Open Standard or Proprietary Solution?

What are the risks of choosing a proprietary EV charging system?

Executive Summary

Choosing a proprietary EV charging ecosystem carries significant risks—higher costs, limited innovation, upgrade constraints, and exposure if a vendor exits the market. In contrast, open-standard solutions like OCPP (Open Charge Point Protocol) offer flexibility, vendor independence, and future-proof resilience. This paper examines key dimensions including cost, innovation, upgradability, and vendor-shutdown risk, with examples and recommendations.

1. Introduction: The Stakes of Platform Lock-In

The EV infrastructure sector is expanding rapidly, with networked software and hardware tightly integrated. Proprietary systems limit interoperability and lock customers into single vendors. Open standards reduce this risk and enable flexibility.

2. What Is a Proprietary EV Charging Solution?

- Proprietary systems often tie hardware and software into a closed ecosystem.
- This closed ecosystem requires users to download and use proprietary software apps that they may not want and don't need at other locations.
- Proprietary systems limit compatibility with external platforms and restrict firmware updates.
- Vendor service discontinuation can render proprietary hardware and software investments non-functional for future use.

3. What Is an Open Standard Solution?

- The industry leading open standard for EV charging is OCPP which enables interoperability among hardware and software providers by defining a common protocol for charging. The protocol in simple terms provides a common
    - set of charger features,
    - way for chargers to operate, and
    - way for software networks to communicate with the chargers.
- OCPP is governed and managed by the Open Charge Alliance, a non-profit whose mission is to foster global development, adoption, and compliance of communication protocols in the EV charging infrastructure and related standards through collaboration, education, testing, and certification.
- OCPP is adopted in over 137 countries and has become the IEC 63584 standard.
- OCPP is supported by member companies from all over the world.

4. Comparison: Proprietary vs. Open Standard by Key Dimension

A side-by-side comparison of proprietary vs open-standard EVSE systems reveals differences in flexibility, innovation, and risk. See Figure 1.

Figure 1: Comparison of Proprietary vs. Open Standard EV Charging Systems

Factor	Proprietary	Open Standard (e.g., OCPP)
Initial Cost	Often higher; bundled stack	Hardware/software independently procured
Flexibility	Bound by one vendor	Modular; switchable backend
Innovation	Centralized and slower	Multiple providers compete on features
Upgradeability	Dependent on vendor roadmap	Provider-agnostic upgrades possible
Vendor Shutdown Risk	High—hardware/software may become unusable	Low—can migrate to other open standard network

5. Case Studies: When Vendor Lock-In Backfires

A recent event to highlight proprietary risk was the 2024 shutdown of the JuiceBox EV charging business of Enel X Way. This shutdown left thousands of charging stations in limbo and owners of those stations in a bind.

Mitigation and resolution of this event required additional unplanned costs for owners for solutions such as hardware firmware updates, hardware replacement, new network onboarding and charger re-configuration.

Events like this also reach and impact the users of the charging stations as well requiring the download and setup of new charging applications. This is avoidable with open standard systems that can provide a common interface for disparate hardware with minimal disruption to users.

6. Future-Proofing: Why Open Standards Make Strategic Sense

- EV charging hardware is durable and has a lengthy service life; however the charging networks and backends evolve faster.
- Open standards solution enables flexibility and adaptability often resulting in cost control and best of breed scale and upgrade options.
- Open standards ensure common features are supported like OTA upgrades, smart features (e.g., V2G), and energy optimization.

- Many government programs now require open protocols.

7. Conclusion & Recommendations

Proprietary solutions risk stranded assets, higher lifecycle costs, and limited provider flexibility. Open standards such as OCPP offer interoperability, upgradeability, competition, and hardware longevity.

Evaluation Checklist:

- Does the charger support OCPP 1.6 or 2.x?
- Can the backend be changed independently?
- Is the hardware interoperable across software vendors?
- Are firmware updates accessible?

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