

The Automation Effect

Navigating a sea change in the U.S. job market

“

About 60% of occupations have at least 30% of their activities that are automatable. – McKinsey Global Institute, “A Future that Works: Automation, Employment, and Productivity,” January 2017

”

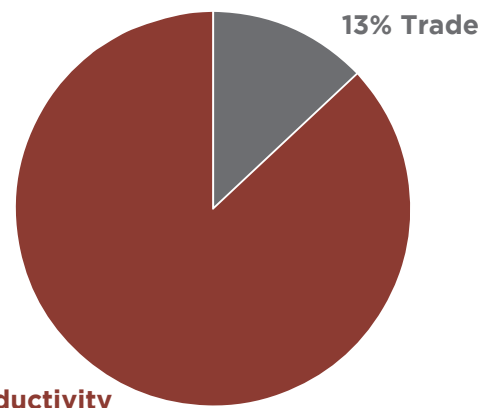
How Much? How Fast?

While there continues to be controversy about the effects of automation on the U.S. job market, the scope of credible discussion revolves around *how much* effect, and *how fast*.

Though Steve Mnuchin, Secretary of the Treasury, sees this wave of change as at least a half-century away, others report it has already arrived on our shore. *Wired Magazine*, CNN, and others have been quick to refute Mnuchin’s timeline. In his article, “Actually, Steve Mnuchin, Robots Have Already Affected the U.S. Labor Market,” in the *MIT Technology Review*, Jamie Condliffe reports that as many as **670,000 jobs were lost between 1990 and 2007** as a result of robots arriving on the scene. Manufacturing suffered the most, according to the researchers from Boston University and MIT.

What about those bad trade deals? **Trade has affected jobs, but the effect of increased productivity has been almost seven times greater.** *CNN Money* explained in January why trade gets undue attention: “It’s harder to demonize what everyone sees as technical progress, it’s easier to demonize the foreigner,” says J. Bradford Jensen, a Georgetown University Economics professor.

Source of Manufacturing Job Loss (2000-2010)



Adapted from Ball State University

Emerging markets are moving the most aggressively to incorporate robots, warned Hal Sirkin in *The World Post*. **In order to maintain global competitiveness, the U.S. must embrace this change. There is no way to stem the tide of technology.**

How Many Jobs are Automatable?

46% of All U.S. Jobs

60% of U.S. Manufacturing Jobs

60% of U.S. Transportation and Warehousing Jobs

From The Harvard Business Review, "The Countries Most (and Least) Likely to be Affected by Automation" April 12, 2017; and the McKinsey Global Institute Analysis of Bureau of Labor Statistics Data.

Bad News, Good News

Like all change, automation brings challenge, but also opportunity for those able to navigate the shifting environment. Certain segments of the job market are more affected than others:

Manufacturing and Logistics Jobs: The McKinsey report states that job activities that "are physical ones in highly structured and predictable environments," such as manufacturing and logistics jobs, are more susceptible to losses due to automation.

Low-Wage Jobs: These jobs are affected disproportionately. **For jobs paying less than \$20 per hour, 83% would be under pressure from automation** (as compared to 31% for those paying \$20-\$40 per hour), according to the 2016 White House report, "Artificial Intelligence, Automation, and the Economy."

Automation challenges industries, cities, businesses, and individuals. **Regardless, economists see automation as a boon to business on micro and macroeconomic levels.**

- Businesses can benefit from reduced labor costs and increased productivity associated with automation. Throughput, quality, and downtime improvements are opportunity areas according to the McKinsey report.
- Aging nations like the U.S. will need automation to ensure continued prosperity. Robots can help offset the shifting demographic ratio of working age to retired individuals.
- Automation could raise annual global productivity by as much as .8% to 1.4% says the McKinsey Global Institute.

Automation may lead to job growth, benefitting workers and allowing U.S. manufacturing to regain global competitiveness, concluded *The Engineer* in April, based on data from The International Federation of Robotics. Worker benefits can be realized if governments and businesses manage the transition well.

- The McKinsey report states that in most cases, workers will need to incorporate technology into their job functions—*that fewer than 5% of jobs will be entirely lost.*
- Several experts agree that when automation relieves workers of repetitive tasks, *remaining tasks tap core human capabilities:* logical thinking, problem-solving, social and emotional skills, experience and expertise, and the ability to coach and mentor others.
- Productivity gains enjoyed by business could translate into increases in average wages; living standards and leisure could both increase, according to the White House report.

Effects in Manufacturing

Manufacturing was where the U.S. first felt the effects of automation. However, as reported in "The growth of industrial robots," in the May issue of *The Economist*, robot sales have nearly quadrupled since 2005—most are in automotive and electronics industries. **Expect more of this segment of the economy to leverage automation to remain competitive.**

Case Study: Carrier's furnace plant kept U.S. jobs due to pressure from President-elect Trump. However, the money being invested in that facility will actually buy automation, "what that ultimately means is there will be fewer jobs" said CEO Greg Hayes on *CNN Money* in a December interview with Chris Isadore.

Case Study: When Marlin Steel added automation in response to overseas competition, their workforce almost doubled and they increased pay to at least \$15 per hour. In *USA Today's* "Special report: Automation puts jobs in peril," CEO and owner Drew Greenblatt said "Thank God for robots. If it wasn't for robots, these guys would be unemployed."

Effects in Logistics

"Some of the industry's most labor intensive processes are on the way to being fully or partially automated, from warehousing to last-mile delivery," said PwC in its 2016 report "Shifting patterns: The future of the logistics industry." **They see change on many fronts: from automated loading and unloading, to increased efficiency via the Physical Internet (IoT), to drone deliveries.** Job losses in this industry may be offset by its growth as consumers continue to move from retail to online purchasing.

Case Study: Robots are replacing most of the pickers' job functions—but not their jobs—at Boxed, according to the CEO Chieh Huang. The expensive automation allows the company to become more efficient, reported Sara Ashley O'Brien's in her April article in *CNN Money*.

Case Study: Amazon has been a leader in using robotics. After acquiring Kiva and turning it into Amazon Robotics, the company had cut operating costs by 20% as of June of 2016, reported Ananya Bhattacharya in *Quartz*.

Effects on Transportation

Driverless vehicles have been increasingly tested on public roads and in the public eye. **There is widespread agreement that this industry is on the brink of enormous change that will affect both employees and businesses.** "Truck driving is one of the occupations most vulnerable to automation, and one of the most common" said Anne VanderMey and Nicolas Rapp in *Fortune Tech* in April.

The White House report estimates 2.2-3.2 million existing trucking jobs are likely to be eliminated or vastly changed. About half of those affected will be truckers, and the other half will be drivers of other vehicles, such as delivery vehicles, according to the *LA Times*' Natalie Kitroeff last September. Most truck companies will introduce automated driving technologies over the next decade, said David Alexander of Navigant Research.

Case Study: Budweiser used a self-driving truck to deliver beer to a Colorado warehouse—a successful 120 mile trip, according to Binyamin Appelbaum this February in the *New York Times Magazine*.

Recommendations

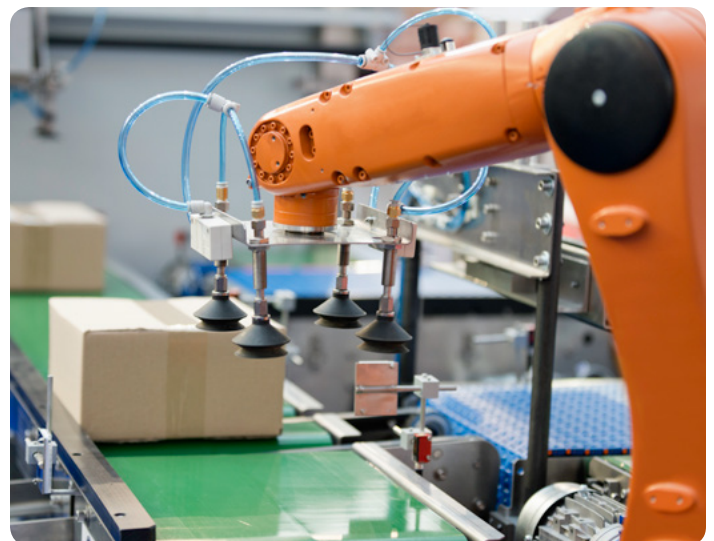
Businesses should position themselves to ride the automation wave. According to the White House report, "One of the main ways that technology increases productivity is by decreasing the number of labor hours needed to create a unit of output." Thus business benefits, but less-skilled workers often lose jobs to automation.

What can a company do to leverage the advantages of automation and deal honorably with employees?

- Embrace automation along with workforce development.
- Develop workforce skills specifically working with AI, robots, and automation: working alongside the technology or servicing it.
- Retain employees through ongoing retraining programs, coaching, and mentoring.
- Advocate for policies supporting job transitions.
- Partner with education programs to provide training in hard and soft skills.
- Provide competitive pay for workers skilled in working with automation.
- Watch for innovation that leads to new jobs—there is wide agreement that times of great change create new jobs, though not predictable ones.

As Rick Lowry said in the *National Review* this May, "If we survived the advent of cars, the telephone and electric lighting—truly revolutionary changes around the turn of the 20th century—surely we can endure whatever transformative innovations that will, once again, make our economy and workers more productive than ever." **EmployBridge will support its Associates, and its clients, to successfully harness the new economic winds of automation.**

Presented by Keith Wisner, Vice President, Workforce & Supply Chain Analytics



EmployBridge is proud to be ranked one of the largest staffing firms in the country with a portfolio that includes the leading workforce specialists for manufacturing (ResourceMFG), transportation (ProDrivers), logistics (ProLogistix), and light industrial (Select Staffing).