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For the majority of drivers, commercial transactions have traditionally formed a key part of the ownership experience. Today, these transactions serve a variety of purposes outside the vehicle – from gas and petrol payments to service and maintenance costs. In the future, connectivity services will continue to develop alongside new automotive technologies and systems – allowing for greater commerce opportunities inside the vehicle.

OEMs, suppliers, and even tech giants like Amazon have only recently begun to leverage infotainment systems to carry out in-vehicle payments. While some key players in the EV ecosystem have provided similar solutions, many are investigating the commerce opportunities of autonomous vehicles. The increased adoption of automated driving systems has already raised the potential for new service types, including gaming and video streaming, and new revenue streams as more OEMs conceptualize the vehicle as a third living space.

The In-Vehicle Commerce report presents the most important use cases from the ecosystem for in-vehicle commerce and highlights the role tech giants are expected play within it. Also highlighted are the OEMs and suppliers offering commerce solutions in their vehicles today. A five-year forecast further understands how the ecosystem for in-vehicle transactions is expected to grow and identifies the factors that could influence this growth.



Key questions answered

- > What new use cases are emerging for in vehicle commerce?
- > How is the eco-system for invehicle commerce evolving?
- > What role are Tech Giants like Amazon likely to play?
- > How fast will in-vehicle commerce grow?

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Introduction

Introduction

The vehicle has traditionally been at the center of various commercial transactions, such as gas and parking payments. But only recently have OEMs and other players (e.g., Amazon) attempted to facilitate in-car payments via IVI systems. As vehicles become more autonomous, other in-vehicle commerce opportunities are emerging, such as gaming and video streaming. This report analyses the market opportunity and trends for in-vehicle commerce.

The report outlines strategies for commercializing third-party content and services and is broken down into six main sections, shown to the right. These examine key motivators for stakeholders, six success factors, a deeper dive into the technology stack, consideration of some leading use cases, a forecast roadmap and finally summary recommendations.

The broad scope of in-vehicle commerce covers all financial transactions carried out within or via the vehicle, for example via the IVI or via the OEM companion app. The scope of this report excludes smartphone-based transactions and FaaS/SaaS transactions.

SBD would like to extend our sincere thanks to the five companies that agreed to take part in interviews which helped to inform and guide this report:



Section	Content
Motivations	Key motivators for each of the leading in-vehicle commerce stakeholder groups.
Success Factors	Identification of six success factors which recur throughout the report.
Technology	Analysis of different parts of the technology stack required to enable in-vehicle commerce.
Ecosystem	Eight use cases with example implementations, obstacles, high-level ecosystem diagram and minimum requirements for success.
Market Outlook	Roadmap and five-year forecast for adoption and revenue opportunity.
Recommendations	Stakeholder-specific recommendations on how to succeed at in-vehicle commerce.



Example slides from the report



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What are the critical factors for a successful implementation?



Motivations: Automotive-linked tech giants

Automotive tech giants are defined as those that have a mobility and automotive focus, are broad in their products and services and are very big, globally or within the China market.

Offering an in-vehicle commerce facility, particularly as part of a wider infotainment offering, can provide tangible benefits to automotive-linked tech giants, including:

- **Introducing new customers:** automatic buy-in to the tech giant's ecosystem for new customers purchasing a relevant vehicle.
- Increasing reach and intelligence: increased touchpoints across existing customer-base leads to deeper knowledge of customer behaviour and interactions.
- More attractive offering for OEMs: in-vehicle commerce functionality can add value to a wider embedded offering, potentially making it a more attractive option for OEMs.



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Success factors: Effective interfaces

Effective interfaces are critical for a pleasing, low distraction and frictionless user experience. Historically, poor implementations have contributed to low penetration and eventual failure of in-vehicle payment solutions.

The interface must be optimized for the simplest possible interactions at every step including:

- Installation (if required)
- Initial user authentication and payment setup
- Merchant payment authorization (including allowing passive payments)
- Ongoing transactions

In-vehicle payments will be conducted primarily via voice, on-screen interactions or a combination. The method of interaction should be appropriate for the task in hand, for example choosing from a restaurant menu is likely to require a visual element, whereas ordering a daily coffee should be possible using voice alone.

Data flow of in-car commerce service

The flow chart below describes the high-level process for end customers to use IVC, covering the operation and actions of the complete cycle to demonstrate the data flow.



Use case 7: Repair & maintenance

Description

Repair and maintenance requirements are most likely to be linked to recommended service interval or triggered by a diagnostics or prognostics system detecting a potential issue with the vehicle. When the system is triggered, the customer will be given the option to book a fixed price service or visit a service center for diagnostics/repair of a detected issue. The fixed price service payment can be completed at the time of booking, while other payments may be completed later via in-vehicle payments or in person at the service center. Alternatively, a third-party service center may be used.

Example implementations

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Tesla supports service booking in the companion app and payment can be made via Tesla account using the app on completion of the service.



Many OEMs in the China market offer in-vehicle purchase of maintenance packages, including BMW, Tesla

Obstacles

• This use case works well for known-value payments but is less effective for unknown outcomes, which may still be more effectively handled by conventional payment methods.

Conclusion

This is expected to be an infrequent transaction; therefore, it may be best triggered by an event rather than permanently available in the IVI.



A 3rd party service center may optionally be used instead of the OEM

Minimum requirements for success





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Do you have any questions?

If you have any questions or feedback about this research report or SBD Automotive's consulting services, you can email us at info@sbdautomotive.com or discuss with your local account manager below.



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