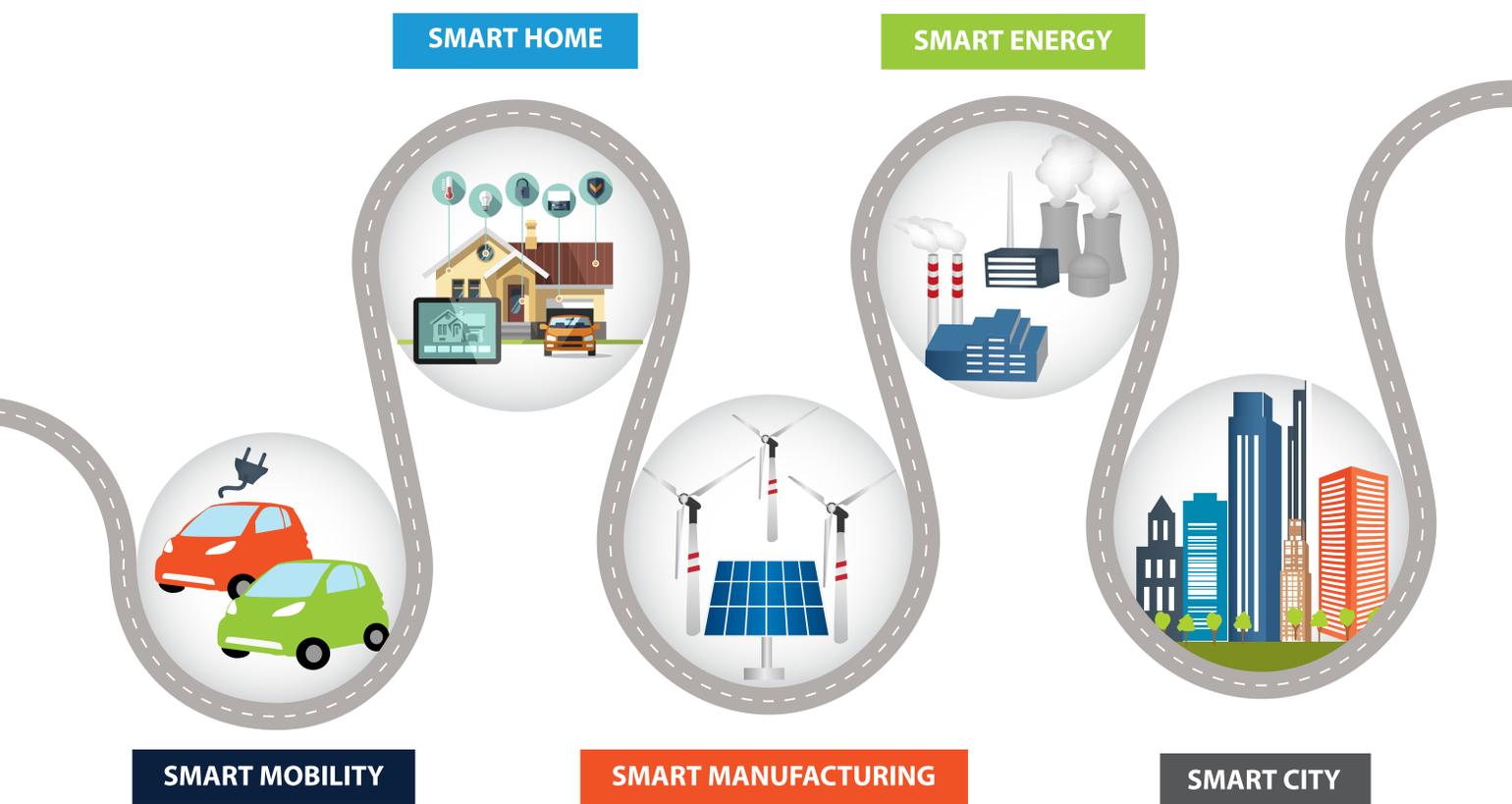


Connected Vehicle Data and Edge Analytics

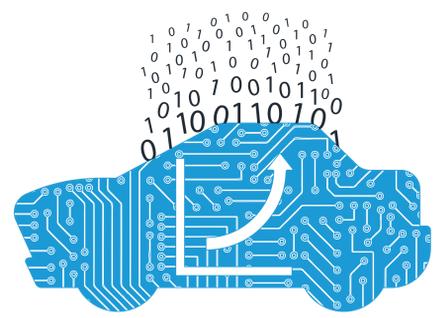
Automotive and The Internet-of-Things (IoT)

In the connected world we live in, automotive is a leading industry for leveraging IoT technologies.



Increasing Vehicle Data = Increasing Resource Demands

In automotive, there will be exponentially higher demand on communication networks and cloud computing resources due to the growing number of vehicle embedded devices with high-capacity bandwidth and computing requirements. Data transmission between connected cars and the cloud is predicted to reach as high as 10 exabytes per month by 2025 – that’s 10,000 times the amount of data typically exchanged today.*



The automotive industry will eventually reach a tipping point where this massive amount of data could overwhelm cloud services and communication networks, resulting in increased latency of data analyzation and associated critical decision making. Because connected vehicles are sophisticated devices that require continual real-time analytics and processes to keep drivers secure, a delay in analyzation can result in serious safety concerns. Fortunately, edge analytics can be leveraged to address these issues.

Edge Analytics to the Rescue

Edge analytics is an approach to data collection and analysis where data is analyzed remotely at the point of data capture—in this case the connected vehicle itself—followed by transmission of the analytic results to one or more data centers in the cloud. IDC estimates that 10% of the world’s data will be processed on the “edge” by 2020. Implementing edge analytics reduces the amount of data transmission required between the vehicle and the cloud, yielding multiple benefits:

- Reduced critical decision latency
- Reduced transmission expenses
- Fewer network availability delays
- Data privacy preservation
- Efficient analytic resource scaling
- Bandwidth limitation resolution



Automakers and suppliers are actively working on edge computing technologies and processes to take advantage of this opportunity. The Automotive Edge Computing Consortium (AECC) is focused on increasing network and computing capacity to accommodate connected vehicle big data using edge computing and more efficient system design. Prominent AECC members include companies such as DENSO, Ericsson, Intel, NTT DOCOMO, and Toyota Motor Corporation to name a few.

Airbiquity’s OTAmatic™ over-the-air (OTA) software and data management service can perform both connected vehicle edge analytics and analytic module software updates with minimal resource requirements. This is important because there is limited processing power and memory availability in embedded vehicle hardware devices and the value of data analytics can be lost if it isn’t processed in a timely manner and acted upon.



OTAmatic features a platform independent edge analytics capability that optimizes data processing efficiency on-board the vehicle. Duplicative analytic work is eliminated by merging identical modules to limit the amount of data transmitted from the vehicle to the cloud, and associated bandwidth expenses.

OTAmatic makes it easy for automakers and suppliers alike to dynamically configure and update edge analytic modules running in the vehicle. Service delivery management can be executed by one or more authorized non-technical system users via a friendly back-end web interface with intuitive commands and controls.



*Automotive Edge Computing Consortium estimate