

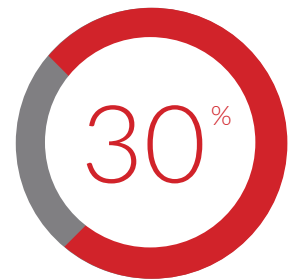
Mobility-As-A-Service (MaaS)

A secure platform for the distribution of transportation applications.

Introduction

The rapid emergence of technology and wireless connectivity has altered consumer transportation behavior, shifting from traditional vehicle ownership to shared mobility. In fact, it is predicted that one out of ten cars sold in 2030 will potentially be a shared vehicle¹ (car-sharing or ride-sharing). Shared mobility penetration will be most prominent in dense and suburban cities who are looking to adapt car-sharing business models. These suburban cities are experiencing a significant influx of population, bringing majority of vehicle travel made in urban environments.

The shift to shared mobility opens an enormous opportunity for automakers to capitalize on new business models for vehicle sales, as well as data connectivity services. The transportation industry is evolving toward creating value-added offerings that enhance the user-experience, allowing for endless monetization opportunity. Despite a shift towards shared mobility, vehicle sales are predicted to continue to grow. However, consumer transportation preferences will shift from one vehicle for all purposes to the ability to choose an optimal means of mobility for each specific purpose. OEMs and partners can capitalize on diverse mobility by monetizing the time consumers spend in the vehicle during drive time, while providing a desired customer experience.



“Potential 30% revenue growth of nearly \$100 billion from data connectivity services, incl. apps, navigation, entertainment, remote services, and software upgrades by 2030.”¹

To capitalize on the growth of shared mobility and services, automakers will need to focus their business practices on becoming integrated mobility service providers. Providing a complete user experience for the lifecycle of the vehicle will be important to help OEMs differentiate their shared mobility service. However, the ability to provide the desired means of transportation while assuring a great customer experience can be challenging to OEMs and their partners.

The mobility-as-a service model

Mobility-as-a-service (MaaS) is a mobility distribution model in which a person's transportation needs can be made available through a common application. The transportation options, including carsharing, ridesharing, and mass transit, are integrated and provided to the person through a smartphone app in which the user can set up the app for a single pay account. The user can select a mobility service that best fits the drive experience they are seeking. For example, if a user needs to get to and from work, they may prefer a ride share service versus driving a vehicle themselves. However, if they are looking to go hiking in the mountains, they might prefer to drive with a car share service, and need a large SUV with all-wheel drive

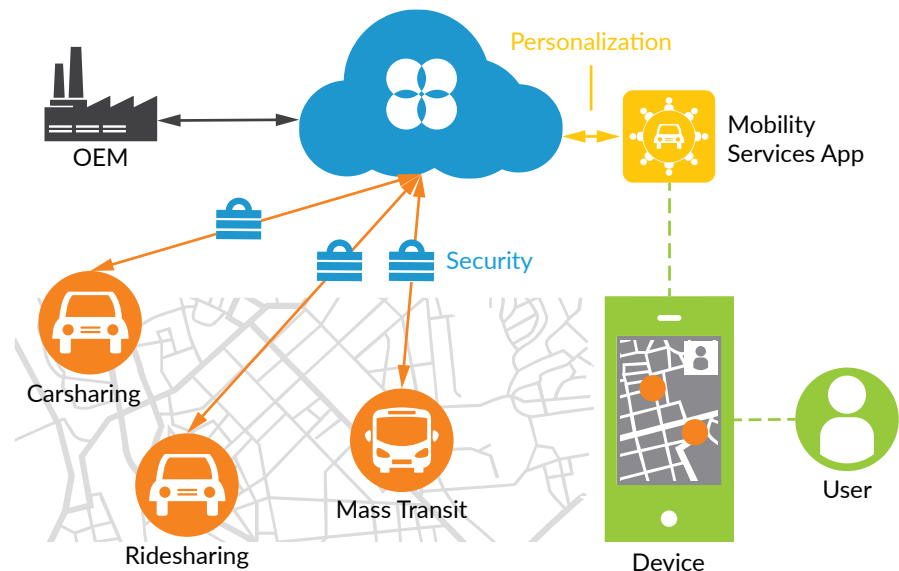
¹Mckinsey & Company: automotive revolution

that can travel off road and haul equipment for the journey. Regardless of the type of mobility service, the expectations will be exceptional connectivity, personalization and security for all users of the service.

The most important impact that new mobility services will have on the automotive industry will be on how customers interact with vehicles, customer connectivity expectations, and how they will use these vehicles. The ability to manage passenger, driver and 3rd party partner expectations will be essential and challenging for OEMs.

- Passengers will expect connectivity and a personalized experience.
- Drivers will want safety, driver behavior monitoring, passenger knowledge, and billing tracking.
- Developers will want the ability to quickly develop and provide the desired user experience.

The in-vehicle experience becomes more than just pure product offering, but rather an exercise of complete ecosystem management. Integrating technology, mobility companies, and 3rd party services into the transportation experience is essential for success.



Challenges delivering mobility services

A successful user experience will hinge on the ability for OEMs to manage the complete ecosystem. Critical to manage for a successful mobile service are:

- Ability to provide the proper connectivity regardless of vehicle location.
- Seamless integration across multiple applications and systems.
- Sufficient response time to user request.
- Assure proper security across stakeholders and geographic locations.

But just as important will be to assure 'ownership' of the driver experience, and maintaining control over the creation and success of mobility services. One must be able to control and manage the many interactions among individual players involved,

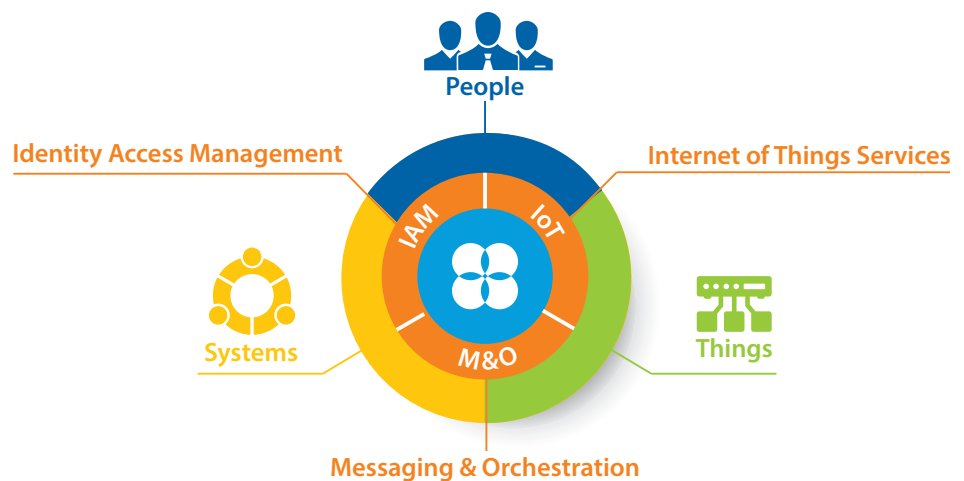
and provide a secure, private, yet flexible solution. Further, understanding local government and state regulations of mobility solutions will be important, especially as it pertains to user security. Each must be addressed to provide the personalized experience the users expect in mobility services.

How Covisint can help enable MaaS

Covisint is a proven leader in B2C solutions for the highly connected automotive world. Our heritage runs deep in securing and managing ecosystems for the automotive industry, including a combined 13 million+ connected vehicles worldwide for General Motors OnStar and Hyundai BlueLink.

The Covisint Platform for connected vehicles knits Identity & Access Management (IAM), Messaging & Orchestration (M&O) and the Internet of Things (IoT) into a cohesive fabric of core competencies, enablement technologies, and knowhow. This helps OEMs easily navigate the complex relationships between people, systems, processes and things.

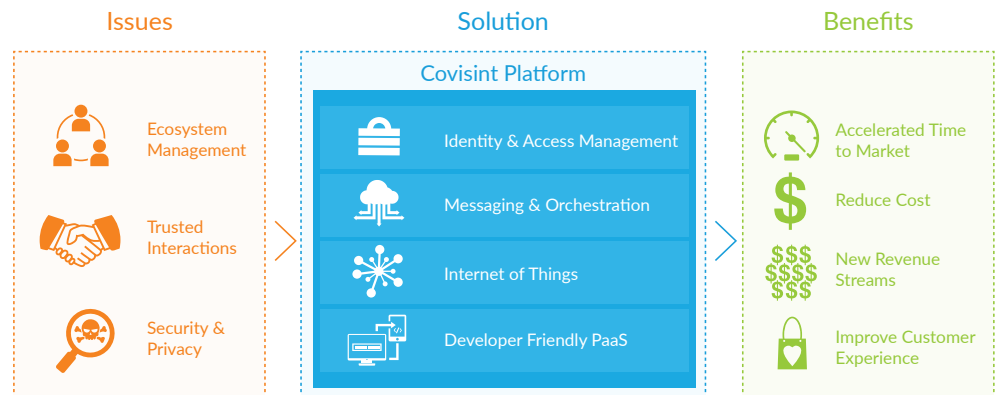
- **Covisint IAM is the security component** – it provides comprehensive identity and access management across the connected vehicle ecosystem and facilitates secure access to critical resources and information.
- **Covisint M&O improves collaboration while mitigating risk** – functionally, it is responsible for information routing, data transformation and the syndication of intelligence across the ecosystem.
- **IoT seamless inter-operable connectivity between people, systems and things** – it includes end-to-end user profiling, relationship and lifecycle management, and messaging across the connectivity chain.



We enable the integration and orchestration of all disparate systems, securely transporting critical data to multiple key stakeholders. Our platform helps increase usability, manage demand, match user-to-vehicle, and govern security. We provide OEMs with the agility to change hardware, capabilities, connections or partners, and is developer-friendly enabling build solutions that quickly and securely identify, authenticate and connect users, devices, and information. This is accomplished through the use of accelerators that allow for rapid deployment of MaaS needs.

The value opportunity

As mobility services continue to grow it unlocks potential value to not only users, but for OEMs, communities, the economy, and other extended transportation entities. We have conveyed the expectations of the customers in mobility as it pertains to personalization and connectivity, but what does this mean to automotive manufactures. Think of the impact an in-vehicle experience can have on a driver or passenger of mobility services. In a recent study by Mckinsey & Company, 41% of US consumers are willing to change car brand preference for connectivity. That first impression of riding in a vehicle as a passenger or driver, can influence future purchase behavior of the user. A poor experience could cost and OEM a customer for life.



We also mentioned that mobility services open-up revenue opportunity for OEMs and their business partners. Not only from partnering with technology and mobility companies to provide mobility services as a new business model, but also in providing added value services for mobility users. OEMs will need to balance the services they charge users for versus those they include with the car share or ride share service. However, the opportunity to monetize the experience is enormous. For example, according to a Census Bureau report, the average drive time across the Nation is 24 minutes per vehicle per day.² It is projected by 2020 that 1 out of 10 vehicles produced will be used for mobility services, with an estimate of 17 million vehicle production, that's a potential 1.7 million vehicles used for shared mobility. If we multiply the minutes of per vehicle commute time by the potential number of mobility service vehicles in use, that equates to 40.8 million minutes of in-vehicle commute time per day across the U.S. A huge opportunity for an OEM to monetize the in-vehicle experience.

Finally, there are overall economic and environmental benefits to car sharing services. By increasing the number of shared transportation services, major cities can provide better urban environments where people and business can thrive. Potentially reducing the number of accidents and fatalities due to less congestion on the roads, and making a cleaner environment by reduced emissions and fuel consumption.

²<http://www.latimes.com/business/autos/la-fi-hy-ihs-automotive-average-age-car-20140609-story.html>
<https://www.thoughtco.com/americans-commuting-over-100-hours-yearly-3320980>

1.7 Million 2020



The wrap

Mobility-as-a-Service is the future of transportation and without much of a surprise, it is essentially driven by seamless user experience and flexibility. MaaS opens opportunity to improve public transportation by making it more relevant and affordable to the user and cost efficient for society. One must be able to provide the right personalized experience for both passengers and drivers, by integrating and managing the in-vehicle experience as well as environmental ecosystems.

The Covisint Platform is a turnkey, strategic enabler for OEMs to safely and securely actualize and monetize the connected-vehicle ecosystems. The platform is comprised of a unified collection of competencies that effortlessly manage connected-vehicle ecosystems of people, system and things. We deliver confidence through our foundational elements of Identity & Access Management, Managing & Orchestration and Internet of Things, all integrated on our developer friendly platform.

The Covisint difference

Covisint offers an infrastructure agnostic, highly scalable, and purpose-built Platform-as-a-Service (PaaS) for unlocking the potential of IoT and identity-centric solutions with accelerators for the automotive world.

Differentiation is in the solution – a cloud-based PaaS unlocks customer and partner led development and faster innovation in the application layer.

Infrastructure agnostic and highly scalable – to meet the privacy, security and performance demands of increasingly global businesses.

Purpose-built – for solutions that connect people, processes, systems and things, enables faster innovation in the platform capabilities and your solutions.

Offered as a cloud service – to drive operational simplification and reduce costs for customers through economies of scale.

See more at Covisint.com/industries/automotive/



2,000+

Global Customers



212K+

Connected Organizations



25M+

User Identities



4B+

Yearly Transactions



\$1T+

in Transacted Business



Covisint is the connected company – we securely connect ecosystems of people, systems and things to enable new service offerings, optimize operations, develop new business models and ultimately enable the connected economy. Today, we support more than 2,000 organizations and connect to more than 212,000 business partners and customers worldwide.

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