

A one-stop electric charging station

Comfort Charge offers an all-inclusive solution for the charging of electric vehicles

Reference project:



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Patrick Eberwein, Comfort Charge Managing Director

By 2030, it is anticipated that seven million electric vehicles will be driving on Germany's roads. However, electromobility is hardly imaginable without a nationwide network of charging stations. Many new charging points are currently being installed. As things stand, there are over 20,000 such points in Germany and over 200,000 in Europe and the figure is expected to continue growing. However, to achieve a functioning charging infrastructure, we not only need providers who make the electricity available; we also need processes in the background that ensure that the billing is correct.

Comfort Charge in Bonn is one of these providers who is operating and expanding such a Germany-wide network of charging stations. The charging point operator (CPO) has around 150 quick charging stations, each with an output of at least 100 kilowatts and numerous further AC charging points. This means that Comfort Charge operates the charging points and the electricity itself is provided by the established energy providers.

At a glance

- Establishment of a new business model (e-charging)
- Management of charging processes for electric vehicles by Comfort Charge
- Complex ecosystem from electromobility providers
- Correct clearing of charging processes
- T-Systems responsible for the implementation and operation of the SAP system
- Scalability for business expansion

Reference in detail

The challenge

For the expansion of the charging infrastructures, Comfort Charge is able to build upon Deutsche Telekom's existing infrastructures. This means that charging points can quickly be installed that the drivers of electric vehicles can use to fill up. As a result, Comfort Charge is a charging station operator. The company operates the physical infrastructure, makes parking spaces available for electric charging, and ensures that the electricity at the charging stations always flows as it should. However, the actual contract partner of the person charging their vehicle is the e-mobility provider (EMP). This provider supplies electricity to consumers and commercial vehicle owners and bills the users for the electricity. Various methods of payment and identification can come into play here depending on whether the driver has a contract with the EMP or spontaneously wishes to use the charging point to fill up. This is the challenge faced by Comfort Charge as the charging point operator: to ensure that the customer ultimately receives a transparent bill, heterogeneous data from various sources needs to be consolidated in a single system. Comfort Charge Managing Director Patrick Eberwein explains: "The prices of the electricity providers, the consumed charging volume of each charging point, the contract data of EMP customers, and the access to payment service providers all need to be integrated with one another. This requires a powerful and reliable backend, as well as an instance that takes care of the clearing, i.e., the harmonization of the billing data with regard to the e-mobility providers."

The solution

In order to meet the high requirements placed on clearing, Comfort Charge – together with SAP specialists from T-Systems – created an SAP-based platform solution for the B2B business. The project began in the second quarter of 2019 and, according to Gerhard Klein, who, as SAP Solution Designer at T-Systems, was responsible for the implementation of the billing application, is "a continuing project that will grow together with the infrastructure and the requirements of Comfort Charge". During this process, the team of developers made the use of standards and the conscientious combination of existing SAP elements their motto. The SAP system is operated in a highly available private cloud hosted in the T-Systems data center. This gives Comfort Charge the option of being able to ramp up capacity quickly in order to tackle the further growth of its business. The first expansion phase was successfully concluded as early as the end of 2019. By successfully implementing the amendment of the VAT rates which took effect on July 1, 2020, the team has successfully implemented a further important phase of the project. In assessing the collaboration, Comfort Charge Managing Director Eberwein and SAP solution architect Klein share the same opinion: the project is a prime example of how well agile collaboration can work. The open exchange between the Comfort Charge and T-Systems teams led to everybody benefiting from the experiences of their colleagues and also being able to utilize their own strengths.

Customer benefits

With the SAP solution in the background, Comfort Charge can offer the entire charging process between various e-mobility providers (EMPs) and customers from a single source. The platform-based, fully automated B2B system ensures correct billing of charging data between Comfort Charge and the various e-mobility providers and, by harmonizing the – in some instances – very heterogeneous data from the various systems of the cooperating EMPs, creates stringent financial processes. Klein: "With our SAP solution, we have added an important element for transparent and efficient billing processes to Comfort Charge's IT environment." Comfort Charge is able to offer its B2B customers all important interfaces for transparent and automated billing. With the full-package solution, Comfort Charge is now able to further expand its business. "Alongside the collaboration with EMPs and the option of charging a vehicle spontaneously, we offer a further service that is particularly interesting for fleet customers," explains Patrick Eberwein. Business customers have the option of commissioning their own, dedicated charging infrastructure. The hardware then either belongs to the company itself or remains the property of Comfort Charge. However, the charging points themselves are not the only matter of interest for B2B customers; the data-related management of charging networks is also of interest to them. "The fact that we, as a CPO, maintain our own backend is a great competitive advantage for us," emphasizes Eberwein. The expansion of the business is ideally supported by the scalability of the background systems. In addition to excellent scalability, the user-friendliness of the application is a real benefit for Comfort Charge. The use of standards gives the system a great deal of flexibility so that almost every billing scenario can be mapped without the need for in-depth configuration at programming level.

Further advantages:

- Access to long-standing SAP expertise
- Established operating model (private cloud)
- IT costs based on the business

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