

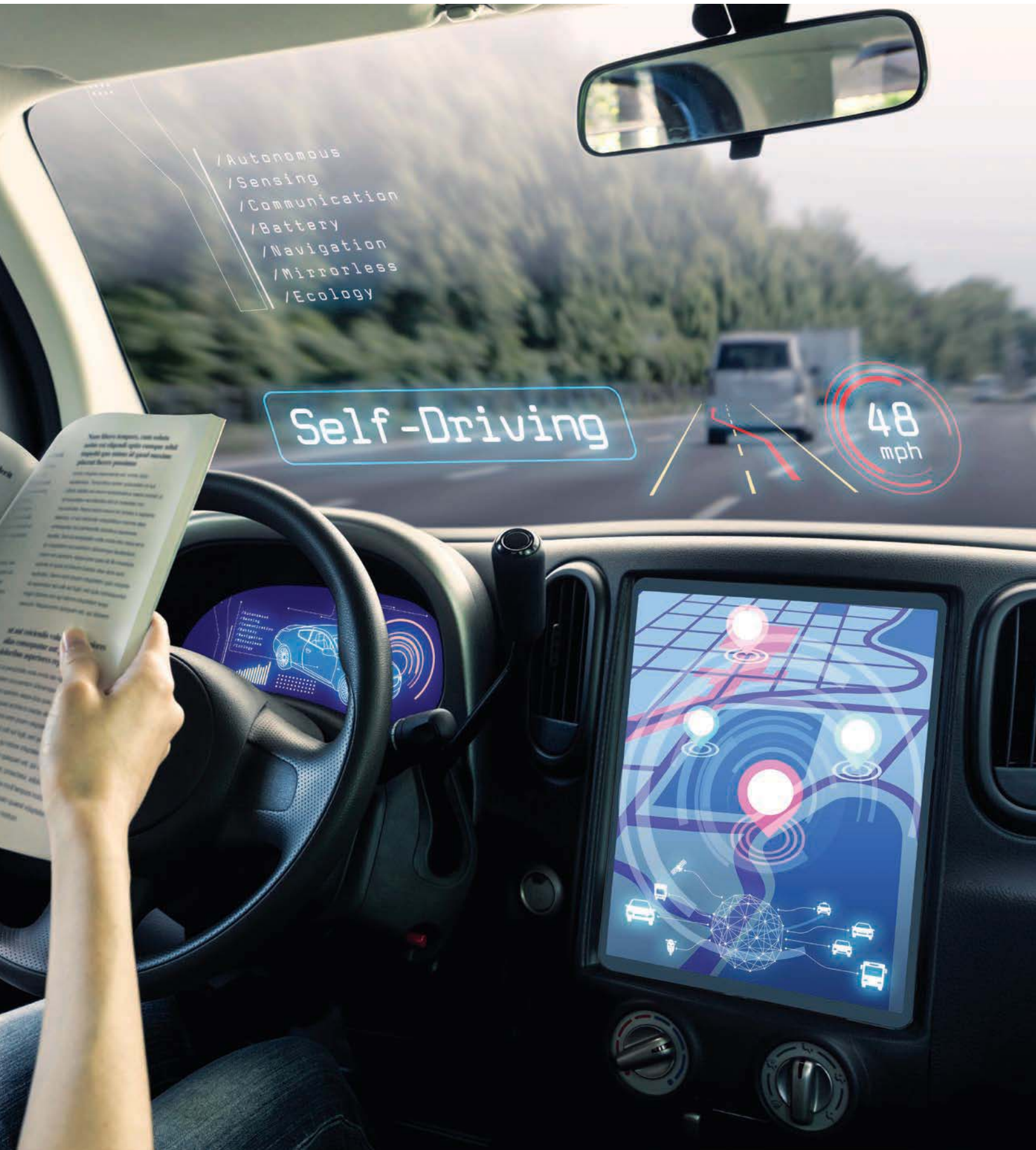
| FEATURED ARTICLE

Industrial Distribution > Beyond the Autonomous Truck

BY JOHN SALUSTRI

> It should come as no surprise that technology has informed virtually every aspect of our lives, from how we watch movies and order dinner to what we drive and what we do with our vehicles when we get to our destination.





- /Autonomous
- /Sensing
- /Communication
- /Battery
- /Navigation
- /Mirrorless
- /Ecology

Self-Driving

48
mph

For commercial real estate executives of all sorts, one of the most outward-facing examples of this technological transformation resides in industrial distribution. In fact, while so much of the buzz right now surrounds autonomous vehicles, it might very well be that this still-to-come delivery advancement might already be facing some serious competition due to that rapid advancement of technology.

Droning On

Drones, for instance, are one clear and present alternative. So common are they that teens can often expect one for their birthday. Amazon, as just one example, is well on its way to taking them out of the realm of toys (even as it delivers the toys!) and making them a viable delivery system.

In the marketing materials for what it calls Amazon Prime Air, it predicts that, “One day, seeing Prime Air vehicles will be as normal as seeing mail trucks on the road.” (That, of course, assumes we’ll still have mail trucks at that point in our tech advancement.)

In fact, anecdotal evidence shows that at least one major provider of distribution space is planning for drone pickup and delivery on its rooftops. In addition, Steve Kapp, SIOR, managing director of Newmark Cornish & Carey in Oakland, Calif., reports that plans are being ironed out for a drone airport in Alameda, just north of Oakland International. And, according to *Area Development Magazine*, the FAA predicts some 30,000 drones in the skies by 2020.

(If you’re worried about air congestion, Amazon also addressed that issue, though somewhat vaguely: “We believe the airspace is safest when small drones are separated from most manned aircraft traffic, and where airspace access is determined by capabilities.”)

Along with safety, Kapp expresses questions about their practicality. “I don’t see them carrying a refrigerator,” he says, “but maybe a pair of shoes, a jacket or



a bag.” He might be right about that, and Amazon is setting expectations rather low, predicting deliveries of packages five pounds or less in under 30 minutes.

But here again, we shouldn’t underestimate technology. As Amazon states: “We are testing many different vehicle designs and delivery mechanisms to discover how best to deliver packages in a variety of operating environments. The look and characteristics of the vehicles will continue to evolve over time.” (Of course, getting klonked on the bean by a pair of Adidas is much preferred to getting smacked by a Frigidaire.)

Why Ship It? Print It!

Another technology that could give automated deliveries a run for their money is 3D printing, and Kapp reports that one of his clients is already using the technology to produce plastic medical parts.

But the technology has progressed far beyond small plastics. In April of 2016 – a startlingly long time given the nature of tech – General Electric, for one, proclaimed that it had, “started testing the largest jet engine ever built, at its wooded test site near Peebles, Ohio. The new engine, the GE9X, is more efficient, more powerful and more heat-resistant than its predecessors. It’s also made with 3D-printed parts.”

As *Industry Week* reported two years ago – again, a technological generation – “3D printing means that a greatly simplified, highly responsive and infinitely flexible supply chain fulfills the order. In the future supply chain, the customer places the order first, and then a local, highly automated 3D printing shop produces the finished product and then delivers it, often via drones.

“The demand economy is disrupting every sector,” the article continues, “and when paired with the advent of 3D printing, is a true game changer for the manufacturing industry. It should be a warning sign for companies that if they don’t innovate their supply chains, they may become irrelevant as consumers will have more control of the production of their own products.”

Unfortunately, there is no time frame for such a revolution – nor one champion. “When you have these massive changes in distribution,” says James Klein, SIOR, president of Klein Commercial Real Estate in Gardena, Calif., “it comes down to who will support the new technologies, who will get behind it. It’s not always the best product that wins but the product that has the most capital behind it.”

Three-D will challenge traditional distribution on a case-by-case basis, a medical parts provider here, an aircraft

manufacturer there. So might the growing Makers Movement, which also promises to bring production to the community level, further challenging the need for big-box distribution centers.

The Makers Movement does much more than celebrate the joys of DIY. It promotes local manufacturing, and is supported by such production giants as GE, which has actually launched maker locations to promote the movement in such cities as Chicago.

Appropriately called GE Garages, these locations, according to the firm, are skill-building centers, designed “to serve as an advanced manufacturing lab for technologists, entrepreneurs and everyday Americans.

“The innovation and manufacturing center aims to spark interest and engagement for modern making from prototyping inventions to modern manufacturing-based technologies through hands-on experiences with 3D printers, CNC mills, a laser cutter, injection molder and through special classes in the space.”

Totally Tubular

There is another, even more mind-boggling alternative – one that space explorer, carmaker, dreamer Elon Musk champions. It is (are you ready?) the pneumatic tube. Granted, we are wandering way out on the imagination scale here. But then, we could have said the same thing about automated trucks not too long ago.

As authors W. M. Shibani, M. F. Zulkafli and B. Basuno reported in a paper delivered

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for the 2016 (note the year) International Engineering Research and Innovation Symposium, “Currently, transportation systems commonly involve route transportation, such as a railway or road vehicle system.

“Another transportation system mechanism of goods and people is through the use of the air tunnel. This approach does not interfere with existing railway or road vehicle systems. Therefore, using the air tunnel eventually reduces route traffic jams and provides a rapid system in delivering goods to various destinations.”

“I don’t see it making a lot of sense,” says Kapp, “and Elon Musk likes to champion far-out ideas. The cost of building those things would be tremendous. Look how costly it is to run just one more tube under the East River in New York.” (Kapp is referring to a new proposed rail tunnel under the Hudson River, which has been priced at \$13 billion.)

The paper’s authors acknowledge the extreme cost of such a far-out plan. They mitigate that with savings in above-ground infrastructure and decreased maintenance on the tube carriers. But the trade-off is by no means dollar-for-dollar.

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A New Type of Flex Space

Will drones, 3D printing or any of the other technologies discussed here truly represent a threat to trucking, autonomous or otherwise? Probably not – at least not for the foreseeable future. It is enough to know that change is now the constant in industrial manufacturing and distribution.

In the face of this rapid, massive change, the key is flexibility. Some industrial facilities will ultimately be labeled obsolete. Others might be reworked for new technologies. And new builds have to come with a plan for adaptive reuse. According to Kapp, “Everybody has to keep their eyes open. In five to 10 years, everything will look different.”

Klein agrees: “Land values and building costs are so high that it is increasingly tough to build new. And there will be a lot of land that won’t be used for industrial anymore. That land can be repurposed for other uses.”

What is certain is that there are more changes ahead for industrial distribution, whatever shapes they take. Those who don’t acknowledge the future with flexible designs friendly to adaptation will frankly be stuck in the past. ♥

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