Guide to Future-Proofing Your EV Charging Operations

BUILDING & SCALING AN EV CHARGING BUSINESS

It has never been more business-savvy to build an electric vehicle (EV) charging operation. EV sales are projected to reach nearly 30% of all new vehicle sales in the U.S. by 2030, and EV ownership is skyrocketing — with California, Florida, and Texas leading the way.

Additionally, there are numerous rebates, incentives, and tax credits available to both businesses and individuals who move to EV charging — making it all the more attractive to build an EV charging business.

Even if you start small, as your EV operation grows, you'll reach milestones that necessitate scaling your business — so that you can serve more customers and maximize the profitability of your operations.

The most important way to do this is through adding wireless connectivity into your EV charging operation.

Why Wireless Connectivity is Crucial in EV Charging

In theory, should nothing go wrong and no changes need to be made, EV charging stations could be 'set and forgotten.' But in reality, we all know that things do go wrong and updates do need to be made — especially in a rapidly evolving space like EV charging.

That's where the Internet of Things (IoT) comes in. Putting your EV chargers on the wireless connectivity 'grid' is not only beneficial to the functionality of your EV charging operations — it's crucial to your future success.

Here are the key areas of your EV charging solution in which wireless connectivity has a role to play:

MONITORING:

Gaining insight into the health and status of chargers is essential in order to provide a quality experience for the customer. **1 in 5 EV chargers in North America are not operational**, leading to failed charging attempts and driver frustration. Without visibility into the status of these chargers, repairing them is difficult. From a utilization perspective, customers need some way of knowing what chargers are currently available and operational and which aren't so that they can plan their journey.

ONGOING DEVICE MANAGEMENT:

As we all know, these chargers are deployed for years (or even decades). But **technology changes rapidly, as in the case of the open charge point protocol (OCPP)** – these guidelines have evolved significantly and yet remains the industry standard to be met. Ensuring you can manage chargers out in the field – without needing to deploy a technician to make local, onsite modifications each time — is an important part of future-proofing your operations. Whether it's conducting firmware updates, configuration changes, or simply being able to adjust on-peak versus off-peak hours — all of these activities require ongoing and remote device management.

PAYMENT & CHARGING AUTHENTICATION:

In the EV charging space, real-time data is essential to providing a quality customer experience — one that will keep your EV customers coming back again and again. Authenticating the transaction in real-time allows you to track payment status and make the right decisions at the right times — not to mention being able to accurately measure the revenue generated from your EV charging operations.

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Challenges in Growing a Connected EV Charging Business

As you scale and grow your IoT-connected EV charging operation, there are a number of challenges that often arise — and that you'll want to be prepared for.

LOGISTICS:

When you have a small number of charging stations, keeping tabs on each one may be manageable. But as your operation grows to include tens of thousands of chargers, all over the U.S or even the globe — the demands quickly get out of hand.

Procuring the right antennas, cables, routers, and SIM cards for all of your chargers — not to mention ongoing management and conducting repairs — can become nigh impossible.

CARRIERS:

Understanding your carrier options is an important piece of growing your EV charging operations. There are numerous different wireless carriers across North America, with differing coverage maps and connection strengths over different geographical areas.

When dealing with IoT-connected solutions like your EV charging operation, those slight variations in coverage and performance can mean vastly different customer experiences. Finding a solution that optimizes available carriers, whether through an e-SIM or multi-carrier approach, is crucial.
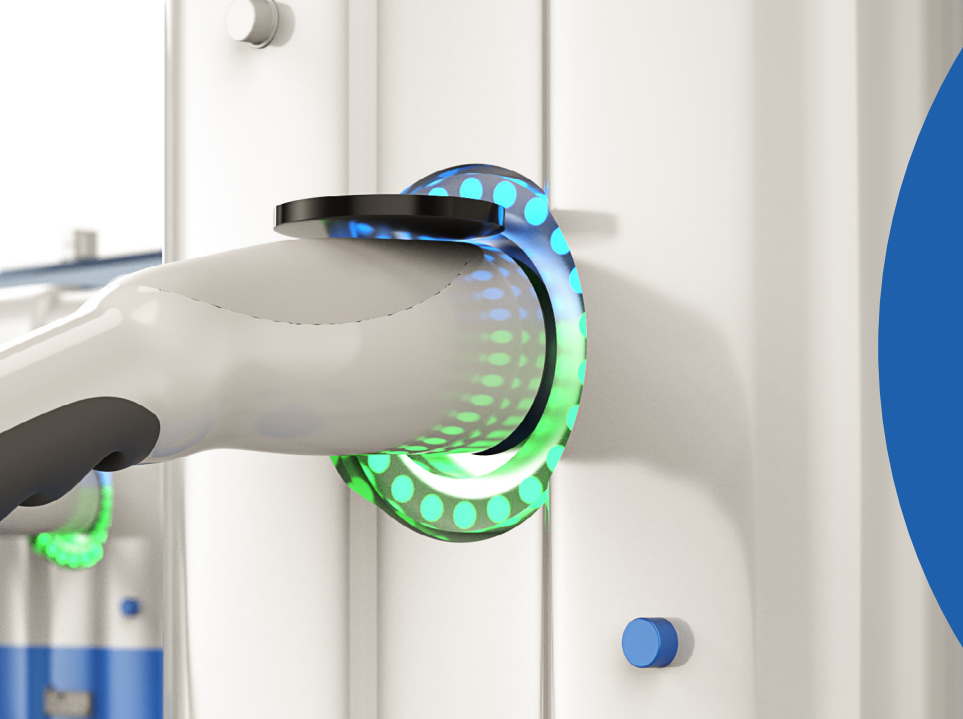
1 in 5

EV CHARGERS FAIL

DEPLOYMENT MODEL:

There are many ways to deploy a connectivity solution. For example, some businesses may select chargers with a low-power (LTE-M or NB-IoT) module embedded directly in each charger, while others whose chargers are gathered in a small location may opt for them to share one or a few connection points.

Choosing the right deployment model for your operations can set you up for success down the road.

BACKUP & RECOVERY:

It's inevitable that some of your EV chargers will go offline at some point, so it's important to set a recovery plan in place for when that downtime occurs. Making sure you can reboot the charger, software, and router via a backup connectivity method is key.

SECURITY:

Ensuring robust chargepoint security is important, both from the digital and physical perspectives.

From a physical security perspective, the need is clear. In many charging stations, the only passersby are the customers themselves — creating a need for accountability and monitoring of transactions (lest activities like stealing, charger hogging, or vandalism go unchecked).

From a digital security perspective, it's important to maintain the right access to these chargers without having to expose them on a public network. It can prove challenging to protect chargers that weren't necessarily built with IoT security in mind.

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Future-Proofing Your EV Charging Operations

'Future-proofing' a solution means anticipating future growth and developments and keeping those parameters and implications in mind as you build your solution today. It is the best way to ensure your business can remain profitable as the market continues to evolve.

Here are some key ways to future-proof your EV charging business.

→ **ONBOARD WITH MULTI-CARRIER CONNECTIVITY**

There is no one wireless carrier that will 'check the box' for all charging solutions across the globe. Differing hardware and use case combinations (such as standard LTE and 5G deployments versus low-power deployments) contribute to a wide range of coverage needs.

A multi-carrier approach, especially one that can be managed under one bill, allows you to simplify your options while benefiting from the best network coverage available.

→ **STREAMLINE YOUR SUPPLY SERVICES**

The procurement process, including sourcing EV chargers, the software, portal, and how those communicate, is not where most organizations offering EV charging stations hope to be spending a great deal of their time.

The ability to outsource this side of the business with a packaged and trusted solution, even including storage and forward and reverse logistics, can free business owners up to focus on more revenue-driving sides of their operation.

→ **ENSURE DEPLOYMENT IS DONE CORRECTLY**

You'll want to ensure your solution is deployed correctly — the first time. Assessing your space through an RF design can help make sure technical requirements are met, and that SIMs and routers are installed correctly for the decades to come.

→ **OUTSOURCE YOUR SUPPORT SERVICES**

As you scale, it becomes increasingly difficult to keep up with the management and monitoring duties involved with your EV charging solution. Make sure you receive the data you need — whether that's charging station status reports, battery backup deployments, or downtime notifications — and that action can be taken to address the issue.

Offloading these responsibilities through an around-the-clock technical support team can help ease this load.

Onboard with a Connectivity Partner

These strategies may seem daunting when listed all together, but the good news is that there are partners ready and able to support you as you look to scale your EV charging business.

At Kajeet, we deliver managed IoT connectivity solutions to our EV charging customers. Our end-to-end offerings are customizable to your specific use cases, needs, and the current stage of your EV charging business. We work with all major U.S. wireless carriers, so you get the best network coverage available. And, our concierge-level support offers you 24/7/365 technical support and peace of mind.

Let us help you improve your operational capabilities, reduce costs, strengthen your security, and get to market sooner.

Speak with an EV Charging Solutions Specialist

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About Kajeet

Kajeet provides optimized IoT connectivity, software and hardware products that deliver safe, reliable, and controlled internet connectivity to nearly 3,000 businesses, schools and districts, state and local governments, and IoT solution providers. Kajeet's Private Network solutions simplify private wireless to allow customers to design, install and manage their own private wireless networks. Kajeet is the only managed IoT connectivity services provider in the industry to offer Sentinel®, a scalable IoT management platform that includes visibility into real-time data usage, policy control management, custom content filters for added security and multi-network flexibility. Kajeet is available for hybrid and multi-network access across all major North American wireless networks, globally with coverage in 173 countries, and on multiple licensed and unlicensed networks. Kajeet holds 43 U.S. patents in mobile technologies. To learn more, visit kajeet.com and follow us on Twitter at @Kajeet.

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