

AWS
re:Invent

IOT217-S

Making the CASE: Cloud-based innovation in the automotive industry

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Transportation today

Most traditional forms of transportation from conventional vehicle ownership to public transit are fraught with friction and inefficiency.

This is forcing us to **re-think every aspect of how transportation systems are designed and built** in a new era of connected mobility.



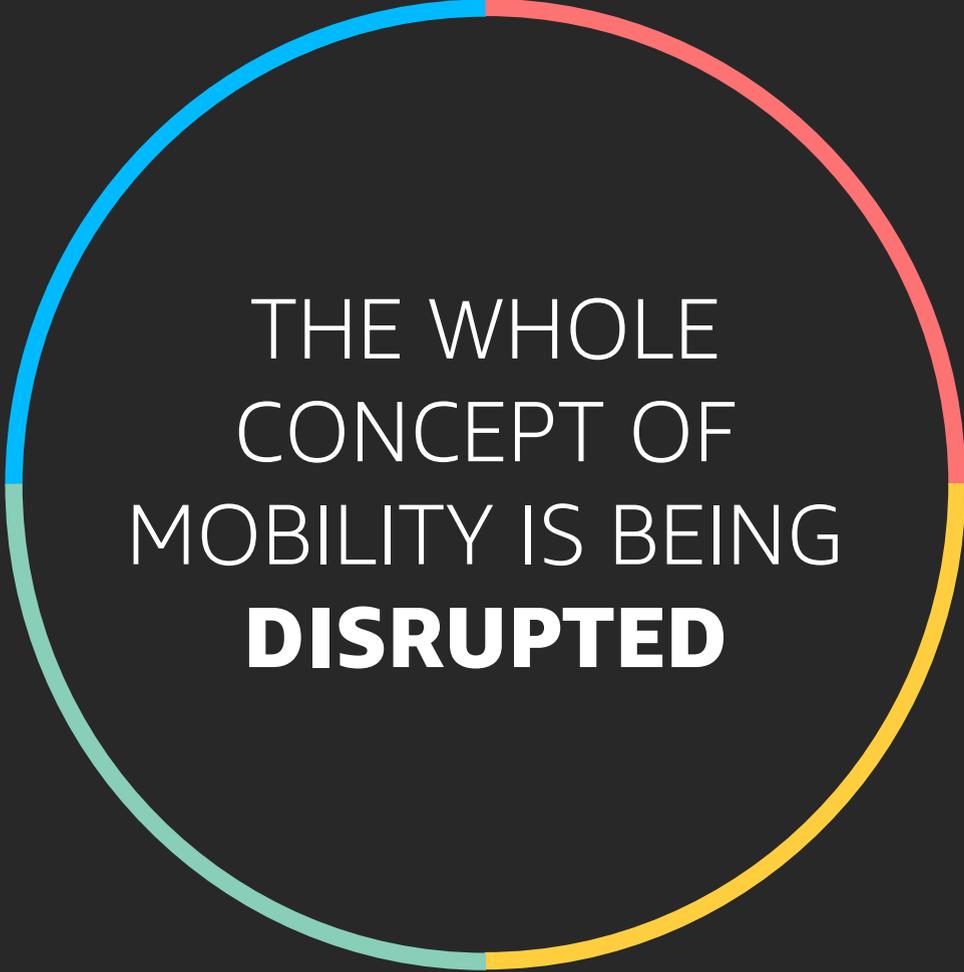
What's driving these changes?

Travel pain points

Increasing pollution, overcrowded cities (30% of traffic is parking), and other factors are creating stress for people going from A to B

Increasing expectations

People expect mobility to be seamless, tailored, affordable, instantaneous, and to come with privacy and comfort



THE WHOLE
CONCEPT OF
MOBILITY IS BEING
DISRUPTED

Monetization

Ecosystem players are exploring new ways to make money, and many may have nothing to do with movement; e.g., data analytics to create insights for cities and real estate developers

New technologies

Advances in machine learning, electric, and connected vehicle technologies will be coupled with on-demand tech in every sphere

Four megatrends are disrupting the automotive industry



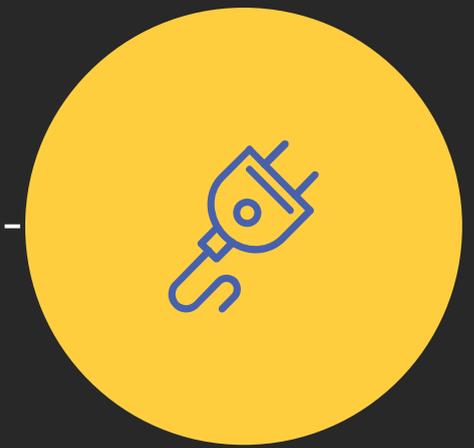
Connectivity



Autonomous
driving



Shared
mobility



Electrification

Imagine...

...a world full of seamless options to help you get from A to B the way you want...
a portfolio of vehicles and service models from private ownership to split-cost ride sharing...
personal mobility AI that can plan your journey based on your needs...
and one payment interface to manage it all

94% of transportation executives are experimenting with advanced digital technologies to bring pieces of this new vision to life – and AWS can be the central enabler in the journey



What opportunities does CASE create?

Connected

Software-driven



Data & analytics



Personalization



Integrated services



Unique experiences



Enabling technologies



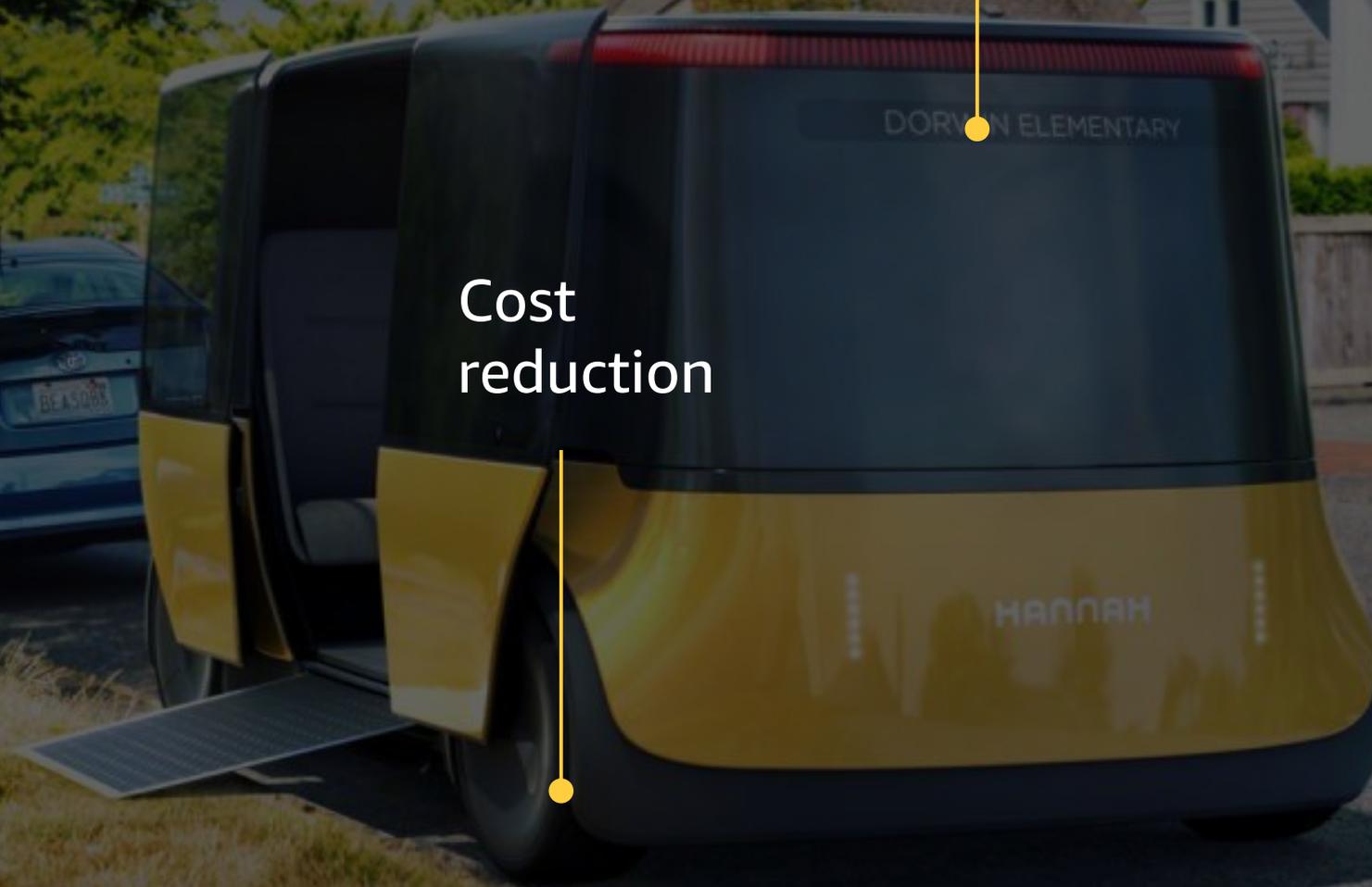
Autonomous

Safety
improvements

Increased
uptime

Cost
reduction

Time &
freedom



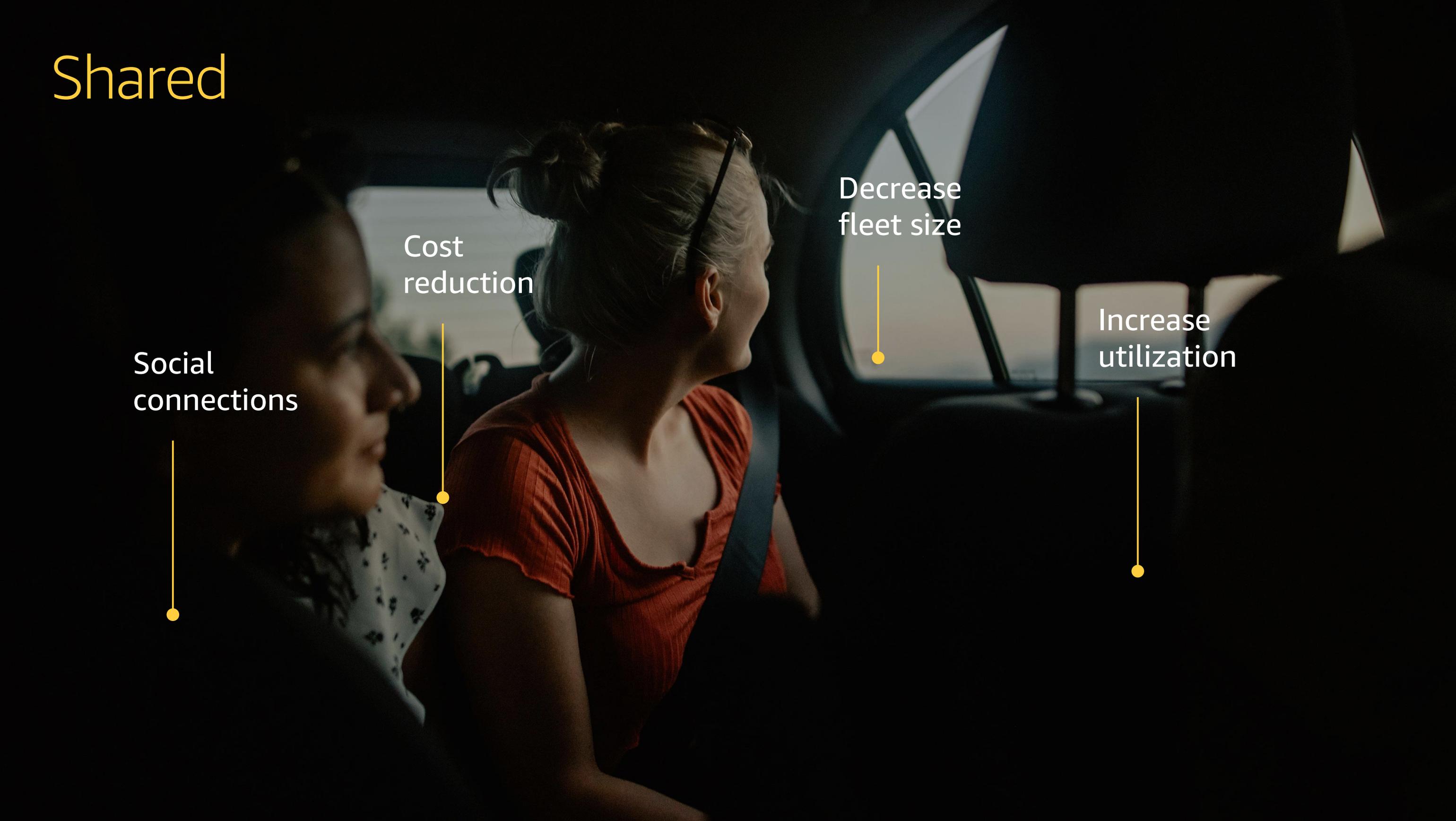
Shared

Social
connections

Cost
reduction

Decrease
fleet size

Increase
utilization



Electric



Zero emissions

Range optimization

Trip planning

Convenience

Utility incentives

CHARGING
STATION
ELECTRIC VEHICLE ONLY



CASE mobility addresses major society pain points



More quality time

4.5 years will be given back to users once they don't need to drive anymore



Less cost

70% cheaper ride hailing in shared/autonomous mode; automotive mobility and public transport merge



Less pollution

40%–60% emissions decrease due to higher vehicle occupancy



Equitable access

Today, **only every second** inhabitant of industrialized nations is with car access



Increased safety

94% reduction in traffic accidents: about 300,000 saved lives per decade in the US alone

What mobility solutions can we build?

The mobility opportunity, visualized



Vehicle portfolio



Portfolio variety



Electrification



New/alternate modes (e.g., eBike)



Bus/shuttle



Mass transit

Monetization & value



Sponsored trips



Context-aware marketing



Open vs. private networks



Cost-sharing



Multi-modal/multi-service



Incentives & gamification

Enabling Technologies



Mobile device integration



Wearable/IoT integration



Connectivity



Vehicle approach & access



In-vehicle personalization



Social networks & sharing



Autonomous



Artificial intelligence



Augmented reality



Cloud services



Fleet management



Big data & analytics

Service models



B2C vehicle reservation



P2P vehicle share/swap



Pooled routing



Ride-sharing & on-demand taxi



City



Residential programs



Data networks (5G)



Dealerships & service centers

Infrastructure



Traffic



Electrical charging



Parking

Cloud-enabled experiences in the mobility ecosystem



Voice assistance & personalization

Convergence of AI, analytics, and voice interface to establish a relationship with your vehicle that is truly helpful, meaningful, and personal. Especially when there is no longer a human driver in autonomous taxis, how does the vehicle interface offer the experience needed to establish trust and comfort with the rider?



In-vehicle commerce and transactions

Buy movie tickets, order food, preorder shoes all before you arrive at the destination. Create smooth and seamless shopping experiences between vehicle and retail endpoints to minimize friction and maximize enjoyment. Transact securely through your personal digital wallet without reaching for your pocket.



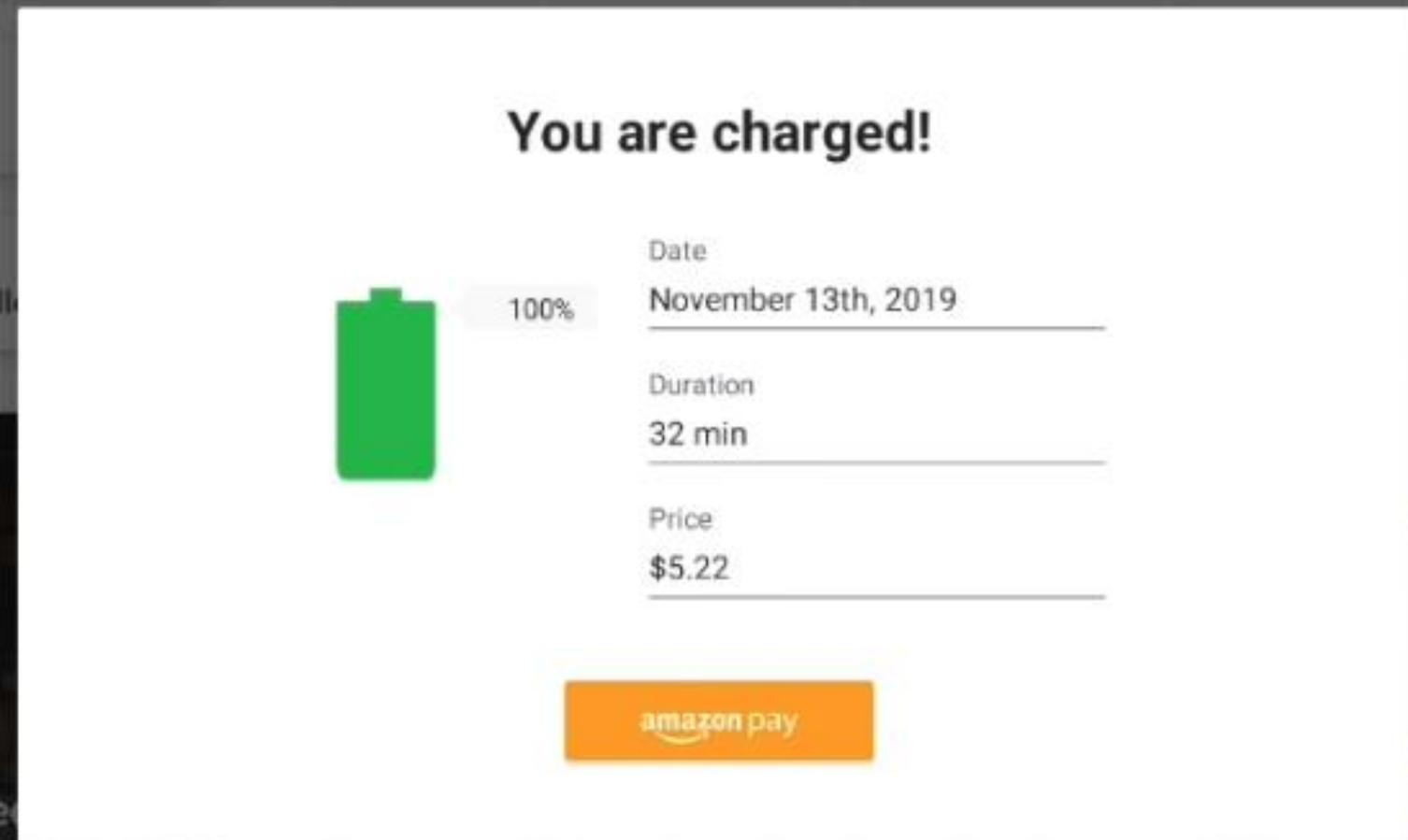
Multi-modal integration for the first/last mile

Sometimes, the car isn't the best way to get there. But it can always be an important part of the journey. Connect with other mobility solutions from the center stack to ensure that you arrive on time. Find parking, locate a nearby bike-share, or buy your train ticket. Let your car help you decide which option best meets your time, cost, or experiential needs.

How AWS enables the new mobility future

AWS plays a critical role in driving the transformation in the new mobility ecosystem by offering a secure and scalable platform for deploying new connected products and services.

Let's show you an example of something we're working on...



You are charged!

Date	November 13th, 2019
Duration	32 min
Price	\$5.22

amazon pay

Demo

Wayne Marley

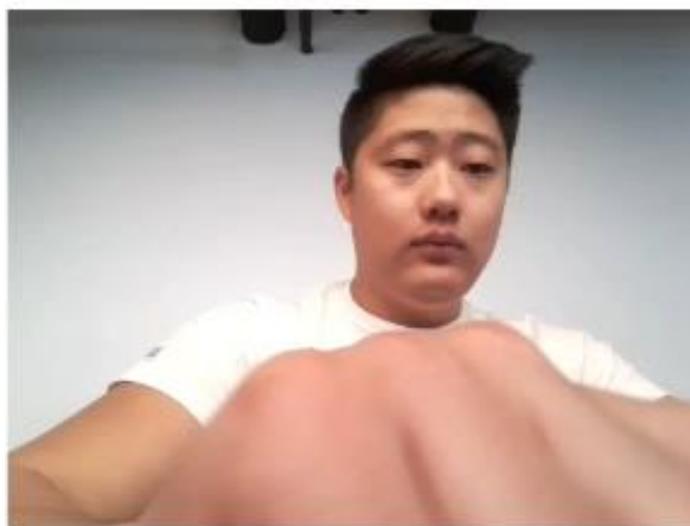
Managing Director, Industry X.0

Accenture



aws

**Smile! We are going to
take your picture**



CAPTURE

We are going to personalize your experience

Look into the camera and smile!



RECOGNIZE

In the autonomous future, what will our relationship with the vehicle be when a vehicle can drive itself?



Can AV meet our expectations of a human driver?

Maintain the condition of the cabin

Keep an eye on passenger activity in the cabin

Alert me to upcoming stops, route changes, unexpected maneuvers

Change destination, route, or stop, and still provide me the assurance of vehicle safety and the route we're taking

Make sure I didn't leave anything behind

Answer any potential questions about themselves, the vehicle, or the route

Keep me company; engage in interesting conversation



INPUTS



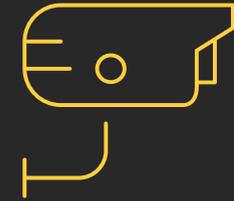
Mobile



Touch



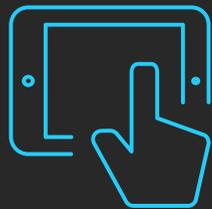
Voice



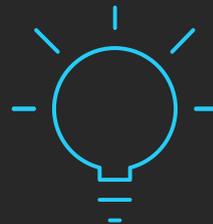
Monitoring

INTERFACE LAYER: CLOUD SERVICES / AV COMPUTE / REMOTE ASSISTANCE

OUTPUTS



Displays



Lighting



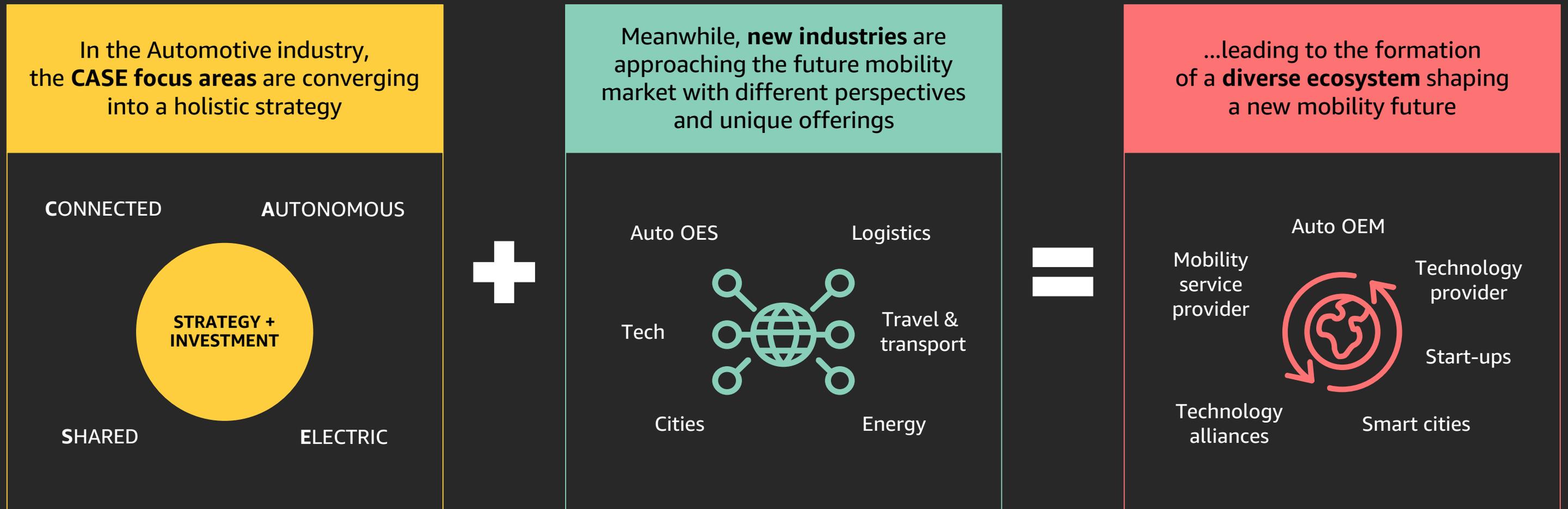
Audio



Vehicle control

The new mobility ecosystem

OEMs, suppliers, start-ups, and various cross-industry players are all seizing the opportunity to shape the new mobility future. They are forming new partnerships and alliances across the ecosystem in an effort to develop products, services, and experiences that leverage the benefits of CASE.



AWS is accelerating this transformation NOW

Rapid growth of connected and
cloud-based products and services

Adoption is size and stage-agnostic,
happening throughout the ecosystem

Enabling a wide variety of mobility
solutions to get you where you
need to go, when you're ready to go,
and how you want to get there

Let's start the journey together



Electric vehicles: Breaking down adoption barriers and bolstering brand image

Accenture and AWS are helping automotive and manufacturing companies integrate cloud computing's blend of scalability, agility and pay-per-use costs, combined with mobile, social and analytics technologies.

FIND OUT MORE AT BOOTH #1714

accenture

Join us immediately after the session to connect with our speakers and industry experts.

DATE: Tuesday, December 3

TIME: 2:15PM – 4:15PM

LOCATION: **Automotive and Manufacturing Lounge**
ARIA - Level 3, Ironwood Terrace

The Accenture logo, featuring a stylized white chevron symbol above the word "accenture" in a lowercase, sans-serif font.

Thank you!



Please complete the session survey in the mobile app.