Requirement Analysis

Customer Journey map:

Solution Requirement:

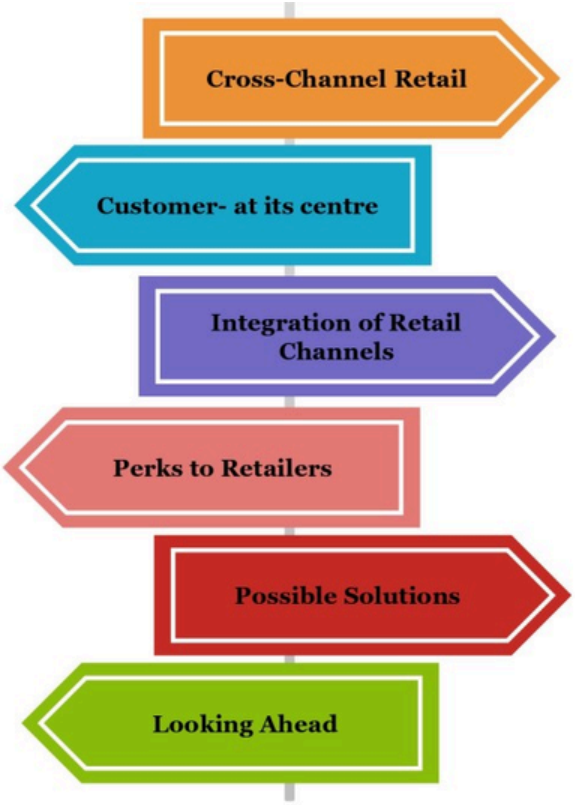
Functional Requirements

S.No.	Requirement	Description
1	Catalog Management	Add, update, delete, and manage car details and media.
2	Search and Filter	Search cars using filters like brand, model, price, fuel type, etc.
3	User Management	Role-based access, login/logout, password reset, user activity tracking.
4	Customer Interaction	Capture customer preferences, enable test drive bookings and queries.
5	Automated Alerts & Notifications	Notify users about promotions, inventory status, or customer inquiries.
6	Reporting and Analytics	Generate reports and dashboards for car inventory, sales, and performance.
7	Integration Support	Integrate with CRM, third-party platforms, and mobile apps via APIs.

Non-Functional Requirements:

S.No.	Requirement	Description
1	Scalability	Support increasing number of cars, users, and multiple showroom branches.
2	Performance	Fast load times (≤2 seconds); support concurrent users.
3	Security	Data encryption, access control, secure login, and privacy compliance.
4	Usability	Simple, intuitive UI/UX; mobile responsive design.
5	Reliability	Ensure uptime ≥99.9% with backup and failover mechanisms.
6	Maintainability	Modular system architecture for easy updates and troubleshooting.
7	Compliance	Follow data protection regulations (e.g., GDPR, local IT laws).

Data Flow Diagram



Cross-Channel Retail

A planned approach that involves collaboration and integration across different retail channels and multiple retailers.

Customer – Centric Approach

To enhance overall customer experience with seamless and integrated shopping journey across various channels.

Integration of Retail Channels

Access to same product, promotion, and information, to create a seamless and unified shopping experience.

Benefits for Retailers

Allows to reach a wider audience, gather valuable data, and enhance engagement and loyalty.

Challenges and Solutions

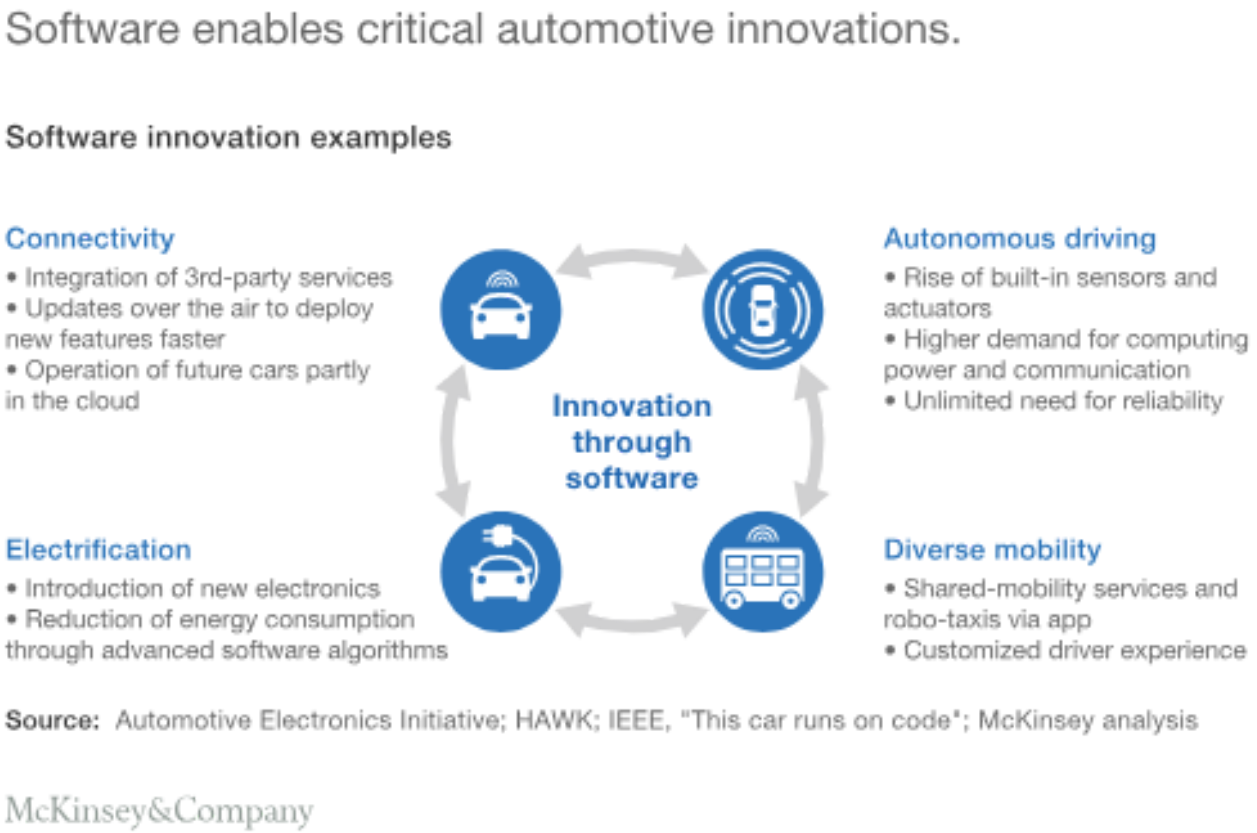
Data security, Interoperability issues, and need for standardized protocols.

Future

Retailers who embrace this strategy and adapt to the changing needs of their customers will be well-positioned to thrive in the digital age.

Technology Stack

Architecture:



🔹 Frontend (Client Side)

Component	Technology
UI Framework	React.js / Angular / Vue.js
Styling	Tailwind CSS / Bootstrap / Sass
State Management	Redux / Context API
Forms & Validation	Formik / Yup
Routing	React Router / Angular Router
Device Support	Responsive Design (Mobile & Desktop)

🔹 Backend (Server Side)

Component	Technology
Server Framework	Node.js + Express / Django / Spring Boot
Language	JavaScript/TypeScript, Python, Java
REST API	JSON-based RESTful API / GraphQL
Authentication	JWT (JSON Web Tokens), OAuth2
Email & Notification	Nodemailer / Twilio / Firebase Cloud Messaging

References:

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