



# Robotics: A New Frontier for the Equipment Finance Industry

*The rise of robotics and improved automation present a massive emerging opportunity for growth in the equipment finance industry, says Dean Oliver of NFS Leasing.*

By Dean Oliver



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Like many I have often wondered at how technology has evolved so rapidly since the invention of the computer and the microchip, and more recently how it might evolve with the development of machine learning, artificial intelligence and the rise of industrial robotics. As a science fiction fan, I have enjoyed both optimistic (2001: A Space Odyssey and Wall-E) and more dystopian (Blade Runner and Ex-Machina) visions of robotics; and I am happy to have lived through the age of the PC, the Internet, the cellphone/smart phone, and to witness electric cars become commonplace.

Today there are hundreds of new technology applications impacting virtually all industries, to such a degree that the World Economic Forum has begun to call this melding of the digital, physical and biological systems the "Fourth Industrial Revolution" and has established a center to shape its development for the benefit of humanity.

Many have seen and are amazed by some of the most advanced robotic technologies demonstrated in the quarterly videos produced by Boston Dynamics. These robots appear incredibly versatile, lifelike and portend great advances to be made in the coming years. Nevertheless, the application of robotics does not lie in the future; it is here and now. According to International Data Corporation (IDC) worldwide spending on robotics and related services will hit \$135.4 billion in 2019. Up from \$71 billion in 2015, and is set to grow at a compound annual growth rate of 17 percent, *Fortune* magazine reports. The two fastest growing industries for robotics are healthcare

and process manufacturing; but, as I have said, they are not alone.

The Asia/Pacific region is leading the globe in robotic expenditures, accounting for 65 percent of current annual purchases. The report projects the region's current-day \$46.8 billion spend to nearly double during 2019, making it also the fastest-growing region in the world when it comes to robotics.

In daily news, we now regularly see reports of warehouse automation technologies being developed by companies such as Amazon, FedEx and Walmart. The rise of shipping and e-commerce, and the price and efficiency battles between these large firms are driving innovation and increasingly sophisticated robotic distribution and handling applications. The robotic capabilities are augmented by machine learning: "equipped with laser-based sensors, cameras and other navigation tools, the robots stop when people or other vehicles get in the way. In some cases, they even figure out a new way to go."

While one might expect these implementations would drive pink slips, the robotic "tuggers" introduced at a FedEx hub in North Carolina did not have the anticipated result. In an area of low unemployment, these machines now work alongside human co-workers. "The robots replaced a few jobs right away. And in time, they will replace about 25 jobs in a facility that employs about 1,300 people. But the hub creates about 100 new jobs every year — and a robot work force still seems like the distant future," according to the New York Times.

With a currently robust economy, low unemployment and a demand for workers, this is welcome news to employers. Nevertheless, not all forecasts are without concern. According to





McKinsey & Co.: "About one-third of workers in the United States will have to switch occupations because of technology-driven automation by 2030." In addition, in an economic downturn, which some speculate could be coming after a 10-year expansion, companies have an increased incentive to automate in order to reduce labor costs and increase efficiency. In a recent study, Economists Nir Jaimovich, of the University of Zurich, and Henry Siu, of the University of British Columbia, found that 88 percent of job loss in routine occupations occurs within 12 months of a recession.

The rise of robotics and improved automation present a massive emerging opportunity for growth in the leasing industry. In the last few years our company, NFS Leasing, like many other lessors, has worked with robotic companies to provide solutions for customers that have helped improve their competitiveness, quality and speed of customer service. In many cases these transactions are simply traditional equipment finance, but in certain cases, a robotic transaction may present unique challenges. Generally, the equipment may be new, and require advanced software and additional programming to make it functional in a new environment. In some cases, ascertaining the lifespan, residual value and economic impact of the equipment can be difficult. In others cases, the equipment may require customization to achieve its intended functionality, which may negate its secondary market value. Finally, there are times when new robotic equipment just does not perform as well as expected, to the dismay of not only the customer, but also the vendor and the lessor as well.

As a "Story Credit Lender," we place greater reliance than many lenders on the equipment asset value to enable us to provide financing. Therefore, the asset valuation research we perform in advance of a robotic financing is critical, because in our market niche a higher default rate is expected. If our equipment valuation is incorrect, portfolio losses beyond our projections may result. Fortunately, we maintain good relationships with our vendors as well as our current customers, who can often provide some level of insight when our own asset experts are unfamiliar with the equipment lifespan and residual valuation.

While change has developed rapidly, the pace of automation is increasing as additional industries adopt robotic application solutions. In our own experience as an independent lessor, we have financed Robotic Solutions in several industries, some more accustomed to automation, and some where automation is relatively new. In the last several years in the medical industry, robotic surgery has become commonplace, with such firms as Medtronic, Mazor and Intuitive Surgical developing minimally invasive surgical solutions for innovative care. Intuitive's da Vinci surgical system was one of the first robotic-assisted, minimally invasive surgical systems cleared by the FDA in 2000. Today, the da Vinci systems are used by surgeons in all 50 U.S. states and 66 countries around the world and the company generates revenues of \$3.7 billion.

As companies look to reduce cost and improve productivity, we have financed packaging and automation solutions for the bottling, canning, palletizing and loading of beverages and other liquids. We have financed liquid handling solutions from companies such as Tetra Pak, Apacks and Hamilton Robotics. Each of these manufacturers provide both standard as well as customized solutions, and the industry is still growing rapidly. Switzerland's Tetra Pak is not new, having been founded in 1951, but recent consumer demand has driven continued growth along with the rising demand in the bottled water and bottled juice industries. While privately held, it reportedly had revenues of \$16.5 billion in 2017. In the U.S., Hamilton Robotics has capitalized on the progress of lab and medical research, creating automated liquid-handling solutions for biopharmaceutical sample preparation and assay testing.

Whether it be handling robots, packaging, bottling, medical or surgical applications, or the myriad of other robotic purposes too diverse to enumerate, the leasing industry has always helped to drive growth and innovation across markets, adapting to technological changes, and providing creative financial solutions. The growth of robotics presents yet another opportunity for the leasing and finance industry for those willing to advance with the "Fourth Industrial Revolution" and take an educated risk on the future. ☺

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