



Brains, brawn and big business: AI and robots reshape the workplace

Artificial intelligence, robots, chatbots, oh my! Automation technology is moving into the workplace with unstoppable momentum. As bots and robots take on more kinds of tasks, will they eliminate jobs? Or will they instead generate opportunity for workers to leverage their own strengths and manage their tireless mechanical colleagues? As Gudrun Litzenberger of the [International Federation of Robots](#) notes, “Many people are anxious today thinking about robots but in 2030, people will have a good understanding of robots and how they make life easier and improve productivity. By 2030, robots will be everywhere and commonplace.”

But 2018 is not 2030—and in today’s workforce a factory line worker, a university professor and a customer service rep are guaranteed to have one thing in common: a job that will be transformed by the presence of robots and AI in the coming decade. Will that worker be able to change along with it?

Depending on who you talk to, the advent and rapid growth of AI and robots in business will render much of the human workforce obsolete...or usher in [millions of new jobs](#) and a new era of meaningful employment, with robots taking on what one executive¹ from a leading robotics maker described as the “dull, dangerous, dirty and delicate” jobs.

What we think about when we think about robots

At HP, our view of AI and robotics in the workforce is informed by our Megatrends research: broad brush stroke trends that are painting the big picture for the next few decades. One good example is Changing Demographics, which includes statistics on aging populations—notably in the U.S. and parts of Asia. We see its impact on robotics Japan, where the need for healthcare and nursing home assistants is driving the [adoption of humanoid robots](#) to help the elderly function more independently and safely. Another Megatrend, Accelerating Innovation, sheds light on the proliferation of AI and robot capabilities and their role in digital transformation across industries and around the world.

Still, the image of robots in the workplace conjures, for many, early images from automated manufacturing—car assembly lines with long lines of robots literally doing the heavy lifting. General Motors has [deployed](#) 30,000 robots worldwide, and connected about a quarter of

¹ ABB’s Vergard Nesmith, as reported in Financial Times

them to the internet, where they continuously share information to detect and prevent malfunctions.

While auto makers were the early adopters and remain the heaviest users of automation, there is interesting work happening both on assembly lines and elsewhere as hardware and software advancements render robots capable of more sophisticated physical tasks. These enhancements, which include better sensors and AI, are resulting in robots that can see and identify objects, can learn and work more autonomously.

Both auto makers GM and [Ford](#) are deploying “co-bots,” the fastest growing area of industrial robots. Co-bots are designed to work safely alongside humans, who can teach them detailed tasks. For example, you can manipulate a robotic arm through a sequence of movements, and have it record and “learn” that sequence. This takes a fraction of the time it would take to code instructions for that level of automation. Humans can teach robots more sophisticated movements. They can in turn rely on the robot’s ability to perform repetitive tasks without muscle fatigue.

The price of robot employees seems to be dropping as quickly as their numbers increase: [examples abound](#) of small and medium-sized businesses (a 60-cow dairy in upstate New York... an injection molding company in Minneapolis) are able to realize productivity gains that more than justify the investment and help them deal with labor shortages and overhead expenses.

All brains, no brawn: chatbots everywhere

You’ve probably run into chatbots while visiting online retailers; but has a chatbot approved your time off request or helped you change your employee benefits? In [recent survey of HR leaders](#) by ServiceNow, 92 percent of respondents identified chatbots as integral to the future of employee services, answering frequently asked HR questions. AI is driving digital transformation in professions across the board, including even [politics and the justice system](#)—where AI can be used by lobbyists and lawyers to analyze data and gain insight on how a politician or court is likely to perceive and act on an issue. Bots are heavily used in telecommunications as well: AT&T uses bots to perform more than 500 different tasks, from resetting passwords to documenting orders—and company leaders predict that number will triple by the end of this year.

Bot technology is enabling more natural, conversational interactions, as we see in digital assistants like Siri or Alexa or Google Assistant. This furthers their ability to attract and serve not just early adopters but mainstream users. In the UK, the National Health System is piloting a helpline with more than 1 million patients, to field initial calls, answer general health queries and determine if a visit to the doctor is required. The technology vendor, [Babylon Health](#), is readying a next-gen product that calls on 300 million strings of medical data to accurately and quickly diagnose about 80 percent of common illnesses.

Chatbots in the enterprise arena are beginning to illustrate the potential of digital assistants in far more powerful ways than the consumer devices that are tending your music library or dimming the lights. They are being used to meet the need (and expectation) for instant, always-available and personalized customer service, both inside and outside the organization.

What can bots do for you?

When you think about the work you do, or the work your parents, your kids or your friends do—where do you see the most concerning or the most promising opportunity for the bots to move in and get to work? In a world of accelerating innovation, fortune favors those who find creative and inventive ways to jump ahead of the transformation curve and apply the best of both technology and human expertise to enhancing workplace efficiency and satisfaction.