But we believe GM may surprise...

While some of the historical characterizations of GM are accurate, there are clear signs that the company is changing. GM has been moving with unprecedented speed to tackle strategic challenges, eliminate distractions (e.g. exits from low return markets), and focus on the most compelling opportunities. And inside of GM, no opportunity is viewed as more promising than Autonomous Vehicles and the Mobility Business Models that they will enable. GM views the addressable market as massive -- $7 trillion globally. And we believe that this business could be more valuable than the Auto Manufacturing business that spawned it (it will be less cyclical and potentially less fragmented if scale and network effects create natural monopolies/oligopolies in major markets). Importantly, we believe that speed to market with AVs will be the most critical driver of success. Ultimately, this is why we believe that GM's assertion of leadership (and their imminent deployment of commercial AVs) is so interesting.

We'd note that GM has not yet disclosed the key elements of their autonomous mobility strategy. And this makes it difficult to assess their plan, probability of success, or conduct a detailed assessment of valuation. Nonetheless, based on their public disclosures so far we believe that the business will likely include:

- **Artificial Intelligence** – GM believes that they have achieved a leading position in AV development. And their autonomous driving demonstrations in relatively complex urban environments (San Francisco) may back this assertion. What is indisputable is that GM has one of the most extensive AV development programs of any major OEM (350 autonomous test vehicles by YE 2017; likely 1,000 by YE 2018; we believe that Ford had less than 10 for most of last year, they ended the year at 30, and they intend to ramp to 90 by late 2017; we estimate BMW/Intel/Mobileye/Delphi/ will have 40-100 by YE 2018). And the scale of GM's effort will likely further accelerate GM's development, in part because they will be able to gather significantly more data, and their AI should benefit from significantly more learning.

- **GM has already developed a fully redundant mass producible autonomous vehicle**, likely giving them some advantage in terms of deployment timing. In some ways this demonstrates the advantage that GM has in terms of full control of the vehicle development process AND ongoing integration of technology. Leadership of Cruise Automation has been highlighting the advantages since becoming part of GM, as this has helped them avoid "the seemingly impenetrable wall of politics, competitive fears, NDAs, liability concerns, data ownership, asset financing, long-term alignment, and a host of other issues that plague other relationships and partnership models". Development and mass production of fully redundant, fully connected, cyber secure, "fail operational" autonomous vehicles (i.e. redundant Steering, Braking, Electrical Architectures, Sensors, Computers) is no small task. In fact this has been described as similar in complexity to the development of an entirely new vehicle. It is simply not possible to safely retrofit an autonomous driving system onto an existing production vehicle. For example, if the power steering system fails, a second source needs to kick in (in most non-automated vehicles, the human driver is the redundancy factor if the power steering system fails). The entire electronic architecture of the vehicle also needs to be designed for secure data collection and secure over the air updatability (now