Behind the hype

Adding context to autonomous vehicle commercialization

INTERVIEWED BY JAYNE GEST

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At times, automated vehicles (AV) have dominated the headlines, so it can be easy to forget that the technology is still in the early stages of development and commercialization.

Justine Kasznica, shareholder at Babst Calland, is routinely asked: Why are AV companies and their automotive partners missing their stated deployment dates?

"This question raises an important point about current challenges to AV commercialization, with direct analogy to other autonomous mobility platforms, such as drones, personal delivery robots and more," she says.

Some resources are being held back by the industry because of regulatory uncertainty, safety and security concerns, and the need for infrastructure that supports the technology, says Timothy Goodman, shareholder at Babst Calland.

"Even in view of this, progress is happening, particularly with regard to electrification and advanced driver-assistance systems (ADAS)," he says.

Smart Business spoke with Kasznica and Goodman, in the firm's Mobility, Transport and Safety practice group, about AV development and commercialization.

Why should business executives stay aware of AV and other mobility development?

Automation has penetrated every segment of industry. In fact, warehousing, shipping, logistics and transportation are becoming more automated at a greater pace than ever before. In the future, whether it's a drone, a legged robot or a wheeled delivery vehicle that solves the last mile problem, nearly every business will be impacted by AV. In addition, there's plenty of opportunity to participate in this mobility evolution, even if it's indirectly.

How is regulatory uncertainty playing a role in AV commercialization?

The federal government controls motor vehicle safety with input from the automotive industry. Historically, National Highway Traffic Safety Administration regulations assumed vehicles would have a steering wheel, brake pedal and driver. The rules need to catch up to AV technology, which may or may not have these legacy items. However, federal rulemaking can take years and this technology is changing rapidly.

In the absence of a strong federal framework, states are stepping in. A patchwork of laws ranges from hands-off and hesitant, to the proactive approach of Pennsylvania and California, which want to lead the way in developing sound regulations for AV testing and deployment. In addition, industry groups are creating voluntary standards for AV companies, which may influence future legislation.

The lack of a consistent regulatory frameworks had led many AV companies to start missing their projected targets for commercial deployment, in part because these regulations often dictate design features in their products.

What other challenges need to be overcome?

Autonomy is described in different levels, from zero to five. The technology is currently at level two, which is partial automation, i.e. lane assist, where the driver is still critical. Moving up to level three, four or five will require more than regulatory certainty — although that's a big part of it. There are many transportation and infrastructure factors, like the advent of 5G, that need to catch up to the technology. This, in turn, further complicates AV development cycles.

The industry — and regulators — want AV systems to function well and not take unreasonable safety risks. AV systems in beta mode can become confused by unusual conditions, such as dust/rain/snow, pedestrians or unique road obstacles. Built-in redundancies are also required to combat software fails, while expensive and complicated technology, production cycles and implementation delays create barriers. Other concerns related to the cybersecurity and data privacy of integrated software systems need to be fleshed out before there will be full-scale commercialization. Solutions will require industry collaboration, public-private partnerships and data sharing.

While level five automation is years away, it will happen. Regulators are still trying to figure out how to promote safety without chilling innovation or picking winners and losers. In turn, resources are being held back by companies until there is more clarity with regards to regulations and the science. ●