

Huge Changes To Come In The Auto Industry

Major business-model disruption is coming to the automobile industry. A KPMG survey of 800 auto executives worldwide found that 82 percent believed that major business-model disruption is somewhat or extremely likely in the next five years. One year ago, the same survey had only 12 percent believing major disruption was somewhat or extremely likely in the next five years.

The pace of technology disruption is accelerating around autonomous vehicles (vehicles that can operate with reduced or no human interaction), connected vehicles and transportation systems (which allow a vehicle to share internet access with other devices), and car sharing.

As Bill Ford recently said, “The way people move, the way goods move and the way health care is delivered is going to change in a very short period of time.”

GM, Ford and Fiat-Chrysler (FCA) have announced major new initiatives in recent months around the auto industry technology disruption. GM acquired Cruise Automation, a three-year old startup located in San Francisco for \$1 billion, has invested \$500 million in Lyft and purchased Sidecar Technologies, rebranding it as the car-sharing service Maven.

Ford refers to itself as a “mobility company,” has a smart mobility division, a research center in Silicon Valley, a car-sharing service in London and invested \$182 million to fund and collaborate on software development with San Francisco-based Pivotal.

FCA reached a deal to build 100 Chrysler Pacifica hybrid minivans for Google’s Self-Driving Car Project with plans to test the cars in Michigan.

Other automobile manufacturers are making similar strategic investments. Toyota recently hired the entire staff of Jaybridge Robotics and has a new partnership with Uber.

The technology disruption is bringing new competitors into the automobile industry. Among the potential major new competitors are Apple, Alphabet, Tesla, Uber, Lyft, QNX, Cisco, Codha Wireless, Auto Talks, Mobileye and Nvidia. There are also hundreds of small technology companies working on autonomous and connected vehicles.

It is uncertain what the impact of technology disruption will be on the demand for vehicles. Autonomous vehicles and car-sharing may result in fewer vehicles sold and reduce the number of vehicles per household, which has been increasing steadily.

Automakers are increasingly concerned about how technology has the potential to help people travel easily and cheaply without owning a

car. The technology has the potential to open up new sources of revenue around data and analytics and, with autonomous vehicles and car-sharing, the miles driven will accumulate a lot more than a personally owned vehicle creating service opportunities.

Also unclear is how value will be created and which companies will be able to capture the value. Will value be created by mechanical engineering and design or through software engineering? Will existing automotive companies be able to capture the value or will some value be transferred to the new companies looking to potentially enter the industry?

Metro Detroit has a concentration of engineers and an installed base of automotive manufacturing and tier one suppliers. These advantages will not be sufficient for the technology disruption to be a major opportunity for the local area. The conservative business culture and large size of firms in the automobile industry is not consistent with developing leading-edge technology. GM is leaving Cruise Automation in San Francisco (where they are hiring new engineers) rather than moving it to Warren. Ford has its research center in Silicon Valley rather than in Dearborn.

Research by Agrawal et al. in the Journal of Urban Economics (2014) demonstrates that in regions dominated by large-firm research (automotive industry in Southeastern Michigan), the presence of a sizeable population of small firms significantly increases innovation. Policies designed to cultivate new ventures and small firms around automotive technology disruption will be an effective economic development strategy in Southeastern Michigan.

Economic growth happens when the potential for commercialization exists outside of the large firms. Innovation in autonomous and connected vehicles has the possibility to cross over into other industries generating more economic growth in the region.

Without the presence of small innovative firms and an entrepreneurial ecosystem around autonomous and connected vehicles, Metro Detroit will not be able to capitalize on the auto industry technology disruption opportunity.



Jonathan Silberman is a professor of economics at Oakland University. He writes a monthly column on the economy for the JN. You can contact him at silberma@oakland.edu.