APIs Fueling the Connected Car Opportunity
Introduction: Delivering Connected Car Value Through APIs

Maximizing Customer Engagement & Backend Management

The “connected car” market is forecasted to reach $219 billion by 2025\(^1\). The convergence of the app economy, increased connectivity, the Internet of Things (IoT), growth of in-car screen displays and open enterprise data models is giving automotive manufacturers and their partners a wealth of opportunities to improve service delivery and backend supply-chain management.

The connected car offers manufacturers and dealers ways to deliver a better consumer experience post purchase and will prove strategic to developing consumer loyalty in the long term. Today’s connectivity technologies empower the automotive sector to deliver increased value via a number of innovative features, including:

- The ability to remotely start or unlock a vehicle
- Real-time diagnostic information to prevent minor issues from turning major
- Connection with insurance companies to take advantage of “good driver” discounts
- Integration with car part suppliers in order to better manage inventory

Meeting the Integration Challenges of the Connected Car Ecosystem

The complexity of the connected car ecosystem creates a range of new development, integration and security challenges. Automotive connectivity requires manufacturers to integrate with the IT systems of a broad set of industry, service, infrastructure, regulatory and technology partners.

The application programming interface – or API – represents the connectivity point that makes this possible. The API exposes application functionality and data in developer-friendly formats, making it possible to accelerate the development of apps that connect vehicles, mobile devices and online identities.

However, exposing enterprise systems in this way creates its own security and management challenges, including efficiently externalizing data and functionality via APIs, and securing these interfaces against attack and hijack. Providing seamless access for authorized users is also difficult, as is optimizing the speed and reliability of transactions, and onboarding and enabling app developers.
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Today’s consumer wants to engage with car manufacturers and dealers through the consumer’s preferred channel of choice, which increasingly means Web or mobile.

Consumers expect a seamless experience across channels. For enterprises, fulfilling this expectation facilitates immersive, personalized engagement with brands.

Understanding how customers behave early in the sales cycle provides vital information for future product development and marketing efforts.
Delivering engaging, frictionless Web and mobile experiences has become central to how companies across industries optimize customer acquisition and retention.

Automotive companies need to develop dynamic mobile apps that market their products directly to prospects and customers in an engaging, non-intrusive manner.

To make these apps as frictionless as possible, developers must be able to integrate with social media, particularly to leverage social identities for seamless login.
Using an API gateway to securely expose valuable backend information assets as APIs speeds the creation of apps that offer real value to prospects and customers.

An API management solution that enables unified access across Web and mobile will ensure consumers maintain a personalized experience over their channels of choice.

A solution that allows integration with social identities from popular networks such as Facebook and LinkedIn will maintain convenient access across both channels.
Remote Auto Companion Apps
Deliver Anywhere, Anytime Driver-to-Car Connectivity
Remote Auto Companion Apps

Why?
Extend In-car Functionality to Mobile Devices

What?
Allowing Remote Access to Cars Via Mobile Apps

How?
Enable App Developers and Ensure Secure Access

Learn More
EBook: 5 OAuth Essentials for API Access Control
Create a framework for implementing OAuth-based access control

After buying a car, today's connected consumer expects a more positive ongoing experience with its manufacturer.

The app economy, combined with improved mobile bandwidth and IoT technology, is providing powerful new opportunities for car manufacturers to offer premium post-sale services.

Mobile apps make it possible to simultaneously simplify and extend interactions with products, creating an optimal post-sale experience.

“GM owners request remote door unlock assistance… more than 60,000 times each month, so it makes sense for us to… enable customers to lock, unlock or start their vehicle from anywhere.”

2 GM to Make Door Unlock, Remote Start Standard, GM
Remote Auto Companion Apps

Why?
Extend In-car Functionality to Mobile Devices

What?
Allowing Remote Access to Cars Via Mobile Apps

How?
Enable App Developers and Ensure Secure Access

Now, mobile apps can be created that allow the driver to connect remotely to their car to access data and control functionality anytime, from anywhere.

To take advantage of this, a manufacturer must be able to internally create apps that truly differentiate the post-sale service it offers.

These apps should deliver premium capabilities like remote lock/unlock/start and diagnostics while maintaining the security of the vehicle without affecting usability.

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Deploying an online API portal through which developers can register, discover and leverage APIs will speed app development and maximize app quality.

Manufacturers should also look for an API security solution that includes SDKs, which make it possible to build end-user authentication directly into the mobile app itself.

This solution should also use key standards like OAuth so that apps can provide convenient, secure access via Single Sign-On, step-up authentication and fine-grained access control.

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In-Car Infotainment Apps
Accelerate In-Car App Development and Delivery
In-Car Infotainment Apps

Why?
Consumers Are Accustomed to Connectivity

Today's connected car app economy is on the brink of causing a major market disruption, not unlike where the mainstream app economy was at a few years ago.

So, just as today's consumer requires anywhere, anytime connectivity from their phone, tomorrow's consumer will require this level of connectivity from their car.

Car infotainment systems already offer much more than simple stereo receivers ever did. Soon, they could be used to enhance every aspect of the driving experience.

What?
Building an Ecosystem of Dynamic In-Car Apps

How?
Enable and Manage Third-Party Developers
In-Car Infotainment Apps

Why?
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What?
Building an Ecosystem of Dynamic In-Car Apps

How?
Enable and Manage Third-Party Developers

A manufacturer must be able to deliver in-car apps that differentiate its offerings from the competition.

To maximize innovation and minimize time-to-market, the manufacturer should offer external developers the tools they need in order to develop apps that run directly within the vehicle’s infotainment system.

These apps should provide the driver with in-car connectivity to key data and functionality, including navigation, entertainment and diagnostics.
To open backend functionality to external developers without hindering security or performance, developers need a solid API security and management solution.

To ensure third-party apps function smoothly, API and developer lifecycles should be managed separately, which enables a variety of apps to connect with different API versions.

An API portal will prove particularly crucial to effectively building, enabling and managing an active ecosystem of third-party developers.
Automotive Commerce

Ensure Convenient and Secure In-Car Commerce
Automotive Commerce

Why?
Consumers Want to Make Purchases From the Car

What?
Integrating With Partners to Create Ecommerce Apps

How?
Mediate Data Interactions to Ensure Reliable Services

The connected car creates the opportunity to deliver wireless connectivity, usage-based insurance and other services, like product advertising, directly to the vehicle.

As customers become accustomed to in-car connectivity, they will start demanding the ability to access and purchase products and services directly from the vehicle.

Manufacturers have much to gain from partnering with insurance providers and advertisers that want to deliver offers and ecommerce interfaces straight to the car.

“Nearly 90% of survey participants were open to buying a UBI [usage-based insurance] policy in the US if there is no risk of premiums increasing.”

Learn More
EBook: 5 Simple Strategies for Securing APIs
Adopt a secure API architecture to counter API-specific threats

3 Usage-Based Insurance: US Consumer Survey, Towers Watson
Why?
Consumers Want to Make Purchases From the Car

What?
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How?
Mediate Data Interactions to Ensure Reliable Services

In-car ecommerce apps can be created that enable consumers to purchase 4G, UBI policies and retail products directly from the car.

These apps must offer secure data integration between all parties, protect sensitive consumer data and meet key standards (such as PCI-DSS) and regulatory requirements.

The apps should also provide valuable consumer data to insurance companies and retail partners while protecting user privacy.
An API gateway should enable the creation of a “data lens” that securely externalizes key driver data—such as payments, driver profile, and car location—to the manufacturer.

A full-functioned gateway will make it possible to integrate and mediate transactions between the car, enterprise and partner to provide secure, reliable services.

And again, an API portal will be an important part of the overall solution, enabling internal and third-party developers to easily leverage these secure integrations.
Fleet Management & Maintenance

Optimize Routes, Fuel Economy and Maintenance
Why?
Consumers Want to Make Purchases From the Car

What?
Integrating With Partners to Create Ecommerce Apps

How?
Coordinate Data Sharing Throughout the Value Chain

Demand is growing across transportation, government, retail and utility sectors for improved logistics and fleet management systems.

The convergence of apps, connectivity, IoT and APIs is creating an opportunity to improve services and better manage costs for the enterprise and consumer alike.

By optimizing logistics in this way, enterprises can provide better customer service and maximize the cost-effectiveness of essential operations.

Markets & Markets recently reported that the fleet management market is likely to be worth $28.66 billion by 2022.4

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4 Fleet Management Market, Markets & Markets
The connected car can help enterprises and consumers optimize routes, track fuel economy, log mileage and record trip times.

Smart manufacturers will take this opportunity to coordinate data sharing throughout the value chain: traffic management systems, part suppliers, fuel partners, etc.

To do this without risking data compromise will require secure connectivity between the fleet, car telematics systems, backend data repositories and partner systems.
Fleet Management & Maintenance

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Learn More
White Paper: Choosing the Right API Management Solution
Discover key characteristics of an effective API Management solution

A gateway-based API Management solution simplifies the process of externalizing functionality for fleet tracking, traffic management, inventory and auto supply.

A gateway also has the features needed to secure exposed APIs against external threats and unauthorized access.

For fleet management, the API portal would be used to accelerate the creation of effective administrative fleet-tracking companion apps.
Conclusion: API Management for the Connected Car

The connected car has become a top-agenda item in the automotive industry. Enterprises today must be able to adapt and execute on opportunities created by emerging technologies—or risk losing business to more agile competitors.

The connected car presents manufacturers with new opportunities to differentiate, strengthen relationships, build customer loyalty and deliver value throughout the entire automotive value chain. These companies must appropriately prioritize business goals, appoint digital leadership, acquire the necessary skill sets and choose the right digital platform.

The right digital platform accelerates time to market, supports the development and version control of apps and services, and delivers an optimized user experience inside and outside the vehicle. It will do all this while making safety the number one priority through proper security controls. The API has emerged as the key component of this digital platform.
To realize the full value of APIs and avoid the safety and privacy pitfalls of exposing backend systems, it is vital to invest in an API management solution that delivers the full range of functionality for service composition, security, identity and access, performance optimization, lifecycle management and developer engagement.

CA API Management provides all the components required for effective, enterprise-level API management. The CA API Gateway simplifies all key API security and management processes, and the CA API Portal enables effective developer onboarding and management. With CA API Management, you get:

- A choice of on-premises, cloud or hybrid deployments
- Military-grade data and application security
- API usage and performance analytics
- Application adaptation and interface management with advanced connectivity
CA API Management provides enterprises with a comprehensive set of solutions that externalize APIs in a secure, reliable and manageable way.

To learn more, visit ca.com/api