IT revolution in the automotive business

three transformative pillars

smart vehicles

Our cars are powered by advanced sensors, processors, and cloud connectivity

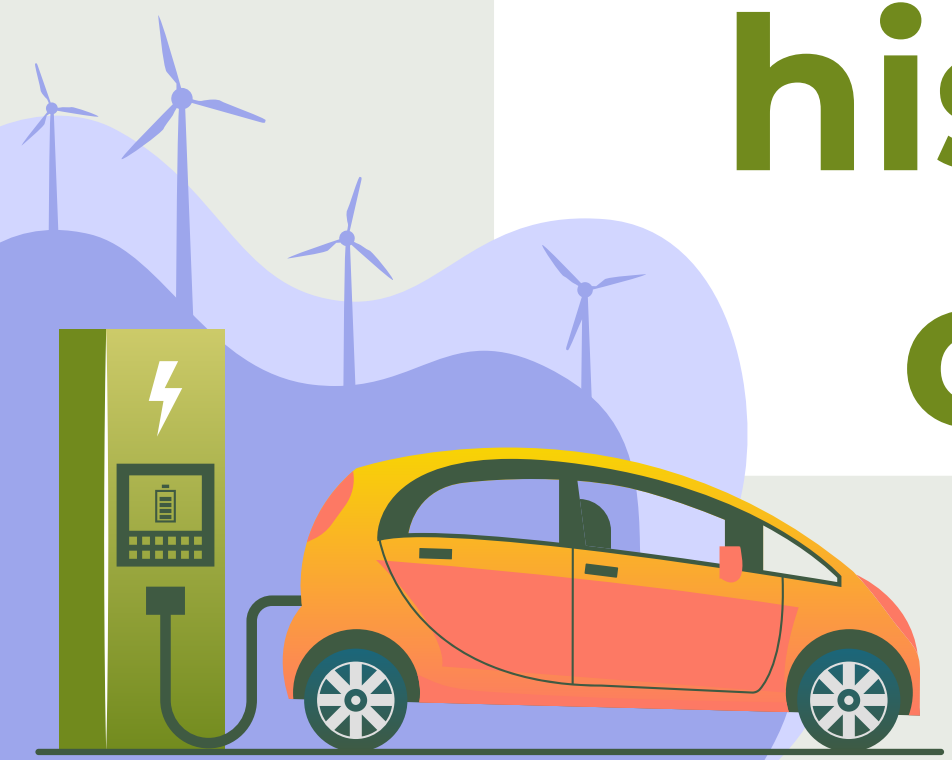
infotainment systems

They transformed cars into hubs of connectivity and entertainment.

emerging future trends

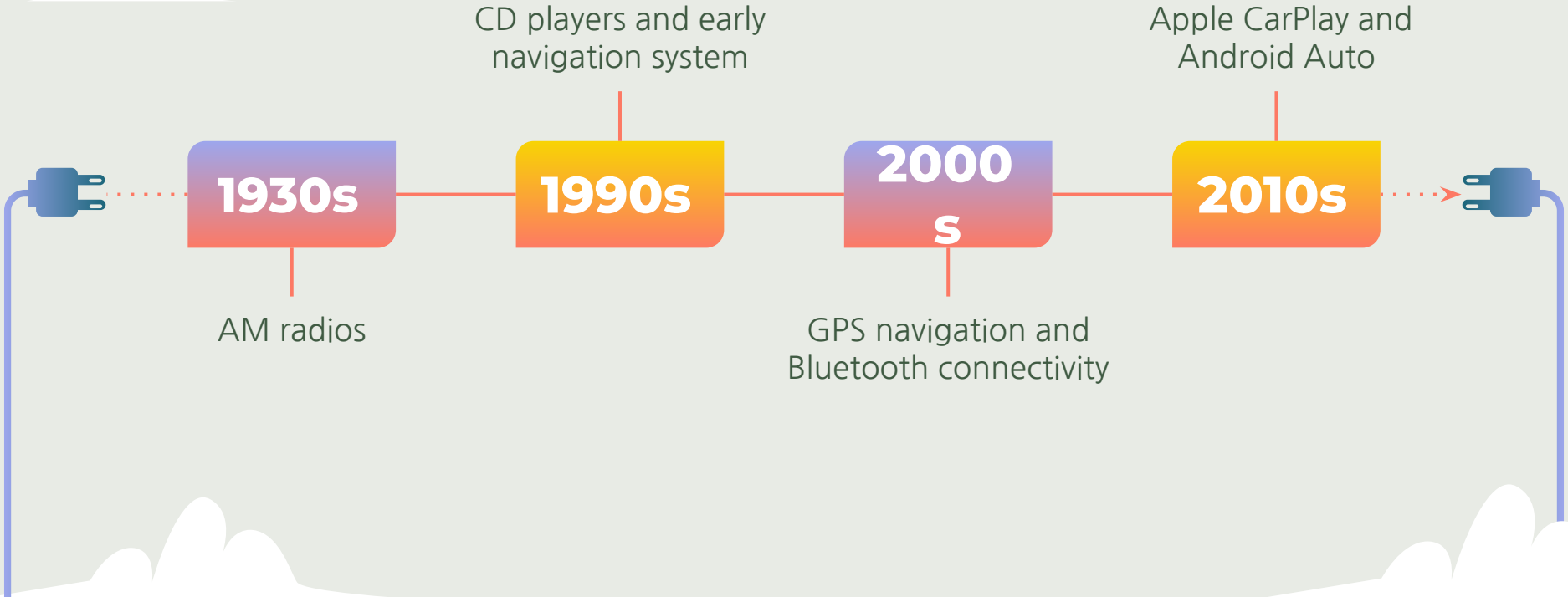
Autonomous vehicles, blockchain-powered data security, and Mobility-as-a-Service (MaaS)

historical context

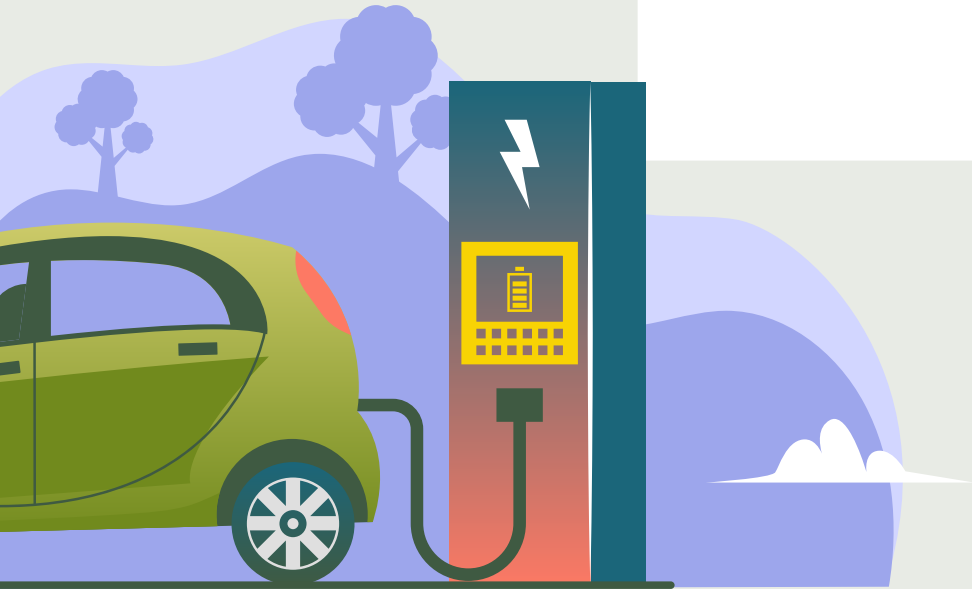


early IT adoption in the automotive Industry

evolution of infotainment and connectivity



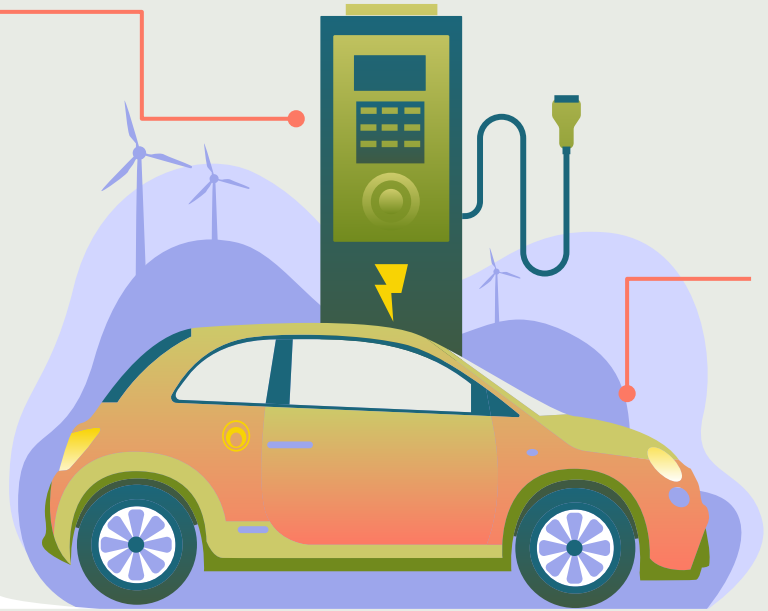
smart and connected vehicles



IoT in cars and Over-the-Air (OTA) updates

IoT

enables cars to communicate with each other, external devices, and cloud systems



OTA

these updates cover everything from navigation systems and infotainment upgrades to bug fixes and even critical safety patches

vehicle-to-everything (V2X) communication

V2V
exchange information with other vehicles

V2P
with pedestrians

V2I
with infrastructure like traffic lights

V2C
with the cloud

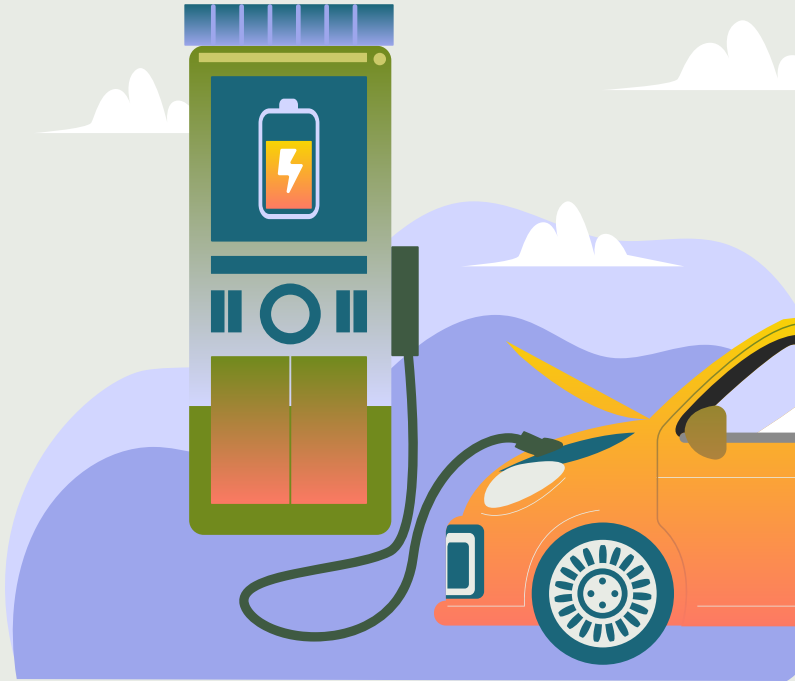
WHOA

infotainment revolution

ai integration and user experience challenges

ai integration became a major driver of innovation. in-car ai now powers features like voice recognition, personalized recommendations, and predictive navigation

for instance, AI-driven voice assistants allow drivers to control their car’s functions hands-free, making the experience safer and more intuitive



autonomous driving

autonomous driving: current limitations and challenges

technology's reliability

even the most advanced ai systems struggle to handle the complex, dynamic environments on the road

regulatory approval

challenges in convincing regulators and consumers that fully autonomous driving is safe

safety concerns

difficulty of ensuring that autonomous vehicles can make real-time decisions in unpredictable situations

public trust

the public is not yet fully comfortable with the idea of vehicles driving themselves in everyday scenarios

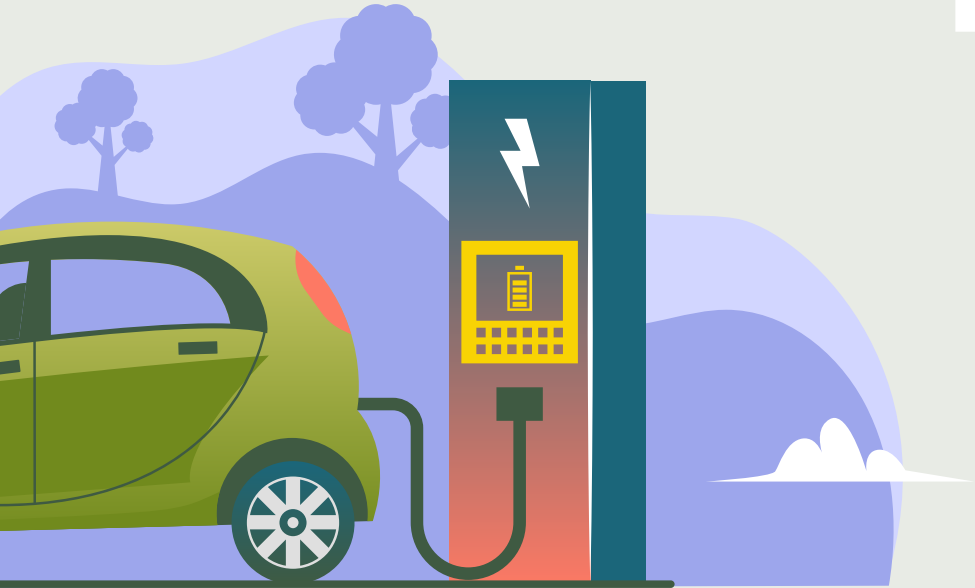
IT enabling ride-sharing and car subscription models

mobility-as-a-service (MaaS)

impacts on traditional car ownership

mobility-as-a-service (MaaS)

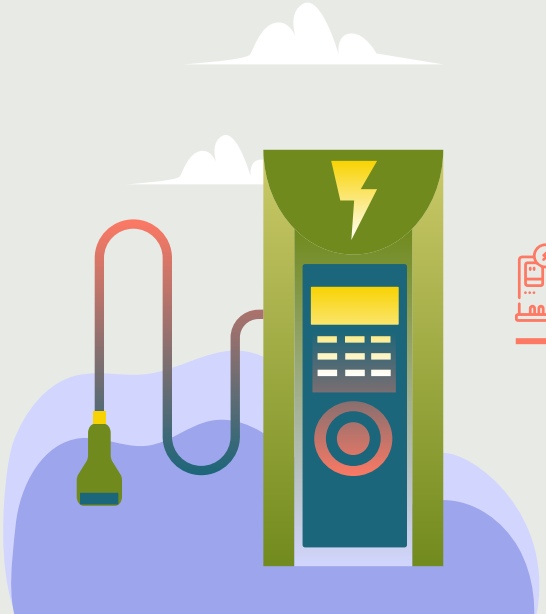
challenges and opportunities



challenges

high costs of innovation

autonomous driving, electric vehicles, and connected systems requires significant investment in research, development, and testing



privacy

vehicles collect vast amounts of data about drivers, their habits, and their locations

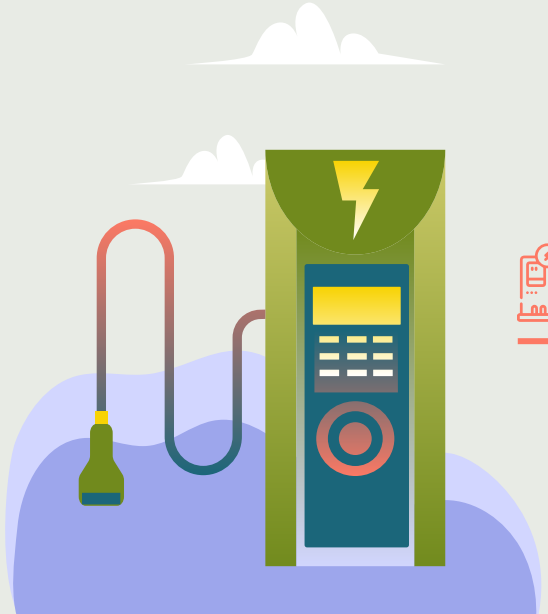
cybersecurity

ensure vehicles are safe from cyber threats while maintaining connectivity

opportunities

quantum computing

solve complex problems that current computing power cannot, such as optimizing routes in real-time



personalization

developing systems that are not only intuitive but also capable of offering tailored services

blockchain

prevent fraud and improve accountability

key takeaways

thanks!

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