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THE DECISION-MAKER'S GUIDE TO SELECTING AN EV CHARGING MANAGEMENT PLATFORM

Futureproof your EV Charging Business

Paper Outline

Executive Summary

Electrification of transportation is at the heart of both the mobility and energy revolutions, creating a booming market and exciting future for EV charging players. The industry's exponential growth means that market opportunities abound while introducing new business and technical challenges. This document focuses on the eMobility market's unique characteristics and examines implementation options for digital services platforms that serve as the **"glue" between the mobility and energy worlds.**

The key challenge is ensuring that the right infrastructure is in place to address a continuously evolving market; a robust and flexible EV charging and energy management software platform, that can adapt to changes in the industry, is essential to a successful EV charging business.

While early entrants are finding that their existing software platform can no longer keep up with the rapid growth and changes in the market, larger companies, especially existing utilities and oil and gas companies, need a unified solution that delivers easy migration, integration, and connectivity to legacy systems, while supporting subsidiaries' varying business models and ensuring regulatory compliance across regions.

This whitepaper was created to help decision makers navigate the mine field of selecting a management platform that will address their challenges today and futureproof their business for the challenges of tomorrow.

This paper covers the three phases of a selection process of an EV Charging Management Platform:

Understand EV charging industry challenges

Define the imperatives of an EV charging management platform

Determine the implementation approach

This paper sheds light on a range of different implementation approaches; from building an inhouse software solution to an out-of-the-box implementation OR a flexible approach that focuses on purchasing a core solution and expanding it with self-development based on APIs.

The EV charging industry challenges

EV charging industry players are looking for solutions that will address their unique market needs and challenges. During this process, they are seeking a solution that will improve network availability, utilization and monetization, will cope with the complexities of the EV charging environment, the expected exponential market growth, the evolving charging behaviors and standards, energy constraints, and much more.

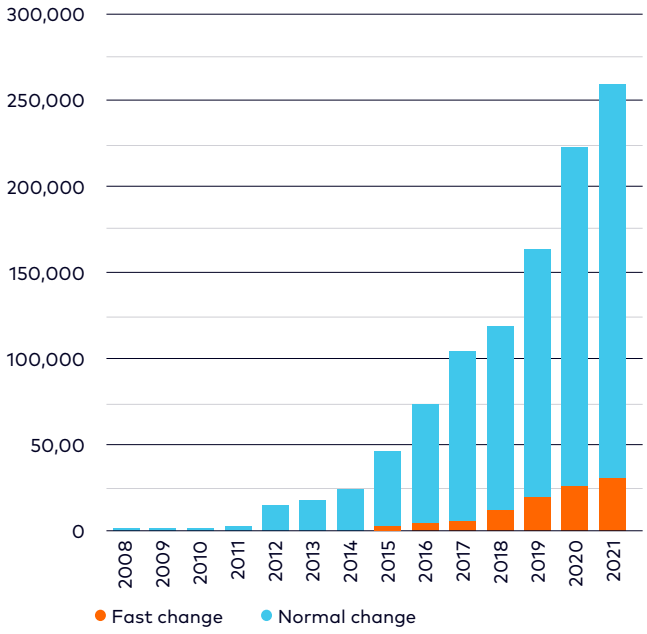
When it comes to EV charging and energy management, we have outlined below the top challenges all eMobility players are facing:

Exponential Market Growth

EV charging providers may start with a smaller-scope network but then quickly install charge points to keep up with consumer and fleet demands. This extremely rapid growth may cause performance degradation and high maintenance costs.

In some cases, the growth of charging networks is done through M&As and requires support for different subsidiaries' business needs and government regulations as well as easy migration and smooth integration with legacy systems.

Normal and fast public charging points (2021)



European Alternative Fuels Observatory

Fast Evolving Market

It's a complex market, with a wide range of stakeholders with multiple business needs, unique business models and ever-changing requirements. For example: CPOs, EV fleets, multi-dwelling units (MDUs), EV charging hosts and EMSPs have vastly different business and technological needs.

The situation is further complicated by the increasing variety and volume of chargers made by different suppliers to address the varying charging needs, such as AC, DC, home, public, semi-public, etc. Managing the variety of charging hardware across sites demands a hardware-agnostic solution based on open industry protocols such as OCPP and OCPI.

Ensuring EV Drivers' Satisfaction and Loyalty

It is important to realize that private EV drivers/ EV fleet drivers are key players in the ecosystem. Happy drivers will generate more business, unhappy customers, especially with the digital lifestyle and impact of social media, may be a major disruption to the business.

Chargers' availability, charging simplicity, real time information and safety are key parameters to achieve EV drivers' satisfaction.

EV drivers wish to easily charge at a variety of locations: at home, MDU, workplace, depot, destination, and on-the-road charging.

They expect a seamless charging experience, an accurate and up-to-date status of chargers of the network and of other networks.

Drivers are also expecting seamless EV charging cross borders and EV charging networks, so EV roaming, as well as multicurrency and multi-language support, is critical.

Accelerate Electrification Without Straining the Grid

Ensuring a balance between the power requirements for vehicle charging and the grid is a major challenge for EV charging companies.

McKinsey Research shows that unmanaged substation peak-load increases from EV charging power demand will eventually push local transformers beyond their capacities, requiring expensive infrastructure upgrades.

The overall amount of energy generated by utility companies is finite. Increasing the infrastructure to generate additional power is very expensive – and because the infrastructure is underutilized during non-peak times, it adversely affects ROI.

Energy pricing plays a role as both a cost factor and as a means of controlling the load. Drivers and hosts are looking for a solution that will offers smart charging, enabling them to decide when to charge based on variable tariffs.

When there is growing number of chargers in one location e.g., fleet depots, MDUs, office buildings, etc., it is necessary to optimize energy distribution to cope with the limitations of the existing grid. In some cases, battery storage and/or renewables need to be integrated at the microgrid level.

EV charging plays a key role in the flexibility market looking at the flexibility that can be generated from EV charging scheduling and V2G. The combination of EV charging scheduling and V2G gives EV charging players a place in the energy flexibility market.

In this case, power needs to be managed across charging points within the same site or parking lot; among multiple sites within the same facility or building; and among multiple campuses and the grid.

Achieve Ease of Use in a Complex Environment

By its nature, the EV mobility industry is highly complex, with multitudes of hardware, software, business models, and verticals, creating challenges for both EV drivers and industry stakeholders. It is essential that the complexity of the backend is simplified on the front end to smooth the EV driver experience and ease operators' use as well.

Now That You Have the Premise...

With a firm grasp on the challenges facing EV charging providers, it's time to define the imperatives of EV Charging management platform.

The 6 imperatives of EV charging management platform

Now that the market challenges are clear, the next step is to define imperatives of EV charging management platform.

Operational Excellence

The processes of managing EV charging networks are complicated. It's critical to ensure chargers are running efficiently so that they operate properly when drivers want to charge.

It is essential to supervise the network and monitor issues with the chargers; clear visibility and logging of chargers' issues is critical. Once an issue is found, there's a need for tools to investigate, track, and resolve it quickly and easily.

An important next step, following issues' detection, is the ability to provide self-healing capabilities- the ability to fix issues automatically before the drivers or the operators are impacted by the issue. Proactive issue resolution leads to a more stable chargers' environment, a smoother EV charging experience for the driver while improving the operator's TCO.

Ultimately, the business value of operational excellence delivers **lower TCO, increased monetization**, and **improved ROI**.

Business Flexibility

Organizations are focused on revenue growth while delivering on the promise of business flexibility in a world of disruption and change. Optimizing monetization and maximizing customer experience require the flexibility to define various charging and billing plans – KWh; first hour free, second hour paid; penalties for peak charging, etc.

The ability to select the payment gateway adds major business flexibility and means that you can select the payment gateway that addresses your needs both from a quality and fees perspective.

To keep customers happy and loyal, EV charging providers will require a solution which will allow them to offer incentives such as coupons to support retailers; free or discounted charging, and so on.

As EV drivers need to be able to roam, your back-end solution must integrate with external service providers like Hubject, GIREVE, and e clearing.net, and/or peer-to-peer roaming protocols like OCPI.

The chargers' data is not always accurate and clean. Corrupted transactions need to be handled automatically to prevent them from entering the billing cycle. This precludes worst-case scenarios of unresolved disputes with drivers, erupting into irate, frustrated customers.

Comprehensive system flexibility is key to **increasing monetization** and **improving ROI.**

Customer Centricity

Drivers are the most important piece of the puzzle, so your EV charging management solution needs to be customer centric.

Chargers' availability and stability are key to EV drivers' satisfaction, and all customer-facing, self-service tools need to be intuitive and simple, delighting the driver and providing a seamless charging experience.

The solution must deliver clear understanding and insights into the individual customers and their behaviors to better understand and support them.

A comprehensive solution should also support different business users in the ecosystem, such as EV fleets managers, facility managers in commercial buildings and MDUs, etc.

Customer-centric solutions **increase customer satisfaction** and **loyalty, minimizing client recruitment costs**, and **establishing a strong brand.**

Energy Optimization

To manage the EV impact on the existing grid, balance needs to occur among chargers' power demands, buildings' power consumption requirements, and renewables. Specialized algorithms are required to make sure charging is optimized for the number and type of vehicles; the different types of drivers (e.g., VIP drivers); energy-related priorities, etc.

A smart energy management solution must support time-of-use (ToU)/spot pricing. Energy needs to be managed on the different levels – starting at parking lot or campus level – all the way up to demand response. The energy management system needs to handle power load balancing, energy optimization, EV fleet prioritization, demand response, and integration with the flexibility market, local distribution, and renewables.

A smart energy management solution will postpone or eliminate the need to replace electricity infrastructure by "flattening the curve" of energy demand and reduce charging costs by ensuring charging occurs when energy is less expensive.

The business value is ultimately transforming the EV charging energy challenge into a solution to a bigger problem, as we can use EVs as a **balancing tool for the grid to increase efficiency and reduce pollution.**

Proven at Any Scale

Proven scalability is critical. You may start small, but once you need to scale, the system must keep pace. It has to support expansion across countries or within a single region, so you must be able to scale the network quickly, easily, and with no disruptions to existing operations. For true business value, you need a system that has proven record to **grow in tandem with EV market growth.**

Open and Future-proof

Make sure the platform is open and future proof, with no vendor lock-in. The ideal EV charging management solution supports open protocols such as OCPP and OCPI; supports the hundreds of charger types; and delivers complete modularity so you can choose the appropriate modules. For even more flexibility, the system needs to support API-based external development. Customer-facing apps and tools need to be white-labeled so you can strengthen your brand with your customers. The system needs to not only support the drivers but also the various stakeholders along the value chain.

With an optimized network **supporting your current** and **future business needs**, the business can expand accordingly.

> Supporting your **current** and **future** bussines needs

Determining the implementation approach

A few alternatives can be considered when determining exactly how you are going to implement your EV charging and energy management solution.

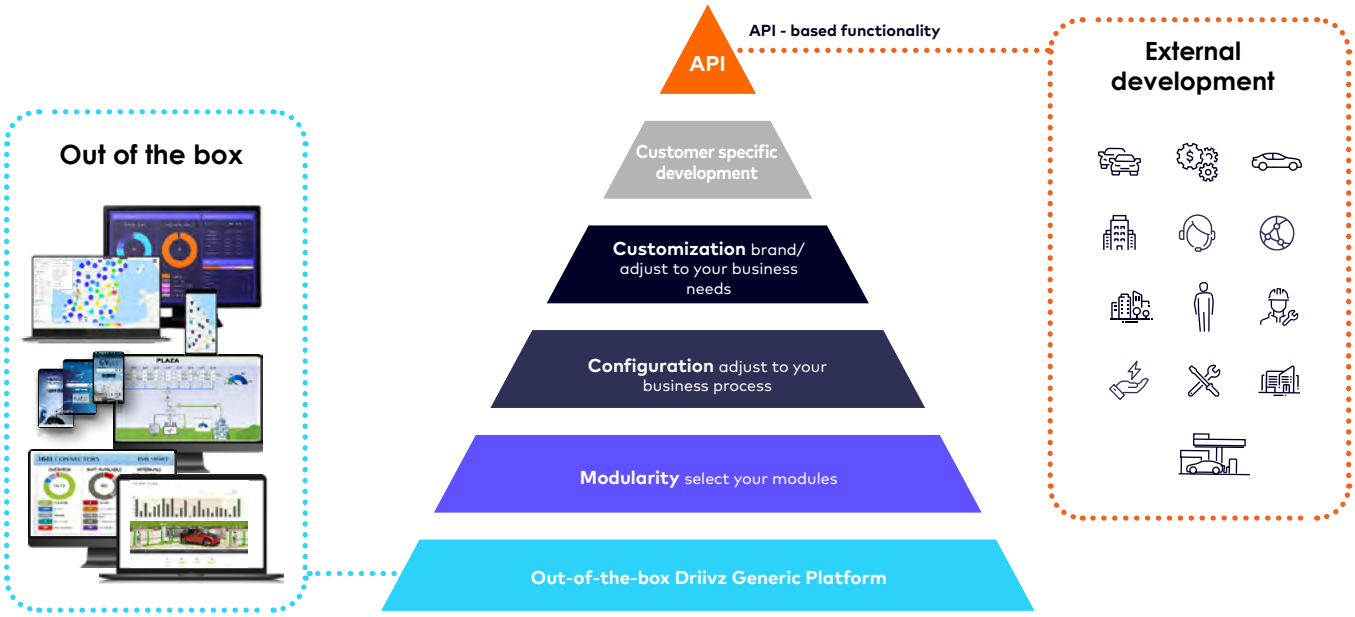
If you **already have a solution**, you have two options: Keep developing and applying system updates OR buy a new system to replace your old one.
If you **start from scratch**, instead of reinventing the wheel, you can buy a **generic platform**, to get out-of-the-box functionality that encourages growth and expansion for any type of market participant – e.g.: CPO, EMSP, etc.

The platform provider needs to deliver continuous innovation and upgrades to ensure you can better monetize your networks and gain competitive advantages, always with a focus on increasing the bottom line.

Or

You may consider a **"buy some, develop some, and expand as you grow"** approach that will allow you greater flexibility and support your current and future needs. This approach offers out-of-the-box capabilities as well as the ability to configure, customize, and focus the system on addressing unique requirements to ensure the solution can address specific technological or business challenges.

Driivz – Flexible to support your current and future needs



Modularity allows you to choose the functionality you need today and quickly add additional modules later (e.g.: billing, energy management, etc.), ensuring your EV charging infrastructure is supported for the long haul.

Furthermore, it's essential to choose a platform that will enable you to **configure and adjust** to your business processes easily, with no development work.

Customization for your business needs will enable you to differentiate and brand your offerings to deliver a competitive advantage. You may get to a point where you need to implement additional capabilities to address evolving business and operational challenges.

Therefore, it is recommended to go with a vendor whose platform not only accelerates customizations but who can also offer **customer-specific, bespoke development** to secure your unique niche in the EV charging market.

Finally, it's imperative to make sure that any platform you buy can support and be integrated into any other solutions **via API connectivity.** You can further develop and integrate your own driver applications, portals, or any other specialized systems to strengthen your competitive edge.

Benefits Realization with "buy some, develop some, and expand as you grow" approach

Business benefit	Build	Buy	Driivz approach Buy some / Build some
TCO reduction		V	V
Avoid vendor lock-in	V		V
Economies of scale		V	V
Gain control	V		V
Defined priorities	V		V
Build a "competitive edge"	V		V
Expedite time-to-market		V	V
Market expertise		V	V
Solution approach	Project	Product	V
Innovation		V	V
Develop own IP	V		V

While build or buy give you clearly-defined, individual benefits, the combination – buy some, build some – delivers everything you need to grow a successful eMobility business.

A comprehensive and modular solution with innovative, built-in functionality accelerates time-to-market. A white-labeled consumer-facing interfaces and easy customization, based on your business model, vertical, and individual customers' requirements, provide everything you need to succeed today.

Meanwhile, an open-standards and API-based solution accelerates your customization by making it easy to create bespoke, proprietary enhancements. Adding your custom-built components to the out-of-the-box system delivers the flexibility you need to fine-tune your competitive advantage and drive success for the long run.

About Driivz

Driivz empowers major service providers that aspire to take a significant role in the e-mobility landscape with a market-leading, end-to-end EV charging and smart energy management software platform.

Since founding Driivz, our core focus has been on providing a digital services software platform to major players in the EV market. With hypergrowth in EV charging infrastructure, we offer a scalable, intelligent and integrated solution that enables our clients to effectively manage their networks and provide drivers with an exceptional EV charging experience.

We deliver on the promise of business flexibility in a world of disruption and change.

Driivz platform serves as the operating system for the largest EV charging network operators, currently managing tens of thousands of public chargers (100,000s in roaming), serving over 700,000 drivers in more than 20 countries throughout North and South America, Europe and Asia.

Driivz innovative, open platform removes the business and technical obstacles encountered when working with proprietary solutions and provides a fully integrated single solution that supports customization and API-based development. We deliver on the promise of business flexibility in a world of disruption and change.

With vast experience in the world's largest OCPP and OCPI-based implementations, the solution is certified for OCPP 1.6 and complies with ISO 15118, OCPP 2.0.1, ISO27001 and local regulations (e.g. Eichrecht), supporting more than 170 charger types.

Driivz's white-label solutions allow utilities, gas & oil companies, automakers and EV charging service providers to deliver a set of advanced yet easy to use solutions to multiple players in the ecosystem, such as fleets, hosts, municipalities, commercial and industrial buildings and MDUs.

The Driivz smart energy management solutions enable optimal utilization of the grid, energy and cost savings and integration of EV charging with renewables, batteries and building management systems.

To ensure customers can monetize their networks and gain a competitive advantage by offering innovative tariffs and billing plans to their customers, we have developed and deployed an extremely powerful and integrated billing engine which supports multiple business models.

Our customers include global industry players, such as Volvo, Gilbarco, EVgo, Ennet, Centrica, ElaadNL, ESB, CEZ Group, Copec and MOL Group.

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