Introducing DR to your platform based on EV CPO case study
Introduction

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Introduction / About Codibly
Problem statement
Exploring possibilities
Designing for the success based on Case Study
Key takeaways
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About Codibly

11+ Years Codibly has been Delivering for Clients

100+ Projects and Clients

150+ Team Size... and Growing

How can we help

- Operations and Management Systems
- Energy Efficiency
- Connectivity Solutions
- Battery Management
- Demand Side Management
- Data Analysis/Forecasting Platforms
- Benchmarking and Optimization
- Solution Accelerators
Extensive experience in software engineering for EV industry
We develop advanced software tailored to EV companies' business needs

Software engineering powered with EV know-how
Whether you are looking for end-to-end cooperation or an experienced remote team of software engineers with EV expertise - we are here to help you out.

- Software team augmentation
  Scalable team of experts with EV know-how, experience and skills

- MVP
  Ready-to-use app in three months

- End-to-end projects
  Software that serves the cross-functional business needs

- PoC
  Ready-to-use in two months

- Product design
  Reliable UX team will design a product that stands out on the market
Why Codibly is the right choice for DR and EV Industry?

- **We have a in-depth understanding of EV ecosystem technologies & excellence in it** - We delivered tens of projects within electromobility ecosystem and gained practical knowledge, this includes different areas and actors of the EV ecosystem which gives us the unique understanding form different angles (end-users, CPO, CP manufacturers and many more). It's what we do, love, and constantly improve ourselves in; educating employees from day one, running EV and Renewable academies, knowledge sharing, and retaining talent.

- **We have tools and know-how that will accelerate the project delivery** - During our journey with electromobility, we also created several reusable building blocks that help accelerate project delivery, we understand time-to-market is key in this rapidly evolving and competitive environment.

- **"We speak the same EV language"** - To ensure EV knowledge sharing, we have established an internal "Energy Academy" course that our employees need to participate in. Thanks to that, Codibly provides teams of experienced programmers with EV technology experts and delivery process-oriented skills. This technical expertise can help us build software solutions that integrate with complex electromobility systems, such as charging infrastructure, battery management systems, and vehicle-to-grid systems.

- **Innovation** - Codibly is committed to innovation and staying up-to-date with the latest trends and technologies in the software development space. This mindset can help us bring fresh ideas and perspectives to a project in the electromobility space, and help the client stay ahead of the curve in this rapidly evolving industry. Our R&D Team develops custom accelerators to integrate via OpenADR, IEEE 2030.5 protocol, OCPP 2.0 and many more...

- **Focus on quality** - Codibly strongly emphasizes software quality and testing. We follow industry-standard testing practices and use tools like automated testing to ensure the software solutions are reliable, secure, and scalable. Additionally, we've built an internal Testing Lab supporting direct charger testing from different manufacturers.

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**CLUTCH REVIEWS**

"Their experience in the energy sector has helped them in developing the specific use cases we're implementing now."

"Their team is extremely impressive, consistently willing to take on difficult projects and meet tight deadlines."

"They went the extra mile for us... so they could come up with the best technical solutions."

"Thanks to Codibly's detailed understanding of the technical requirements, the finished product has shown reliable functionality. The team's scalability, competitive price point, and responsive communication cultivated an efficient partnership."

Yoav Zingher
CEO & Founder of Kiwi Power

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Our Clients include:

- Hubject
- enbala
- Kiwi Power
Introducing DR to your platform based on EV CPO case study
Why should we bother?

- Grid stability
- Cost savings for consumers and utilities
- Potential profits from incentives
- Future proofing for upcoming regulations
- Greater competitiveness of products
Getting exact DR program types

**Incentive-based**
- Direct Load Control
- Emergency Demand Response
- Interruptible / Curtailable load
- Capacity Bidding

**Price-based**
- Critical Peak Pricing
- Real-Time Pricing
- Time of Use
- Peak Time Rebates
Key Features

- Event
- Opt
- Report
- Register party
- Security
CPO (Charging Point Operator) - responsible for the management, operation, and maintenance of charging infrastructure. They install and operate charging stations and provide the necessary services to enable EV drivers to charge their vehicles. CPOs may partner with various stakeholders, such as property owners, utilities, and eMobility service providers, to expand the charging network.

eMSP (eMobility Service Provider) - provides a range of services to EV drivers, including access to charging infrastructure, payment processing, and charging data management. They may also offer value-added services, such as route planning, charging station reservations, and loyalty programs. eMSPs work with CPOs to provide seamless access to charging infrastructure across different networks.
Data retention

Choosing right place to store data may not be obvious decision. **Depending on the storage placement we may increase infrastructure cost although we may gain faster response time** and we will relieve rest of the system.

Most of the time, for data retention we choose from:

- **Device Level** - Low need for data synchronisation but at cost of the poorest performance
- **EMS/CPO** - Usually already has data stored but additional calculations and traffic may affect other parts of the system
- **Protocol Adapter** - Best performance but synchronisation mechanisms must be in place
Downtime of one service may affect the others if it’s not taken into account in architecture during process of program choosing we may endanger our company on penalties.

For system deployed as chain of tightly connected component SLA is calculated as multiplication of availability of each individual components.

Let’s assume that in our example only two services are necessary CPO and OpenADR. To make calculation easier we also assume that they are tightly connected and their availability is both 99.5%.

Resulting availability of our solution would be

99.5 * 99.5 = 99.0 %
Key learning points for your consideration

Here are some good practices we’ve learned based on our experience delivering projects for our clients. They are all practical, actionable, and in our experience, the hallmarks of a successful implementation.

- **Choose DR program carefully** - OpenADR can be a perfect solution for introducing demand response opportunities to your business and users but there are many options and choosing subset of DR program may speed up a implementation.

- **Take future into account** - spending few days on careful planning and explorations of opportunity may save monts of custom development later in the long run.

- **Don't forget the rest of the system** - demand response is just one pice of the puzzle if not implemented correctly it may affect rest of the platform therefore design must take into account that SLA of modules may multiply and place where data will stored also may affect maintenance cost and performance.