



Robots in the Workplace: What Effects Does it Have on Employees, Employers and Work Comp?

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Sarasota, FL (WorkersCompensation.com) - In this tech-driven age of automation, robots have become a common sight on many warehouse and factory floors, and their numbers continue to grow. There has been a steady increase in the use of robotics in the workplace over the past several years. Robots can now be found in a number of different industries, including retail, agriculture, food, automotive and suppliers. They're also ever-present in the hospital/medical industries.

The Robotic Industries Association estimates that in 2017 more than 250,000 industrial robots had been installed in the United States, according to Safe + Health magazine.

Numerous autonomous robots are utilized in warehouses across the U.S. to help increase efficiency and save on labor costs. And some of the autonomous mobile robots found in warehouses today include goods-to-persons picking robots, self-serving forklifts, autonomous inventory robots and unmanned aerial vehicles, writes Craig Guillot of Supply Chain. These robots can help reduce cost and augment productivity in the workplace.

Additionally, autonomous robots are becoming increasingly more effective, as well as more affordable and adaptable with, "the ability to be adopted and scaled in virtually any warehouse environment," writes Guillot.

And in addition to reduced labor costs and increased efficiency, more robots in the workplace will have a significant impact on employee safety and workers' compensation matters, according to employment and labor attorney Natalie A. Pierce, a partner with international law practice Littler Mendelson, and co-chair of the firm's Robotics, Artificial Intelligence and Automation Industry practice group.

"I think advances in robotics are likely to improve workers' health and safety and in turn reduce employers' workers' compensation cost(s)," Pierce told [WorkersCompensation.com](#). "The creative application of robotic engineering designed to assist workers in performing the physical requirement of their jobs will greatly improve the ability of a worker to avoid those repetitive injuries and also can improve the ability of injured workers to return to work, therefore shortening the lost time period and reduce the reinjury rate."

Pierce also said autonomous robots are becoming more mobile, more dexterous, and more easily programmable, resulting in increased productivity and efficiency.

"And now that (autonomous robots) are moving on multiple axles and have enhanced visual sensory and audio capabilities, we are seeing more delicate application as opposed to just large car-making," she explained. "I've even seen autonomous systems building watches." And in medicine, robots are frequently employed to assist in complex surgical procedures.

Pierce said robots are utilized the most in auto manufacturing. Industrial robots have been a mainstay in the automotive industry for decades now, and Michigan remains the number one state in auto manufacturing and is known as the "robot capital."

According to a [study](#) from the Brookings Institution, Michigan uses more robots than any other state in the U.S. The study revealed that Michigan boasts the highest rate of industrial robots as a percentage of workers, and that the state's factories are currently employing nearly as many robots as the entire West Coast, writes Brad Tuttle of Money Magazine.

Michigan uses nearly 28,000 robots, which accounts for roughly 12 percent of the nation's total, the study found. It also revealed that Ohio is the second biggest user of robots, following closely by Indiana, and California coming in fourth.

Pierce said that in addition to autonomous robots, there has also been an increase in the use of exoskeletons in the United States.

"We are certainly seeing greater use in adoption of human enhancement for wearable robots such as exoskeletons," she said. "ASTM international Committee on exoskeletons held its first meeting earlier this year; the committee recognizes the need for technical standards, because the use of exoskeletons and exosuits has increased and will continue to increase across a number of industries, including construction, manufacturing, healthcare and the military."

Pierce detailed some of the different types of exoskeletons and how they significantly reduce the strain of performing strenuous tasks for wearers:

"Think of Iron Man or Sigourney Weaver when she wore that suit in *Aliens*. There are different versions. Some are just for lower bodies; some are full bodies; some are for back and arms; but you generally think of it as metal frames that workers are fitted with that have motorized muscles and multiply the wearer's strength," she said. "These exoskeletons allow the worker to transfer the load of both the robot and its load through the robot."

Pierce also said exoskeletons can help reduce the incident of back injuries due to their ability to significantly alleviate the strain of exertion on wearers. She said that exoskeletons are able to lift up to 200 pounds without strain or injury to the wearer, and that they would even be useful in the medical field — for instance, assisting nurses when lifting patients.

Pierce explained that by 2025, it's estimated that the robotic exoskeleton market will be approaching \$2 billion, "and the price of exoskeletons has also fallen quite a bit."

And exoskeletons' potential to reduce workplace injuries would have a great effect on workers' compensation issues, Pierce said. "Workers' compensation claims typically run into the tens of thousands of dollars in the U.S and have a significant economic impact to the tune of tens of millions of dollars," she said. "So there really is great promise and huge potential of reducing incident of injuries through the use of exoskeletons." Exoskeletons can also increase speed and productivity in the workplace, she said.

Exoskeletons have been utilized even more outside of the of U.S., according to Pierce. Shipbuilders in South Korea and Japan employ exoskeletons to do much of the strenuous work and heavy lifting. And they are employed in a number of other industries in those two countries as well.

The growing number of robots in the workplace has raised concerns that many workers might lose their jobs and be replaced by this sort of tech. Those robots can potentially do the same the job at a much lower cost to employers and can reduce the number of human injuries on the job. However, Pierce believes that these concerns are largely unwarranted.

"If you look back historically, typically when you see rises in the use of robotics in the workplace, you don't see a course on the increase in the rate of unemployment," she said. "What you see is greater productivity."

As an example, she points to Amazon's acquisition of Kiva Systems — a maker of robots for warehouse services — for \$775 million in 2012. Instead of workers getting laid off at Amazon following the acquisition, employment rose in the company. "I think they now have five times as many employees," Pierce said.

And Accenture, a leading global professional services company, eliminated 17,000 back-office jobs last year through automation without laying off a single employee, she said. Accenture was able to accomplish this through 18 months of planning and retraining of its employees.

Employing robots to do jobs that had been previously completed by workers opens up opportunities for those workers to learn new skills, Pierce said.

"The jobs that are left will be the jobs that really don't require too much routine work, and that's where upskilling the workforce is going to be very important," she said. "And the good news is that there are so many mass online learning opportunities out there that I think there are a lot of employers who are finding that they can use those tools to incentivize workers to upskill where possible."

Pierce reiterated the importance of the reskilling and retraining workforce members.

“We’re in a state of constant learning, and we need to be reskilling our workforce,” she said. “We need to be focusing on that because we have a tremendous skills gap for the jobs of the future. We simply don’t have enough individuals that will be qualified with the requisite skillsets for that work.”

And with the use of robotics and other artificial intelligence quickly expanding in the workplace, the law is having a hard time keeping up, according to Robin Feldman, the Arthur J. Goldberg Distinguished Professor of Law and Director of The Institute for Innovation Law at UC Hastings College of Law.

“From ‘Boss AI’ systems to human enhancement technologies, AI is entering the workplace at a rapid pace,” Feldman said via email interview. “Although science moves at the speed of light, law moves at a glacial pace. The law is nowhere near the pace at which these issues are being implemented.”

“Courts and administrative agencies struggle to reinterpret workplace laws in light of new technologies and even these efforts lag several years behind the accelerating development and deployment curve,” according to a staff report in Robotics Business Review.

Pierce said, “I think as far as laws being created as a reaction to the new technology in the workplace, we’ve seen that mostly around the use of biometrics.” Biometrics refers to a technology used in the measurement and statistical analysis of people’s unique physical and behavioral characteristics. It’s chiefly used for identification and control of individuals who are under surveillance, per TechTarget.

“We’re talking about fingerprints or facial scans; that’s where those technologies can present some hidden risks for employers and that’s where we’re seeing some laws come out of...(biometric use),” Pierce said.

In an excerpt from her journal article titled, “Artificial Intelligence, Innovation, & Competition,” Feldman reflected on how artificial intelligence has become more prevalent in daily life and how society will have to adapt to this new environment:

As AI becomes a ubiquitous part of our everyday life, a key aspect will be the way in which society — and by extension, the legal system — manages both the integration of these systems and society’s expectations. Society will have to learn to trust the capacity of AI systems sufficiently so that it can soar to new heights, without succumbing to the “irrational exuberance.”