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Future-Proof Connected Mobility: A Data-Driven Approach

3 Future-Proof Connected Mobility: A Data-Driven Approach

- 3** Attendees
- 4** A Volatile Landscape
- 5** “Data-driven Company:” Just Another Buzzword?
- 5** Business Models: How Different Will They Be in a Connected and Data-centric Industry?
- 6** Software: A Driver for Innovation?
- 7** Hunting for Data Talent: Still an Issue in 2021?
- 7** Data Monetization: Myth Or Reality?
- 8** Reaching Inflection Point

Future-Proof Connected Mobility: A Data-Driven Approach

Frost & Sullivan, The Growth Pipeline™ Company, recently gathered a select group of business and technology thought leaders to participate in a series of two Virtual Think Tanks to discuss “Future-Proof Connected Mobility: A Data-Driven Approach.” The sessions, moderated by Franck Leveque, Partner and Business Unit Leader, Mobility Group, Frost & Sullivan, provided an understanding of how organizations are engaging with digital transformation in their quest to develop a data-driven, value-creation model for the future.

As connectivity and digitization disrupt the mobility ecosystem, how can stakeholders implement integrated, organization-wide, data-driven strategies? What form will innovative business models, products and services take? How can a robust enabling technology infrastructure be built? Where can one find the talent to extract true value from data? How can data monetization opportunities be unlocked?

These were among several recurring themes that emerged at the sessions that brought together OEMs from the truck, volume vehicle and supercar domains, technology providers and software experts. This summary document highlights key insights from the discussions and emphasizes how stakeholders can successfully embrace their digitally-connected future.

Attendees



Shreekanth Moorthy,
CIO,
Tata Technologies



Marco Ferdinando Carlino,
Vehicle Connectivity
Specialist, Automobili
Lamborghini



Michael Coté,
Digital Transformation
Specialist, VMWare



Dr. Florian Baumann,
CTO, Automotive & AI,
Dell Technologies



Harpal Singh Toor,
AVP Sales Tech,
Mahindra GmbH



Najamuddin Baig,
Manager Mobility Services,
Nissan North America



Basil Soland,
Consumer Digital Developer,
Volvo Car Switzerland AG

A Volatile Landscape

Digitally-driven initiatives in the form of Connectivity, Autonomous Driving, Mobility Services (including Shared) and Electrification (C.A.S.E.) are transforming the mobility industry fundamentally. Amid these changing dynamics, data has emerged as the game-changer; and industry stakeholders are reinventing their value propositions, products and services by anchoring them in data-driven approaches.

Today, there is widespread consensus that an effective data management strategy will create winning business models by virtue of enabling value to be extracted from the massive volumes and range of data—whether vehicle, customer or even third-party—that will be generated across a vehicle’s lifecycle. The gains from this data valorization will be immense: cost optimization and operational efficiencies, new and recurring revenue streams, customer intimacy and loyalty as well as competitive differentiation and business expansion.

But while such benefits are acknowledged, there are serious challenges ahead:



- Privacy and data security



- Leveraging data to future proof vehicle development



- Managing huge data volumes generated by autonomous and connected functionalities



- Lack of in-house expertise on new technology



- Limited capacity to implement effective AI/ML/cloud strategies



- Lack of cross-functional competencies in data utilization



- Bringing capabilities, ecosystem and infrastructure to scale

“There’s no single silver bullet from a change perspective. You need to identify and differentiate the areas in which you need to bring in efficiencies and process improvements today in order to build robust business models and services for tomorrow.”

**- Harpal Singh Toor, AVP
Sales Tech, Mahindra GmbH**

“Connecting devices isn't the challenge; it's about ensuring data security, privacy and sovereignty. Unless we can resolve these issues and provide the necessary transparency on data ownership, we will not be able to fully capture the potential of connectivity.”

**- Shreekanth Moorthy, CIO,
Tata Technologies**

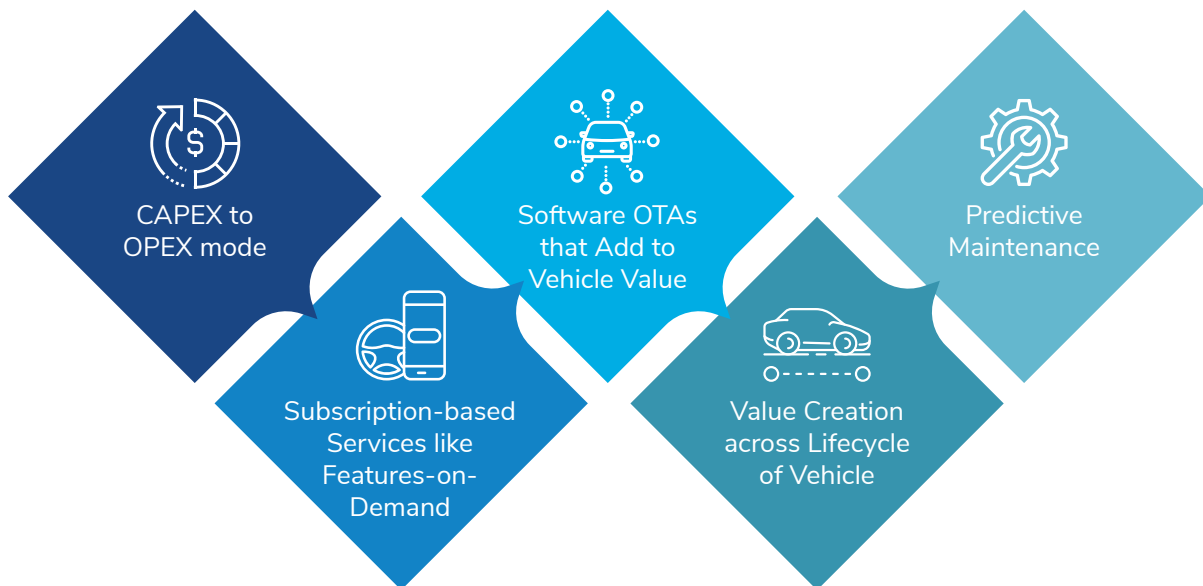
“Data-driven Company:” Just Another Buzzword?

Connected technologies have arrived and are rapidly penetrating mainstream applications. This makes it incumbent on every company to reinvent itself as a data company. Data/data use cases will enable better decision making, in which data will be used to identify trends, better understand customer engagement with various functionalities and lead to more informed, fact-based decisions; better products/services, wherein data will be used to create smarter, more intelligent products; and better processes, in which data will be used to automate business operations and realize overall efficiencies.

As Dr. Florian Baumann, CTO, Automotive & AI, Dell Technologies asserted, **“Data is becoming the most important asset that we have in the automotive industry. It will encompass the development of advanced driving assistance systems (ADAS) in the initial phase all the way through to monetizing data, creating new business models and offering innovative data as a service solutions.”**

Manufacturers in the commercial vehicle arena, in particular, have been able to leverage data to change their relationship with customers, creating more personalized services that target individual companies and even drivers. Such data-driven approaches have provided great leverage for customer retention and value creation. **“From agriculture to mining, vehicle manufacturers are already using connected vehicles to generate a wealth of data that can inform changes in decision making and be used to offer more value-added services to customers,”** said Moorthy.

Business Models: How Different Will They Be in a Connected and Data-centric Industry?



The industry is transitioning from a CAPEX to an OPEX model and is addressing changing customer expectations by moving towards subscription-based business models. This will allow customers to get different functionalities on demand, sometimes even after purchasing their vehicles. Several traditional car brands are now looking to target this lucrative revenue stream.

A leading European automaker recently estimated that an additional \$1 billion in revenues will be generated by features available on demand from its 20 million connected vehicles by 2025. Vehicle manufacturers have no choice but to rapidly reinvent their existing value-creation model, while leveraging the revenue potential of connectivity-enabled solutions through functionalities like autonomous parking, Night Vision, business productivity services and much more.

In the future, software-based options will make it easier to activate these functionalities, allowing consumers to buy such options directly online. From another perspective, software over-the-air (OTA) feature/updates are expected to change the conventional concepts of vehicle depreciation and residual value and could, in fact, add value to the vehicle throughout its lifecycle.

This extended ability to deliver value not just at the point of sales but throughout the lifecycle of the vehicle is a turning point. It will motivate vehicle manufacturers to completely redesign/restructure the electric/electronic and software architecture of the vehicle and build the required supporting infrastructure. Also, with 50-60% of vehicle value now being linked to software and electronics (and growing), automotive companies will have to think of themselves as software companies as well.

Predictive maintenance is another new business model being facilitated by connectivity and vehicle data. It will improve service efficiencies and productivity at dealerships and workshops by allowing part failures to be predicted earlier and more accurately.

Ultimately, as Toor noted, **“It’s not about a single model but a combination of business models from subscription-based to hyper personalized. The growth potential for such a combination of business models will be exponential.”**

Software: A Driver for Innovation?

Software will accelerate innovation at two levels: internally, by improving processes, and, externally, by supporting customer value creation. Improvements in software automation will allow software developers to more flexibly and frequently deploy data cycles, allowing organizations to better understand usage patterns and, accordingly, change the way they operate. This will help them focus strategically on features/functionalities that people actually use and achieve measurable cost/resource efficiencies.

Software innovations have been critical in reconciling privacy concerns with the need for data access required to provide services. The concept of transient or temporal data—where stored or saved data is more in the nature of fleet or aggregate rather than individual vehicle analysis—is one such barrier-breaking solution.

Having more of the lifecycle data used at different stages through the use of edge computing, where the data is consumed and discarded as close as possible to where it is generated, represents another way to more effectively harness and manage data. **“A lot of work is also happening on designing adaptable software that has the capability to operate on a small footprint or with a very powerful cloud server,”** added Najamuddin Baig, Manager Mobility Services, Nissan North America.

Hunting for Data Talent: Still an Issue in 2021?

There is a talent crunch, particularly in the technical areas of 5G, ML, data science and AI domains. As connected and autonomous use cases increase, 5G—an outstanding solution but one that comes with challenges related to connectivity with the right latency, bandwidth, cost and coverage—will only add to the overall complexities and demands on talent. New business models like subscription services will intensify the hunt for skilled talent.

Currently, larger organizations tend to look outside for data talent, while smaller firms, despite requiring such skilled talent, simply lack the financial resources to hire them.

As experts begin thinking about how they can change the experience inside a car with software, a whole new set of different skills will be needed. Add to this, the need to scale up this expertise to thousands of employees. For companies across the spectrum, an in-house approach will present a more sustainable way to develop and retain data talent. **“Focusing inward, creating the right culture in which to train the people that you have and upskilling them will be more beneficial in the long-term than worrying about hiring talent away from other organization,”** said Michael Coté, Digital Transformation Specialist, VMWare

Data Monetization: Myth Or Reality?

Raw data is becoming increasingly commodified. It will, therefore, be critical to create a combination of data that presents a macro perspective of customer needs (internal or external) with the objective of enhancing customers' core competencies. In this context, data monetization is not just about improving total cost of ownership and reducing overall expenditure, it is also about achieving efficiencies and generating new revenue streams.

Another aspect relates to finding the right use cases, which could range from designing apps that monitor general driving performance to more purpose-built data services for auto insurance companies.

Some companies are adopting an alternative approach. As Basil Soland, Consumer Digital Developer, Volvo Car Switzerland AG, said, **“By offering our customers connected safety features for free, we are leveraging the data to build our brand.”**

Dr. Baumann added, **“Data monetization, per se, is not yet a reality. But, in terms of potential services and optimization of processes, there is already a multiplicity of use cases being assessed.”**

Increasingly intelligent and autonomous vehicles will link to smart city infrastructure such as traffic lights/stop signs/parking meters or will leverage location-based services. Such use cases will accelerate new product and services creation. **“However, if data monetization is to work, all ecosystem players need to move towards data standardization,”** cautioned Baig, **“Questions over data privacy, security and ownership will also need to be resolved.”**

Reaching Inflection Point

Changing customer expectations and CASE technologies are creating unprecedented disruption in the mobility ecosystem. Data and, more importantly, the insights/solutions derived from it, will catalyze growth and innovation opportunities globally. Developing an effective, robust and holistic data strategy will enable stakeholders to more fully leverage the true potential of a connected and autonomous mobility and, thereby, realize a range of favorable outcomes that will contribute to future proofing their business.

Vehicle connectivity is paramount to embrace the potential of data-driven services and to allow autonomous vehicles to operate safely in multiple environments. While 5G is on everyone's radar at present, the industry will need to deploy a combination of technical solutions that may include 5G, Wi-Fi networks and satellite communication, depending on the situations and use cases. Vehicle connectivity will facilitate productivity gains in the aftermarket by helping identify, anticipate and automatically resolve faults in vehicles. It will optimize product/service design and development, enabling faster, more cost-effective commercialization. Further, it will revolutionize customer relationships by incubating innovative, targeted and personalized customer service and capabilities. In short, data-driven approaches will create value, enable strategic differentiation and build competitive advantage.

Ultimately, underpinning all data-driven strategies will be the understanding that data in itself offers little value. True value will be derived from valorizing it through software innovations. Vehicle manufacturers' data and software strategy will not only define the car of the future, but will be an engine for profitability.

“These new companies [Nio, Lucid Motors, Rivian] are telling us they are not car manufacturers—they are software companies!”

- Moorthy, CIO,

Tata Technologies



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