatically changed office work, shifting it from paper-heavy processes to decentralized digital processes. The PC boosted the productivity of individual office workers, eliminating the need for large secretarial pools and making many types of workers unnecessary, such as typists and file clerks.

Over time, many clerical workers developed digital skills and shifted into more advanced roles, managing databases, organizing digital archives, and managing email correspondence and schedules.

Repeating Impacts

Similarities abound across the various labor disruptions throughout American history. Each one has resulted in short-term dislocation, job redesign, and longer-term productivity gains. Over time, new technologies have not just rattled the status quo, they've resulted in the emergence of new roles, requiring ongoing training and the development of new skills. SHRM research finds AI is **currently more than five times** - (<https://www.shrm.org/topics-tools/research/state-of-ai-hr-2026>) as likely to transform the duties of an existing job than to displace one. It's also more than three times as likely to create a new job as get rid of an old one.

Higbie shared a story of a family member who, during the 1960s, trained to become a typesetter with plans to work for a newspaper. By the 1970s, major newspapers were replacing their traditional hot-metal typesetting machines with digital systems, eliminating the need for typesetters. Around the same time, photocopying machines were becoming essential office equipment — so the former typesetter trained to become a copy machine repairman. If he were still working today, the same professional would now need to learn more advanced skills including digital networking, as most copiers are connected to office networks and handle digital scanning and cloud routing.

"Industries change, but people are very adaptive and resourceful," Higbie said. "It's important for people leaders to be aware of the humanity of their workers and understand and value the resources that allow people to be adaptive, such as families, networks, and communities. Those are the things that help people live through the change and the difficulty."

Moving Forward

The current shift toward AI may share similarities with other technological labor disruptions, but "the scale is likely more enormous," Feurer said.

The speed of deployment and AI's perceived ability to perform cognitive tasks may make it seem distinct from — and scarier than — previous disruptions. However, that perspective may be just part of how new technologies are marketed, according to Higbie.

"All these technologies had very adept boosters who constructed around them a mythology of their power and impact," he said. "What we think about AI is, in part, a mystification of the technology. We've been told the machines will become smarter than humans, but in reality, they're very advanced statistical models. They're not thinking or reasoning."

For HR leaders, the lessons of past tech disruptions continue to resonate today. As in the past, workers whose jobs may be affected or replaced may need training, upskilling and reskilling to shift their skills to fill new or changing requirements. A focus on change management, transparent communication, upskilling and reskilling will be vital for HR leaders steering workers through the changes AI will bring.

The promise of American independence may reward hard work, but major waves of disruption have regularly rewritten the terms of that promise. After 250 years of technological change and disruption, American workers continue to reinvent themselves as old jobs disappear and new roles — and new opportunities — arise.

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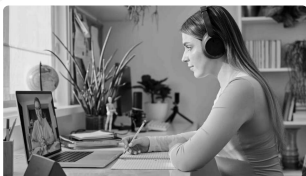
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