

The Accenture logo, featuring the word "accenture" in a white, lowercase, sans-serif font. A small white chevron symbol is positioned above the letter 't'. The logo is set against a dark background in the top left corner of the slide.

accenture

# eMobility accelerated

Creating a seamless customer experience through value chain convergence

**Executive Summary**

## Creating a seamless customer experience

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**Early in the morning on an ordinary day in 2035, an electric vehicle (EV) owner unplugs her vehicle. Checking her app, she can see that her car discharged its battery into the grid during the evening peak, earning her money from her utility's vehicle-to-grid (V2G) program. But her EV is now fully charged. After the evening peak, when electricity prices fell, her smart charge point reversed the flow of electricity back to the EV. And when the morning peak began and the sun rose, her EV charger switched from grid-supplied energy to her rooftop solar.**

Today, she will drive 300 miles to an important meeting, but she is not concerned about charging en route. Her EV provides her with real time information on the charge points available at her destination, and the onboard route planner makes adjustments based on any changes in charge point status. It recommends the cheapest charger, based on the amount of electricity she needs, and the time available to provide it.

She parks at the recommended point and plugs in. The charge point communicates directly with her EV, instantly recognizes her account, and begins charging. After her meeting a few hours later, her EV is fully charged for the drive home. However, she does not use a credit card to pay: the payment is processed automatically as soon as the charging session ends. Once home, she plugs her EV in, making the EV available again to the utility flexibility program, safe in the knowledge it will be fully charged the next morning.



# **The new eMobility customer journey**





## The New eMobility Customer Journey

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**This seamless user experience is the vision for eMobility in the near-future. But delivering it relies on the entire ecosystem working in harmony. It relies on an interoperable infrastructure that supports collaboration between automotive, the power system and charge point networks.**

Friction within the ecosystem leads directly to poor user experience. Therefore, excellent user experience relies on significant improvements to device and vehicle interoperability. And as the deadline looms for ICE bans, the industry needs to transform quickly.

This cannot be done with one foot in the past. Each part of the value chain needs to undergo total reinvention. A robust digital core is the foundation for a much deeper cross-industry collaboration. One where silos are broken down so that organizations can embrace the art of the possible and develop a more customer-centric future.

## The New eMobility Customer Journey

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### Improve customer experience

**Early adopters' experience needs to be improved across the entire customer journey. It starts from the moment a customer begins thinking about buying their first EV. Greater education is needed as customers transition to EVs. Often delays occur in home charge point installations, too few public charge points which can be slow to charge and often out of service, and range of payment systems that are incompatible with each other.**

On the move, drivers cannot easily access real-time data on where public charge points are, their capacity, their availability, or the cost to charge their vehicles. There is a profusion of different eMobility apps, creating confusion and frustration among drivers. And a lack of data sharing means there is no single source of information on the complete charging network.

Charge point installations can be delayed by months, waiting for permitting approvals, for suppliers to deliver the charging hardware, and for distribution operators to connect them to the grid.

### Restore confidence in charging infrastructure

**Four key attributes create a positive customer experience: simplicity, transparency, trust, and affordability. If the eMobility industry gets all four right, across the customer journey, confidence will improve.**

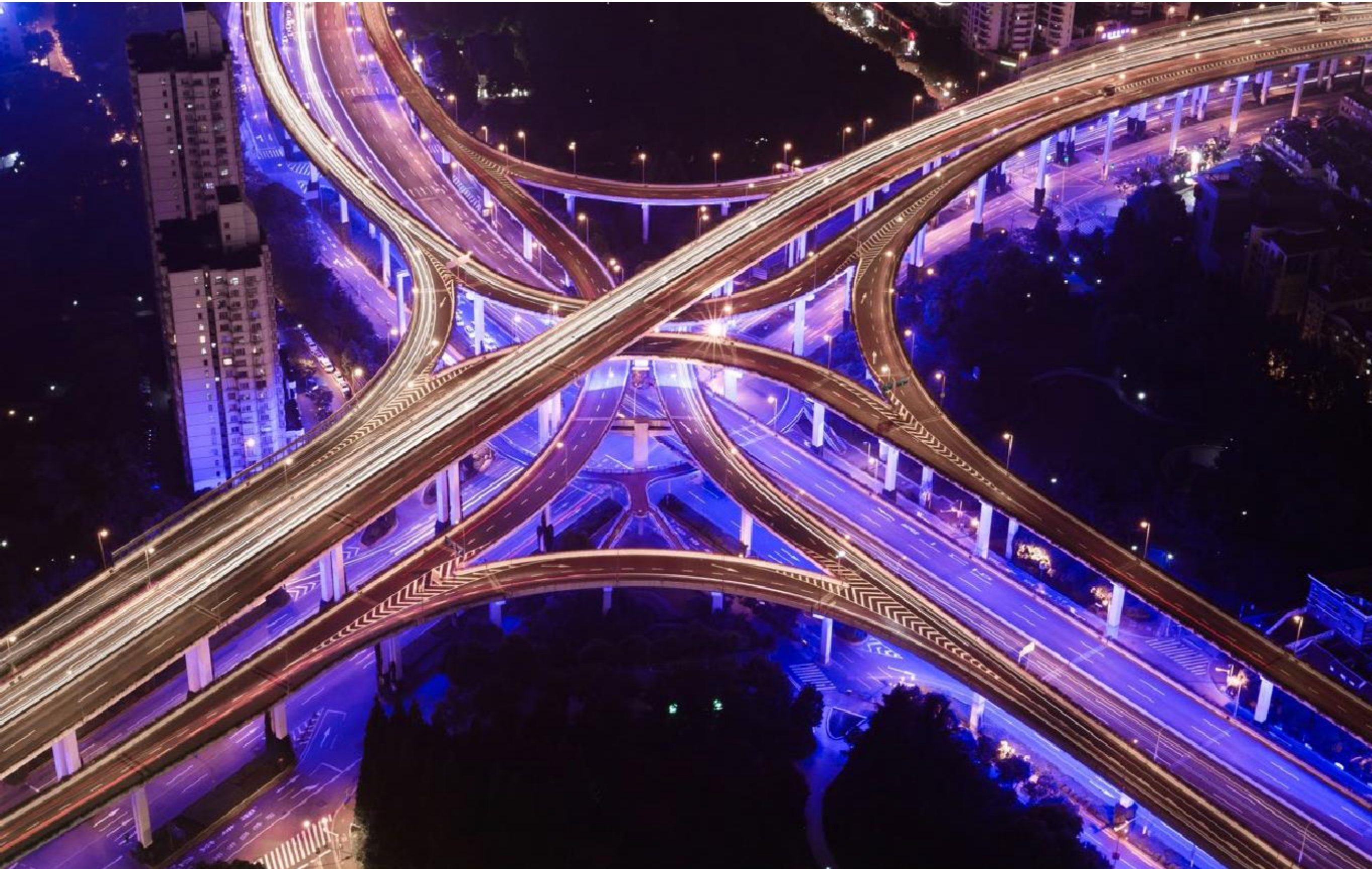
The industry needs to make it easier to choose the right vehicle, install a charger at home, and access and pay for charging in public. Customers should also trust that an EV's battery range can support daily routines.

In addition, new charge points delivered on time, installers available to fit the equipment, and distribution network operators able to ensure that grid connections are timely and any required grid upgrades are performed on time. eMobility app functionality has to improve, to provide clearer, more complete, and real-time information on public charging infrastructure, including availability and cost.



**The new eMobility  
ecosystem converges  
at the charge point**





## The new eMobility ecosystem converges at the charge point

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**As a new industry, eMobility introduces a new value chain – the charging infrastructure – which integrates with two existing value chains, automotive and power utilities. While the automotive and power value chains are well known, EV charging infrastructure is comprised of completely new players. However, they are nevertheless vital to the eMobility customer experience and central to the development of new business models. All players, across all three value chains, have a responsibility for this close integration. So, what does it look like?**

Automakers and actors across the charge point infrastructure value chain should adopt aligned hardware and software standards to ensure that vehicles can connect to charge points and participate in new EV-related programs. An example? Improving driver access to information regarding the cost and availability of charging infrastructure – or enabling two-way power flows that support V2G functionality.

The more seamless the value chains become, the greater the interoperability, the more services can be delivered, the more frictionless the charging experience becomes, and the more satisfied the customer. But collaboration is not just about improving customer experience. It also creates much more value across the eMobility ecosystem – and releases the potential for entirely new business models.

## The new eMobility ecosystem converges at the charge point

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**It is important to remember that across these three interconnected value chains sits a layer of regulation and governance. eMobility is a vital aspect of net-zero commitments in urban redesign. Several levels of government have a significant interest in eMobility's success and will play an important role delivering it.**

While it is important that regulators do not stifle competition, they can help the industry move in the right direction. Regulators played an important role in stimulating early demand for EVs through subsidies and incentives. Now, they have an opportunity to refocus on the charging experience, particularly for people without access to a private charge point who will rely on public charging networks. Where private players cannot provide public charging, the public sector have a great opportunity to step in. Increasingly, public-private partnerships can help delivering this infrastructure, as part of public sector collaboration across the eMobility ecosystem.

### New business model creation

**Aligning all the hardware, software and data within the eMobility ecosystem will be instrumental in delivering a seamless customer experience. But customer experience is merely a foundation, not the end goal. Once all players take this ecosystem-wide perspective, many opportunities will emerge to generate customer value around the charge point. These include power system flexibility models, EV fleet management, or repurposing EV batteries for second-life use.**





# Implications for the eMobility value chain





## Implications for the eMobility value chain

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**Collaboration within the eMobility ecosystem – and the public sector – is vital if we are to create seamless charging experiences or new business models. Incumbents need to rethink their positions in this new industry and devise strategies that define their approach to cross-industry collaboration.**

When orchestrating this convergence, each player should bring a deep understanding of what they require from others, and what they can provide to the rest of the ecosystem. Each step toward convergence strengthens and reinforces these interdependencies, but also improves overall customer experience. Significant change is required.

## Implications for the eMobility value chain

### Oil and gas industry reinvention in an electrified world

**Eventually, the eMobility ecosystem entirely displaces the internal combustion engine (ICE) fuel value chain for passenger vehicles\*. Electricity replaces petroleum as the fuel; charge points replace service stations as the refueling location. The oil and gas industry may also face a lost monopoly it holds over ICE vehicle refueling. EV charging has much lower barriers to entry because virtually anyone with an off-street parking space can install a charge point. The challenge for the oil and gas industry is how to remain relevant in an electrified world.**

Fortunately, oil and gas companies have many competitive strengths and could play a major role across eMobility\*\*. They could become charge point operators or eMobility service providers. They could transform service station forecourts to support new business models such as eMobility hubs or expanded retail offerings. They could become integrated energy companies and start providing power to customers.

\* Use of EVs displacing oil consumption - IEA - *Electric Vehicles*, Sep 2022  
 \*\* From Oil Producers to Power Players: A Smart Move? Accenture

### Power industry business models reimaged

**EVs represent a once-in-a-generation growth opportunity for the power industry, with their demand for power set to grow utilities' revenues. But EVs also present a significant challenge to power network operators. Furthermore, in competitive markets, electricity retailers will face stiff competition to supply power.**

The eMobility ecosystem depends on robust, and reliable power networks that supply clean electricity. Electricity network operators need to ensure the grid is sufficiently robust and flexible to meet all eMobility's needs. Part of this will be achieved through offering incentives that maximize the flexibility potential of these "batteries on wheels." Encouraging drivers to participate in flexibility programs that offer a financial return but are easy to understand.

Electricity retailers in competitive markets could create integrated offers that include the supply of clean electricity, orchestrate residential EV charge point installations, provide charge cards for charging on-the-go, provide rooftop solar, enable access to a local energy community, install a stationary battery and/or sell heat pumps.






## Implications for the eMobility value chain

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### Automotive become eMobility enablers

**From an automaker's perspective, eMobility is not just a simple case of transitioning from one drivetrain to another. Historically, a vehicle's engine was a source of significant competitive differentiation between automakers. However, an EV has just one percent of the moving parts of an ICE vehicle, severely restricting the potential for product differentiation. Consequently, original equipment manufacturers (OEMs) need to find new areas to compete and will likely refocus on the driver experience. That essentially means a shift from hardware to software, such as advanced battery management, route planning and infotainment systems – bold moves to monetize digital services.**

eMobility has already sparked a wave of innovation among automakers, some of whom are moving into electricity supply, EV charging infrastructure, insurance, solar panels and home storage\*. But there is much more the industry can offer. It can develop cleaner, cheaper batteries. It can help develop alternative ownership models such as shared ownership, leasing, rental and vehicle-as-a-service.



**If the eMobility industry gets the customer experience right, it will lay the foundations for mass adoption and significant additional value creation.**



## In conclusion

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**If the eMobility industry gets the customer experience right, it will lay the foundations for mass adoption and significant additional value creation. But without a seamless charging experience, many drivers may be deterred from buying a new EV. And the only way to create a seamless experience will be for the different eMobility value chains – automotive, charging infrastructure and utilities – to work in harmony. Currently, friction occurs across the charging customer journey, from problems with home charging to inadequate and unreliable public charging infrastructure.\* This friction must be removed if customer confidence in EV charging is to improve.**

The more seamless the charging experience, the more satisfied the customer – and the more business models can be created on this infrastructure. This virtuous circle can only be achieved by adopting a value chain perspective. All stakeholders – including regulators – should recognize the additional value and improved customer experience that cross-industry collaboration brings. And to do that, all participants need to have a deep understanding of what is required from others and a willingness to supply and support the rest of the ecosystem.

Collaboration will not be easy, at least initially. But it is vital. Each point of friction in today's charging infrastructure may delay EV adoption and impede the development of new business models. Accelerating eMobility serves as a net positive for the industry, consumers and planet, bypassing the only alternative of ICE vehicles.

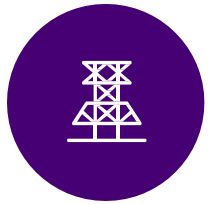
## In conclusion

Accenture supports clients with an end-to-end offering adapted to the maturity of their eMobility business



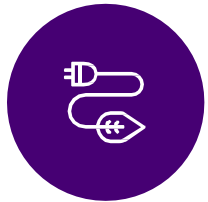
### Strategy and business models:

Helping clients develop their unique EV business and go-to-market strategy.



### Charging Infrastructure Services:

(Semi-) Public charging infrastructure planning and deployment, and efficient integration of all EV charging infrastructure into the grid.



### Managed EV Charging:

Applying retail energy management and trading capabilities to unlock value from flexibility.



### Systems integration and EV charging platform configuration:

EV Charging Platform Development and System Integration Services (SI)



### Customer Experience, Service & Products Launchpad:

Helping clients bring eMobility offerings to the market at scale.



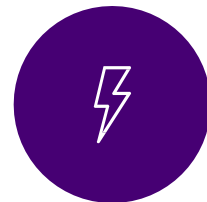
### Fleet Charging Enablement:

Helping clients with fleet conversion and fleet charging enablement services.



### EV Charging Technology Advisory & Due Diligence:

EV charging platform architecture design, fit gap analysis, platform vendor selection, and IT implementation roadmap.



### EV Charging Operations:

We help our clients drive charging station set-up, maintenance and operations, e-mobility services, fleet electrification and management through an intelligent operations platform, SynOps, and global distributed expert workforce.



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