Smart Axiom

Security-as-a-Service

INTERNET OF THINGS:
SMART AUTOMOTIVE

The Internet of Things and wireless technology has transformed the automotive experience dramatically over the last decade. These technologies are breaking fresh ground for automotive manufacturers by introducing the new concept of connected vehicles alongside the traditional concept of the everyday automobile. The global connected or smart vehicle market shipments are expected to reach 60MM units and $100B in market share by 2018. The connected or smart vehicle is a transformational innovation that allows us to stay in touch with the world while being transported.

Smart vehicles are connected to a wireless network that enables communication with other devices inside and outside the vehicle. Connected vehicles are part of the smart transport system which includes cars, buses, trucks, trains, traffic signals, toll booths, parking garages, cell phones and other devices and structures, all communicating with each other. This integrated approach will help the system prevent accidents while enhancing safety and mobility.

In the Internet of Things, the potential exists to connect all those disparate systems not only with each other, but also with a wireless network. The "connected car" will further transform the automotive experience, delivering benefits including:

- **Fleet Management and Vehicle Telematics:** Smart Axiom Connected Vehicle solution ensures successful implementation of end-to-end fleet management, as well as vehicle health & telematics solutions through in-vehicle data collection with embedded applications, gateway service, in-cloud data management and user analytics with its elastic and scalability.

- **Predictive maintenance and Safety:** Smart Axiom's Big Data predictive analytics translates the maintenance concepts into practical and clear procedures with a range of predictive and "what-if-happen" models. These are associated with sensors, hardware modules, data transmitters and vehicle control units, and are used for monitoring the functional state of the vehicle and improving driver safety.

- **Cloud Service and Connected Cars:** Smart Axiom's platform offers a stack of plug-and-play IoT components that streamline the development of connected car applications and ensure smooth integration between separate modules of the connected car within a secured cloud environment.

- **Car-To-Car Communication:** On streets and highways, car-to-car communications will activate crash-avoidance systems to help prevent accidents. Vehicles will also report traffic conditions to other vehicles and local authorities.

- **Internet Access:** Wi-Fi and LTE/5G connectivity will enable passengers to use internet on their laptop or mobile devices.

- **In-car Infotainment:** Backseat DVD players will be replaced by systems that stream movies and TV shows from video streaming services.

Addressing Challenges

Realizing the vision of the connected vehicle will require forming a consensus among automakers, automotive OEMs, and technology providers regarding such challenges as:

Security: Security and data privacy, which are already rising in importance given increased vulnerabilities to attacks, espionage and data breaches are driven by increased connectivity and data sharing. This requires a decentralized horizontal security approach at device, operation and transport level. Security needs to be built into every device from the initial design phase, beginning with hardware and operating systems.

Safety: On-board systems must receive communications, software updates, and patches in ways that do not impede safe vehicle operation.

Technology: Connected Vehicles are a combination of diverse connectivity and sensing technologies. The adoption of connected vehicles will depend on the maturity of each of these technologies for commercial use. Other markets are adopting these technologies at a slower pace or have zero adoption, which increases the importance of the connected car to the overall IoT industry. Components in a vehicle come from dozens of manufacturers. Integrating disparate systems will require establishing standards deep within the supply chain.

Business Model: The automotive ecosystem is a closed system. Vehicle manufactures define boundaries, structures, and processes. Automotive suppliers design and create hardware components and application software in close collaboration with the manufacturers; synchronization will be critical to success.

Lifecycles of Automotive Industries: The automotive industry has different life cycles to upgrade software and hardware, posing a serious challenge to the connected vehicle industry. Telecom companies are constantly upgrading their operating systems and offering new applications for smartphone and IoT devices, whereas automotive OEM manufactures usually work with a 5-year cycle.

Smart Axiom Solutions

Smart Axiom is an innovative emerging company delivering unmatched IoT products and solutions. We are the only company delivering a Blockchain solution powered by decentralized, peer-to-peer communications and no-single failure connected cars.

Smart Axiom provides the IoT systems and software that deliver the underlying intelligence—including decentralized network and Blockchain security functionality. This enables smart vehicle communication networks and devices to perform more safely and reliably. Smart Axiom Intelligent Device Platform enables developers of connected cars to jump-start development, with pre-configured software components, leveraging innovation throughout the ecosystem.

Smart Axiom's decentralized horizontal security and IoT platform delivers the underlying intelligence—including Blockchain security and context-aware features — enabling connected cars and their communication networks and devices to perform safely and reliably.