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Resellers – Key to the long tail conquest

A case study of How to create value for resellers participating in electric vehicle charging platform ecosystems

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ABSTRACT :

The recent rapid increase of electric vehicles on the roads poses a challenge: how to expand the charging infrastructure at the same pace? While governmental bodies incentivize EV purchases and impose restrictions on internal combustion engine vehicles, the demand for public and privately owned charging infrastructure is surging. A colorful set of EV charging companies are all facing the same challenges with their expansion plans, and reseller models just might provide relief to this burning problem.

The aim of this study is to: 1) build understanding of electric vehicle (EV) charging platform ecosystem roles; 2) define the role of a reseller; 3) apply the implications of EV charging platform context to the value creation for the resellers participating in the platform; 4) to explain the value creation mechanisms of the case company for their resellers. The study combines two major research streams, platform ecosystems and value creation, with the specific context of an EV charging platform.

The empirical data was collected with 14 semi-structured interviews with the case company representatives and the reseller partners of the focal firm. The data was analyzed using Gioia methodology, and the abductive process included transcribing the interviews, coding, and thematically categorizing the data. Finally, the results were compared to previous body of knowledge on platform ecosystems, EV charging networks, and value creation in an iterative manner to allow emerging theory to form.

The key findings expose the role of the reseller within the EV charging platform and explains the contextual implications to the value creation mechanisms of the case platform in relation to the classic value creation notions in the literature. The findings raise intriguing questions regarding the nature and extent of the reseller's role within an EV charging platform ecosystem and provide interesting basis for further research.

The theoretical contribution of this thesis is clarifying the actor roles in the specific architecture of EV charging platform ecosystem, and their implications to the value creation theory. The managerial contributions of the study are useful for assessing an EV charging platform's value creation mechanisms, and possibly applicable to other platform businesses.

KEYWORDS: Platform ecosystems, value creation, value creation mechanisms, EV charging platforms, resellers

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ABSTRACT :

Sähköajoneuvojen määrän voimakas viimeaikainen kasvaminen asettaa haasteita latausinfrastruktuurin kehitykselle. Julkisen ja yksityisen latausinfrastruktuurin kysyntä jatkaa voimakasta kasvua hallitusten asettaessa kannustimia sähköautojen hankinnalle ja rajoituksia polttomoottoriajoneuvoille. Värikäs joukko sähköautolatausyrityksiä kohtaa laajentumissuunnitelmissaan samoja polttavia haasteita, joihin jälleenmyyjämallit saattavat tarjota helpotusta.

Tämän tutkimuksen tavoitteina on 1) rakentaa ymmärrystä sähköautojen latausalustan ekosysteemin rooleista, 2) määritellä jälleenmyyjän rooli, 3) soveltaa sähköautojen latausalustan kontekstin vaikutuksia alustaan osallistuvien jälleenmyyjien arvonluontiin ja 4) selittää tapauksen yrityksen arvonluontimekanismeja jälleenmyyjilleen. Tutkimuksessa yhdistetään kaksi laajempaa tutkimussuuntausta, alustaekosysteemit ja arvonluonti, sähköautojen latausalustan kontekstiin.

Empiirinen aineisto kerättiin 14 puolistrukturoidulla haastattelulla, joissa haastateltiin case-yrityksen edustajia sekä jälleenmyyjäkumppaneita. Aineisto analysoitiin käyttäen Gioia-menetelmää, ja abduktiiviseen prosessiin sisältyi haastattelujen puhtaaksikirjoittaminen, koodaaminen ja lopulta temaattinen luokittelu. Lopuksi tuloksia verrattiin sekä alustojen ekosysteemejä että sähköautojen latausverkostoja ja arvonluontia koskevaan aiempaan teoriaan iteratiivisesti muodostaen uutta teoriaa.

Keskeiset havainnot paljastavat jälleenmyyjän roolin sähköautojen latausalustassa ja selittävät kontekstisidonnaisia vaikutuksia tapauksen alustan arvonluontimekanismeihin suhteessa kirjallisuudessa esitettyihin klassisiin arvonluontikäsitteisiin. Tulokset herättävät mielenkiintoisia kysymyksiä jälleenmyyjän roolin luonteesta ja laajuudesta sähköautojen latausalustaekosysteemissä ja tarjoavat mielenkiintoisen perustan jatkotutkimukselle.

Tämän tutkielman vaikutus olemassa olevaan teoriaan on toimijoiden roolien selventäminen sähköautojen latausalustaekosysteemissä sekä niiden vaikutukset arvonluontiteoriaan. Tutkimuksen tuloksilla on liikkeenjohdollinen merkitys arvioitaessa sähköautojen latausalustan arvonluontimekanismeja, ja niitä voidaan mahdollisesti soveltaa muissa alustatalousyrityksissä.

AVAINSANAT: Alustaekosysteemit, arvonluonti, arvonluontimekanismit, sähköautolatausalustat, jälleenmyyjät

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Abbreviations

API	Application Programming Interface
CC	Case company
CP	Charging Point
CPO	Charging Point Owner
CSO	Charging Service Operator
EMSP/EMP	Electro-Mobility Service Provider
EV	Electric Vehicle
FF	Focal firm
HW	Hardware
MSP	Multi-sided platform
RP	Reseller partner
SW	Software
VCL	Value creation logic
X	Extracted company identifier

1 Introduction

Substantial growth of electric vehicles on the roads are challenging the charging infrastructure to keep up with the pace. Driven by 23% annual growth in the electric vehicle (EV) base globally (Carlier, 2022), a myriad of operators with different business models have entered the industry only to find out, that governmental regulations, electricity supply and pricing, existing competition, and unstandardized technologies among others pose massive challenges to the business. Great investments are required to establish and upkeep the charging networks, not to mention the software development that operates as a virtual dynamo for the charging service that the charging points are connected to, and through which the electric vehicle users are able to power up their automobiles. While it is evident that the electric vehicle industry will become a multi-billion-euro business very soon, it is a challenging field to enter due to the knowledge and investment barriers. Businesses are rigorously seeking ways to participate in the novel industry via different paths to harness early adopter potential.

Platformization has taken over industries by a storm. From social networks to ride-sharing applications, the attractiveness of a platform business model has generated an ever-increasing flow of new businesses and even whole new industries. The appeal of the platform model is evident. It offers unprecedented business scaling potential, challenging traditional business models in many industries. The architecture of platform ecosystems is based on networks effects, that enable organizations to generate above average returns by effortlessly connecting masses of users and suppliers to make transactions on the platform. Quite recently, the platform model has become the sought-after business model also in the EV charging industry, which has been growing at dizzying rates within the past few years. The swift development of the field has left the industry blooming with a multitude of roles and business models with blurred boundaries and broad descriptions. The industry is currently at a phase where the EV charging providers are at a cutthroat competition over user bases and charging point network volumes. The biggest and best will win, but how to beat the market and build the biggest charging network?

1.1 Research gap

During the past two decades, a comprehensive body of knowledge has grown around the platform ecosystem. While the literature on platform ecosystems has gained popularity, it has not yet explored the specific nature of EV charging platform ecosystems apart from a few studies within the engineering and technology innovation streams (Madina et al., 2016; San Román et al., 2011). The need for strategic management perspective is therefore evident. In addition, the studies on electric vehicle ecosystems mainly focus on the vehicle manufacturer as the focal firm (see e.g., Li et al., 2017). However, the charging infrastructure hosts an ecosystem of its own, and has not been touched upon by the body of research.

Prior research has focused on three main roles within the platform ecosystem: the focal platform, the users, and the producers. For the case platform, there is one more critical role to include: the reseller. At the time of conducting this study, only a small body of literature was found covering the reseller's position in any type of business network. In the case company, the resellers play a key role as value creators by growing the case platform's business. Therefore, a basic understanding and definition of the reseller's role within a platform ecosystem is needed.

In the EV charging platform context, the roles have previously been lacking boundaries both in research and practice due to the novelty and rapid evolving of the industry. As the basis of a reseller's role, so called "pure reseller", currently lies in the classic definition of an intermediary, there is no understanding of how the platform rules may affect a reseller in a platform ecosystem. This has caused inefficiency in the reseller-platform collaboration as the roles have sometimes overlapped, and at other times responsibilities have been left unassumed. This thesis aims to provide a basic level of understanding of the reseller's role in this kind of an ecosystem. Clarifying the roles allows both parties to focus on their own scopes, while trust is being contractually established as the responsibilities are explicitly assigned.

Together with the platform principles, the platform boundaries and governance mechanisms affect the perception of a desired reseller profile that the platform should aim to cater for if it wishes to grow through the reseller sales. In this case, the reseller can be treated as the fundamental perceiver of value, as it essentially possesses a customer position (Hagiu & Wright, 2015) in relation to the platform. Therefore, the analysis of this thesis will pierce down to how the reseller actor perceives the value within the case platform, and how the value creation mechanisms are then formed around the value generating factors. The research areas of the thesis are illustrated in **Figure 1** to demonstrate the drill-down from macro level concepts to narrower, micro-level examination of the thesis topic.

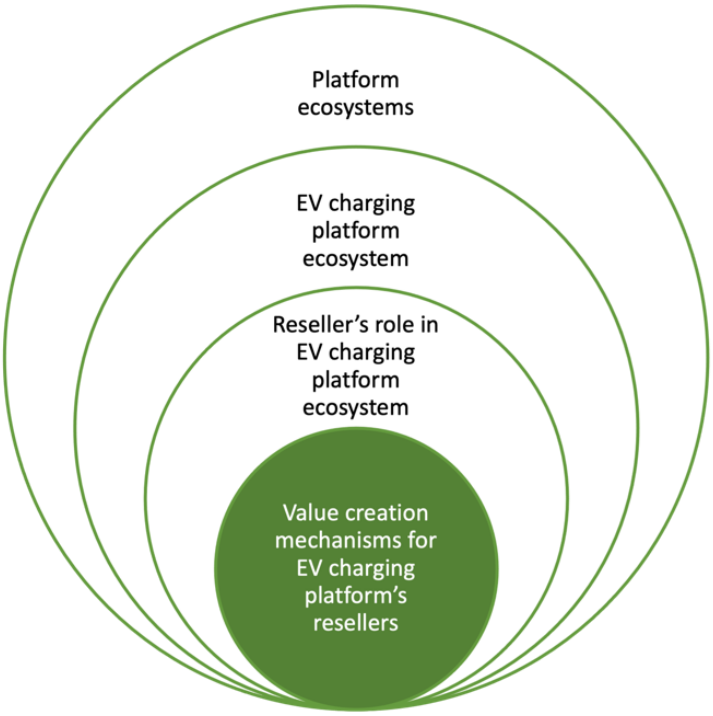

Figure 1. The research areas of the thesis from macro to micro perspective.

1.2 Research question and objectives

This thesis aims to shed light on the role of the reseller within a platform ecosystem, and to identify the key value creation mechanisms between the focal firm and the reseller. The research question is thus summarized as follows:

How does an EV charging platform create value for reseller partners?

To build a hypothesis to answer the research question, a set of four research objectives are formulated:

1. Define the roles and responsibilities of the platform owner and the reseller in the EV charging platform ecosystem.
2. Obtain an understanding of the motivations driving the EV charging platform re-sellers to adopt the case platform
3. Describe the value generating factors of the platform offering

The research question and objectives build theoretical and empirical contribution to the existing research on platform ecosystems and its roles, as well as value creation mechanisms in this specific case context. Additionally, this thesis contributes to the rapidly evolving EV charging platform industry by providing empirical evidence from a company within the field.

1.3 Structure of the thesis

This thesis is divided into five chapters. In introductions I provide the background and motivation for the study along with the case context and establish the research question and objectives based on the found gap in research. We will then move on to the theoretical background that is covered by a literature review on the main research streams. More specifically, the study will examine platform ecosystems, the role of reseller in

them, and value creation streams. The literature review concludes with a synthesis, that forms the initial research framework. The third chapter describes the methodologies used to conduct this study. In this chapter I also evaluate the validity and reliability of the study.

The fourth chapter discusses the emerging empirical findings from the data. Findings are discussed in the order of the research objectives presented in chapter 1.4. The findings are also linked to existing theory in this section. The findings chapter concludes with an emerging framework for EV charging value creation mechanisms for resellers. The final chapter concludes the study and discusses the key findings, theoretical and managerial implications, reviews the limitations, and suggests further research avenues. The thesis structure is illustrated in **Figure 2**.

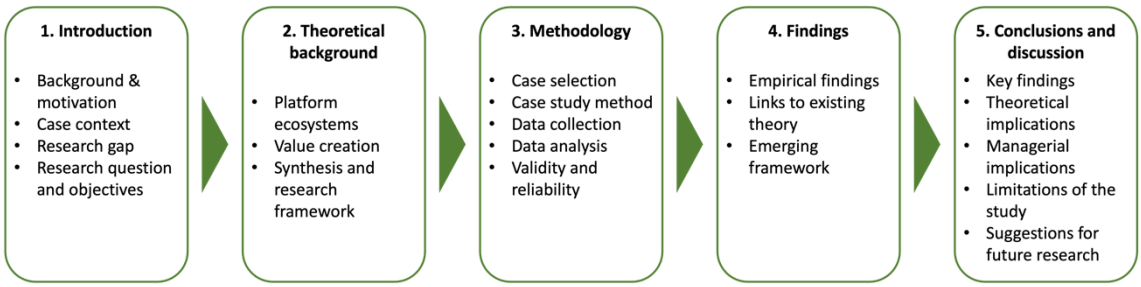

Figure 2. Structure of the thesis.

2 Literature review

This section will build theoretical framework for the thesis. We will briefly discuss the nature of ecosystems in business literature, followed by a more elaborate review of digital platform ecosystems, and eventually narrowing the scope down to the level of EV charging platform ecosystems and the individual actor roles in them. Then we will continue to discuss value creation especially in the platform context. Finally, the literature review will aggregate the research streams and the specific thesis context to form a framework for the value creation mechanisms for resellers in an EV charging platform ecosystem.

2.1 Platform ecosystems

The term *ecosystem* can be traced back to social sciences. In business strategy research the notion was first presented by Moore (1993), who suggested that a company should be observed as a cooperating, competing, and innovating participant in an evolving, industry-crossing ecosystem. Now, three decades later, ecosystems have become ubiquitous in strategy literature as well as in managerial practices. Adner (2017) suggests that the rising interest towards related notions, e.g., business models, platforms, coopetition, multi-sided markets, networks, technology systems, supply chains, and value networks explains the attention towards ecosystem thinking. Due to the mounting interest, a growing body of literature has advanced the definition of ecosystems from different points of view, providing a wide spectrum of differing explanations (Adner, 2017; Kapoor, 2018), creating a 'buzzword-like' phenomenon around the term (Aarikka-Stenroos & Ritala, 2017), without a clear consensus on the notion. It is anticipated, that ecosystems will replace the concept of networks in future research, reflecting the increased interdependence, connectivity, and co-evolution of technologies and actors in network studies (Aarikka-Stenroos & Ritala, 2017; Kapoor, 2018). The abundance of concepts has led to a lack of clarity in the value adding capabilities of ecosystems. On the other hand, the

ecosystem perspective is seen as fertile ground for new ideas on sustaining competitive advantage (Adner, 2017; Hein et al., 2020; Jacobides et al., 2018; Kapoor, 2018).

Ecosystem perspective assumes a macro-level outlook of the external actors partaking in the focal firm's value creation, in contrast to value chain view, that focuses on the internal activities of the firm (Kapoor, 2018). An ecosystem functions by engaging a set of actors contributing to the user value proposition of the focal firm's offering (Kapoor, 2018). The focal offering takes the form of a product or service, and it can be based on a platform architecture. (Kapoor, 2018) As discussed previously, differing definitions of ecosystems have emerged in literature. We will now take a look at some of the novel conceptualization attempts.

An ecosystem consists of a group of actors contributing to the focal offer value proposition (Adner, 2017; Hein et al., 2020; Helfat & Raubitschek, 2018). Jacobides et al. (2018, p. 2264) suggest the following definition: "*An ecosystem is a set of actors with varying degrees of multilateral, nongeneric complementarities that are not fully hierarchically controlled*." Similarly, Adner (2017) suggests that ecosystems should be viewed as structures, in which actors undertake discrete actions in order for the focal value proposition to be created. Deriving from these views, an ecosystem lacks the hierarchical controls of traditional firm groupings and supply chains. The key notion of ecosystems is that all of its members maintain control over their assets, thus a single party cannot one-sidedly dictate the terms for e.g., prices or quantities (Jacobides et al., 2018), as is the case in supply chains and traditional firm relationships.

It is important to recognize the structural constraints of ecosystems. Bottlenecks are one of the key hindrances impeding the performance of a system (Adner & Kapoor, 2016; Kapoor, 2018). They emerge in any kind of a system that constitutes of multiple different components. In the EV charging ecosystem, the current scarcity of the charging points creates a major bottleneck for the EV charging value proposition for the user (the EV driver). Equally as important as recognizing the ecosystem bottlenecks is to understand

how they impact firms, and how they can be resolved through resource allocation, alliances or even benefiting from the actions of the bottleneck component (Kapoor, 2018).

2.1.1 Platform ecosystem design and characteristics

An ever-growing number of ecosystems are organized around a focal platform-based structure. So, what are platforms, then, and how do they operate? To put simply, a platform links different customer groups to facilitate direct transactions between them (Parker et al, 2016; Reillier & Reillier, 2017). It serves as a foundation for companies to join and offer complementary services and products through platform modules (McIntyre & Srinivasan, 2017) for two- or multi-sided markets (Kapoor, 2018), and is therefore sometimes referred to as multi-sided-platform (see e.g., Eisenmann et al., 2006; Pagani, 2013; G. G. Parker & Van Alstyne, 2005). Platforms are found in a wide variety of industries, from traditional manufacturing businesses to high-tech organizations (Jacobides et al., 2018; McIntyre & Srinivasan, 2017; Wareham et al., 2014), and from products to services (Gawer, 2009). As more companies are looking for scalability and evolvability, the platform design provides opportunities for firms to centralize and integrate common features in the core modules and reconfigure expendable modules (Cenamor et al., 2019; Wareham et al., 2014).

Hagiu & Wright (2015) introduce two key features that distinguish MSPs from other types of business models. An MSP 1) facilitates direct interactions between two or more separate sides, and 2) each side has an affiliation with the MSP (Hagiu & Wright, 2015). Affiliation forms through the deliberate platform-specific investment choice that each side makes to interact with each other directly. The investment is often a fixed access fee to the platform, outlaying of resources, or an opportunity cost. (Hagiu & Wright, 2015) In direct interaction, two or more unconnected sides maintain power over the main terms of the interaction, instead of an intermediary having control over them.

The platform owner is seen as the focal point of interest in the literature on platform-based markets (Zhu & Liu, 2018). Platforms rely heavily on independent actors that contribute to the value creation process, the most important ones being complementors and the user base in addition to the platform owner (Adner, 2017; Hein et al., 2020; Jacobides et al., 2018; Kapoor, 2018; Teece, 2018). Platform design begins at outlining the core interaction that the platform owner hosts between producers and users. It is the single most important transaction, that lures the participants to both sides of the platform. The core interaction forms from three fundamental factors: The participants, the value unit, and the filter (Choudary, 2015; Parker et al., 2016). In a most common setting, the participants are the producer and the user. The value unit is defined by the producer, and it contains the information that is being exchanged within the platform. In Uber's case, the listings of available cars are value units, just like postings on any social media platforms are value units. The value units are delivered to the users based on filters. In the case of digital platforms, these filters are often APIs (application programming interface) or other software tools. Additionally, the platform uses filters to manage and enable the transactions between participants. The interactions between the focal actor and the other actors realize the value proposition within the ecosystem (Adner, 2017). Over time, successful platforms create layers on top of the core interactions. (Parker et al, 2016)

Complementors produce complementary products to the focal offer (Kapoor, 2018). The ecosystem actors can share and leverage joint resources and expertise, while utilizing their distinctive resources to create new complementarities within the ecosystem (Cenamor et al., 2019). Jacobides et al. (2018) present two types of complementarities: unique and supermodular. In a *unique complementarity*, Product A and Product B are interdependent, and will not function without one or the other. In a *supermodular complementarity*, Product A becomes more valuable by increasing Product B. A platform ecosystem often holds both types of complementor relationships, as demonstrated in mobile application stores. The store and applications sold there hold unique complementarity as one is close to worthless without the other. On the other hand, the existence of

the apps increases the value of the mobile app store, thus making the complementarity relationship supermodular. Applying the complementor roles in EV charging platform context, we find each new charging point (CP) that is connected to the platform to be a supermodular complementarity, contributing to increasing the platform's value. As the charging points can also be used without connection to the platform, the complementarity cannot be unique.

2.1.2 Digital platform ecosystems

Hein et al. (2020) pinpoint three building blocks that distinguish digital platform ecosystems: status of platform ownership, value-creating mechanisms in the ecosystem, and autonomy of complementors. The first block, *platform ownership,* determines the form and governance of a platform, how the power is distributed and what kinds of relationships exist in the digital platform ecosystem. Single platform owner controls the governance mechanisms, meaning that the power is highly centralized to one actor, the platform owner. In contrast, peer-to-peer community as a platform owner distributes the power across the ecosystem, allowing user governance. *Platform value-creating mechanisms* describe how the platform builds on transactions and innovations by providing economies of scale and affordances. The transaction mechanisms that the platform owner harnesses help the complementors and consumers meet and exchange value, thus creating two-sided markets that leverage cross-side network effects. Innovation capabilities on the other hand define how complementors may create new solutions complementary to the focal offering of the platform. The final block of the platform, *complementor autonomy,* defines whether platform complementors have higher or lower freedom when participating in the value creation with the platform owner: high autonomy indicates a loosely-coupled complementor position, and low autonomy tells that the complementor is in a tight-coupled strategic partnership. (Hein et al., 2020)

Another distinctive feature of digital platform ecosystems is their generativity. It refers to the ecosystems ability to generate new products or outputs without the involvement

of the system originator (Hein et al., 2020; Wareham et al., 2014). The motivation for a firm to form an ecosystem often resides in the desire to extract more monetary value from the market, and the generativity of an ecosystem is the motor for sustained growth. Loose coupling between the platform and its complementor enables greater generativity within the ecosystem, but on the other hand it increases the likelihood of fragmentation, inefficiency, low-grade user experience, and overcrowding. On the contrary, tight coupling upholds the product's position in the market through lock-in effect and asset specifity. High consistency and integration with complementors may protect the platform from appropriation and preserve the level of desired user experience. Tight-coupled complementors are, however, restricted in their innovating pursuits. This further limits the platform evolution and user adoption, which are pivotal for the success of a platform ecosystem. (Hein et al., 2020; G. G. Parker & Van Alstyne, 2005; Wareham et al., 2014)

The building blocks and value-creation mechanisms of digital platform ecosystems are visualized in **Figure 3**.

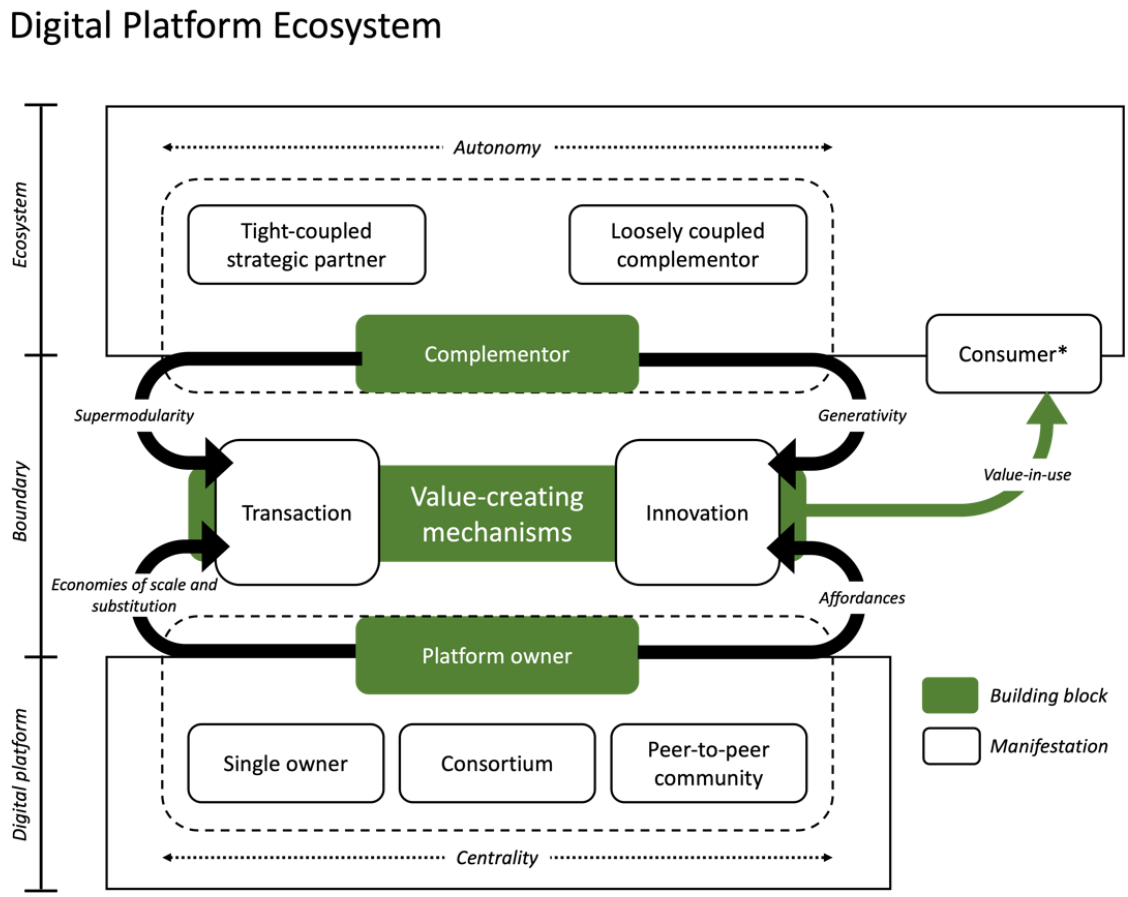

Figure 3. Building blocks and value-creation mechanisms of digital platform ecosystem (Adapted from Hein et al., 2020)

Governance mechanisms

The platform owner has the authority to determine the architecture of the platform, such as the way the complementors can connect with the platform and the way that the platform evolves through ***governance mechanisms*** (Kapoor, 2018; Reillier & Reillier, 2014). For example, a software platform owner can control its complementors through the application programming interface (API), which is sometimes the only way to connect to a software. As the API determines the kinds of calls or requests that a complementor (software or hardware) can make to the software, the platform owner is often in a position to exercise governance over the ecosystem. (Adner & Kapoor, 2010; Boudreau & Hagiu, 2009; Wareham et al., 2014).

Not all complementors bring value to a platform. “Letting a thousand flowers bloom” may result in low-quality offering and adverse customer experience, further damaging the platform’s credibility and economic sustainability (Boudreau, 2012; Wareham et al., 2014). Powerful companies tend to be more tyrannic in their ecosystem development in order to lock-in complements and force the complementors to abide to their rules (Boudreau & Hagiu, 2009). A specific example from the software industry features Apple and its App Store platform, where Apple strictly governs the new applications entering. A high degree of control and strict governance mechanisms often require greater market power from the platform owner (Pagani, 2013). Moreover, with specific requirements for joining, a platform can force the complementors to lock-in through nonfungible investments (Jacobides et al., 2018). This means, that the complementor must make a resource investment to join the platform, and it may not be able to apply the outcome of the investment in other platforms. The phenomenon is visible for example when an application for iPhone’s platform is not directly applicable to Android, requiring often double investment on a similar application development to be able to offer it on Android platform.

The architecture choices of the platform owner also widely affects the complementors (Boudreau, 2010). As every platform has its own unique interface that requires investment from the complementors to join, complementor will have to decide which platforms to participate and if they should be active on multiple platforms. Attending many different platforms is referred to as ***multihoming*** (Kapoor, 2018; Reillier & Reillier, 2014). Multihoming often implies higher investment costs for the complementor, but also increased market opportunities. For the platform owner, growing number of multihoming complementors shrinks the perceived value of the focal platform in comparison to the challenging platforms (Gawer & Cusumano, 2014; Zhu & Liu, 2014). A platform may try to prevent multihoming through governance mechanisms.

Network effects

A key concept in platform ecosystem research is ***network effects***, which refers to the outcomes of user mass and complementors adopting a platform (Eisenmann et al., 2006; G. Parker et al., 2017; Song et al., 2018). Growing the relevant sides of its market is a strategic priority for platforms in order to increase value of the platform (Rietveld et al., 2019; Reillier & Reillier, 2017). While traditional companies create value within the company or supply chains boundaries, platforms form ecosystems of independent actors co-creating value (Hein et al., 2020; Jacobides et al., 2018). By growing the overall value of the ecosystem, the platform owner also increases its direct profitability. Platform owner habitually appropriates a piece of the value that the members of the ecosystem create in addition to its own platform sales (Rietveld et al., 2019).

The foundational premise of platforms is that users value platforms higher when there is an abundance of users on another side of the platform (Cennamo & Santalo, 2013; Rietveld et al., 2019). This is visible in many digital platform-based businesses, from dating applications to massively multiplayer online games and social media platforms. Each of these would provide very little value to a user if there weren't a mass of other users on the platform. Also, a social platform would be of no use to an advertiser without the bulk of users. Thus, the increased value to the participants of the platform is contingent on the number of other users they can interact with (Cennamo & Santalo, 2013), and likewise the success of the platform is contingent to its ability to bring in users and complementors (Parker & Van Alstyne, 2005). The *chicken-and-egg* dilemma of populating all sides of the platform to ensure network effects is one of the most common obstacles for a green platform (Hein et al., 2020).

Network effects play a critical role in the success of the members of an ecosystem. Through network effects, increased value to the user network results in increased value for the platform owner and complementors as well, as the incentives to adopt the platform grow for all actors (Gawer & Cusumano, 2014; Reillier & Reillier, 2014). Contrasting to traditional firm structure, this poses a greater risk to the complementors attending a

platform ecosystem as the failures of other members may pose a threat to the whole system's performance through ripple effects.

Platform enablers

A platform needs to have critical enabling activities in order to become successful (Reillier & Reillier, 2014). The key platform enablers include the governance mechanisms and network effects that were discussed earlier. In addition to these, the platform needs to build trust to encourage interactions among participating actors. Interactions among participants is quintessential part of the platform's existence. In order to attract a critical mass for each side and to enable trust, the platform needs to build brand recognition. Some key enablers of a platform in its scaling up phase involve having supporting capabilities and infrastructure for the growth. The IT capabilities include all systems and software resources, that are required to build a platform business. Frictionless user experience further accelerates network effects, and is closely connected with the final key enabler, payment capabilities, that also has an effect on the user experience. (Reillier & Reillier, 2014). Together these strategic and key enablers are seen to play a major role in the platform's potential success. The platform enablers are illustrated in **Figure 4**.

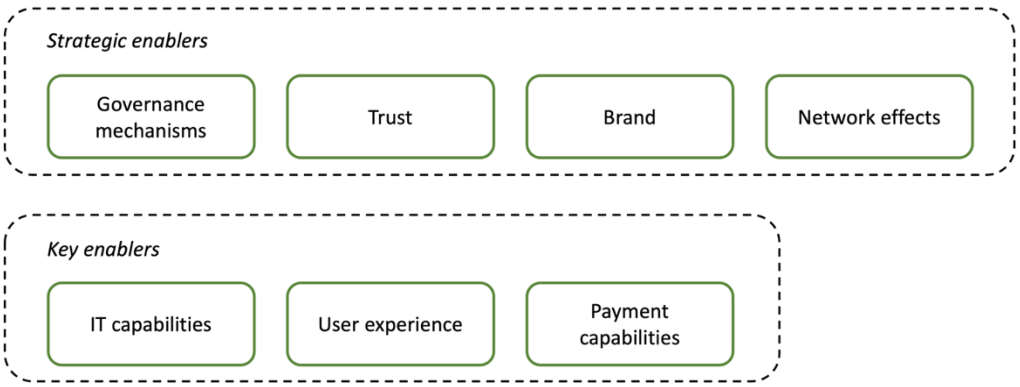

Figure 4. Strategic and key platform enablers.

Modularity and boundary resources

One principle that has been widely adopted from engineering design to the economic stream of research is the definition of platforms as modular systems. According to this view, platforms facilitate innovation by dividing a complex system into detached modules that are connectible to complements through standardized interfaces (Gawer, 2009, 2014; McIntyre & Srinivasan, 2017). Modularity allows the core of the platform to stay unchanged and stable, while complementors and platform owner make amendments and upgrades to the system components (Hein et al., 2020).

Modularity is possible through the platform's boundary resources. Boundary resources determine what kinds of complementors may access the platform. The framework proposed by Ghazawneh & Henfridsson (2013) portrays two drivers of boundary resources design: resourcing and securing. Resourcing refers to the process by which the diversity and scope of a platform is augmented. It typically aids in expanding the actor network around a platform, hence securing new resource and knowledge supply. Securing is the process of increasing control over a platform and its associated services. The securing process often blocks the development of applications that might infringe the platform (Ghazawneh & Henfridsson, 2013). It is important for a platform to pay attention to both resourcing and securing processes, as asymmetric focus risks the performance of the platform. The framework of boundary resources is presented in **Figure 5**.

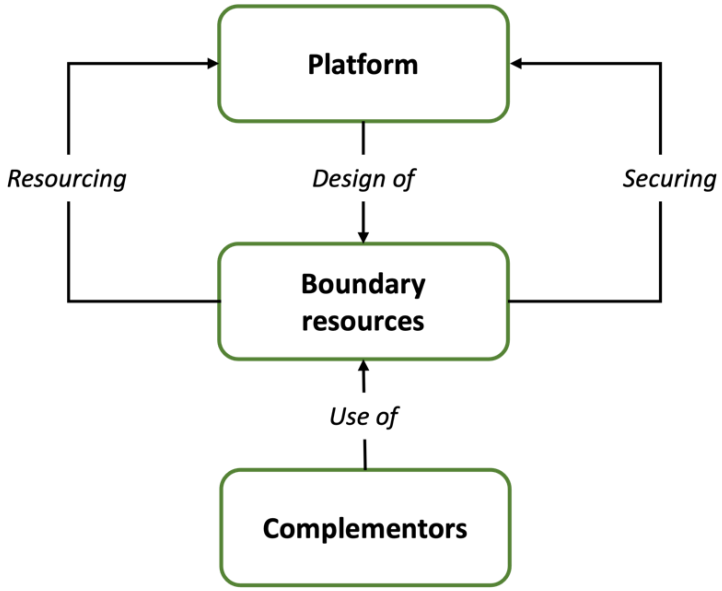

Figure 5. Boundary resources model (adapted from Ghazawneh & Henfridsson, 2013).

While platforms provide great value generation possibilities for some organizations, they are not always the best option for a business logic. Entrepreneurial SMEs may encounter significant difficulties adopting a platform approach, as it requires a set of distinct capabilities and resources (Cenamor et al., 2019; Li et al., 2017). Nevertheless, big data, multi-sided marketplaces, and crowdfunding platforms provide lucrative opportunities for entrepreneurial SMEs in the form of innovative value propositions, contemporary accesses to resources, and novel markets (Cenamor et al., 2019). It is important to acknowledge that successful digital platforms are not the standard, but rather exceptions (Parker et al., 2016).

2.1.3 Electric vehicle charging platform ecosystem

There is a lack of business literature studying the electric vehicle charging platform. The EV charging phenomenon has been of growing interest to the engineering field, but relatively little has been discussed about the business model, architecture, strategies or value creation and value capture models of EV charging platforms.

In order to grasp the essence of the novel field of EV charging, we must understand the roles of key actors within the platform ecosystem. It is safe to say that according to the literature review done by the author, there is a particularly small body of literature describing the EV charging platform ecosystem roles and structure. EURELECTRIC (2013) assembles the identified market roles that occur in any e-mobility market. The primary roles are indispensable and need to be filled in any given EV charging ecosystem. One actor may assume several of the roles if it abides with the regulations in force. **Table 1** presents the primary actor roles found in any EV charging ecosystem. As the prevailing EV charging ecosystem roles and their descriptions are nearly a decade old, it is important to notice the possibility for changes in the ecosystem roles after this classification.

Table 1. Primary and market roles in the EV charging markets (adapted from EURELECTRIC, 2013)

Role	Description
Electricity Supply Retailer	Companies that hold licenses (or are active on the electricity market as not all countries uphold licensing systems) to sell electricity that they produce or buy from the markets to end users, with whom they hold contracts with fixed locations for the electricity supply.
Transmission System Operator (TSO)	A party responsible for a stable power system operation (including the organization of physical balance) through a transmission grid in a geographical area. TSO is also responsible for and determines cross-border exchanges and capacity.
Distribution System Operator (DSO)	A party currently holding and managing the assets for low voltage (LV)/medium voltage (MV)/high voltage (HV) (110kV) distribution networks. Is liable for all loads connections to the electric system and upholding a safe, stable, and reliable network for electricity supply.
Metering Point Operator	The responsible for metering tasks letting a consumer to buy electricity on the supply market through the distribution grid. In many countries the role is played by the DSO. The metering data is critical to facilitate pay-per-use payment models when considered for e-mobility.
Charging Station Equipment Owner	A party who owns the charging station. For example, a city might own the public charging stations, but outsource the maneuvering to a commercial party. Or in a public parking space a firm can both own and operate the charging station.
Charging Station Operator (CSO)	A party operating the charging infrastructure from an 'operational technical' point of view, i.e., access control, management, data collections, repair etc. There can be a distinction between the 'technical' operator and the 'commercial operator' that offers services to the electric vehicle driver by using the charging infrastructure. The Charging Station Operators engaged in commercial activities may buy electricity on the supply market and sell a charging service all included or not including the supply of electricity.
Private Network Operator	A party acting as an electric infrastructure operator, running a private network to which charging stations are connected. This may be especially applicable for semi-public locations. In some situations, the Charging Station Operators may also be the private network operator.
E-Mobility Service Provider	A party selling e-mobility service to e-mobility customers. For example, the service can be a fluid and money free access to charging stations from different Charging Station Operators. It may be bundled with other services (such as EV location, parking etc.), and may contain electricity supply.
E-Mobility Customer	A party consuming e-mobility services using an electric vehicle, including electricity, and charging services.
Data Clearing Processor	A global platform between Charging Station Operators and e-mobility operators to organize and process their exchange of data for a fluid access to charging stations of any Charging Station Operators by e-mobility customers of any e-mobility service provider. It permits service requests to be authorized by identifying the operators involved, and it sends service data summaries to these operators so that they can bill their consumers.

In addition to the EURELECTRIC's (2013) listing, Madina et al. (2016) and San Román et al. (2011) have contributed to the identification of different market roles. The recognized roles are distinguished in a similar manner in the studies, but are addressed by varying names, underlining the novelty of the field. While the listed roles are vital for an EV charging ecosystem, not all are in direct interaction with the EV charging platform. For the purposes of this thesis, a narrower scope on the roles is taken to deep dive into the reseller's role in conjunction with the platform owner's role.

The key activities of an EV charging platform include providing charging services to the EV driver, and on the other hand allowing firms to connect to the service and further grow the network of charging points. In her thesis, Säde (2019) recognizes two different market roles for the platform owner within the EV charging platform ecosystem: the **Electro-Mobility Service Provider** (EMSP or EMP) and **Charging Service Operator** (CSO). EMSP role is connected to the EV users via contract, e.g., a charging service mobile app use contract, and EV users are further in direct interaction with the **Charging Point Owner** (CPO) through the charging activity. CPO is further in affiliation with CSO, that provides the CPO an access to its charging network.

There is one proposed model illustrating the EV charging platform ecosystem. Säde's (2019) EV charging platform's structure follows Hagiu & Wright's (2015) preconditions for a platform formation: it enables the platform to interact with two sides, each being in direct contact with the platform. Here the EV users and CPOs represent the two different sides of the platform, while the platform owner assumes a double role as EMSP and CSO in order to reach both sides. Below in **Figure 6** the market roles and their formation within an EV platform ecosystem are illustrated.

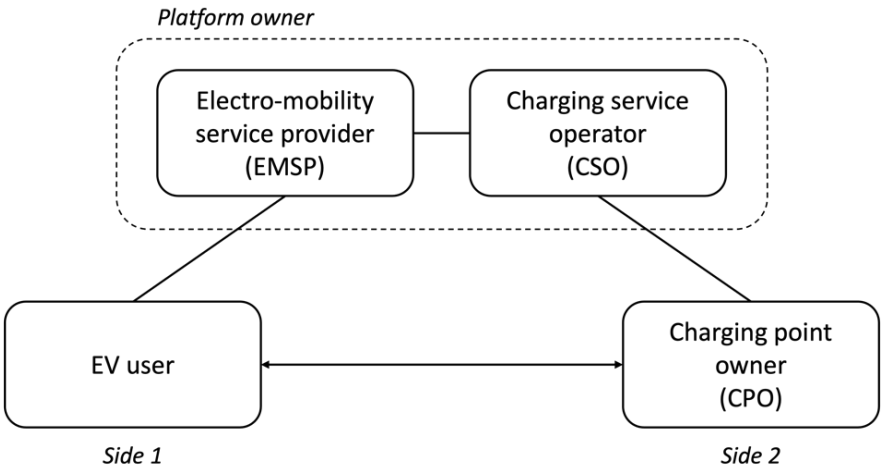

Figure 6. Actor roles within EV charging platform ecosystem (adapted from Säde, 2019).

2.1.4 Reseller's role in EV charging platform ecosystem

The complexity of the reseller's function in a platform ecosystem emanates from its unclear position within the ecosystem. The literature does not explain the reseller's role within a platform ecosystem. The role description in classic business literature is also vague to say the least. In business literature, resellers are described as the intermediaries buying goods and/or services from producers, generating value from the transaction between the producer and the customer (Reillier & Reillier, 2017).

Even though the business and platform literature are missing a clear definition for the reseller, a distinction has been made between the platform and reseller business models by Reillier & Reillier (2017) and Hagiu & Wright (2015a). Reillier & Reillier (2017) have tried to distinguish the platform and reseller models through economic strengths and weaknesses. The reseller controls the customer experience by operating the sales transaction and taking care of the customer front. Examples of customer front include store premises in brick-and-mortar shops and webstore front-end at online stores. In addition, the reseller has traditionally controlled the value chain. It is seen to hold most the power in determining the prices for customers, and to influence the supply side pricing at least

to some extent. The main economic differences between platform business model and reseller business model are presented in **Table 2.** In the table, a complete circle signals possession of the characteristic, a hollow circle means the opposite.

Table 2. Comparison of platform and reseller business models (adapted from Hagiu & Wright, 2015b; Reillier & Reillier, 2017).

Economic strengths and weaknesses	Platform	Reseller
Connects several groups of customers	●	◐
Market discovery	◕	◐
Control of value chain	◔	●
Control of customer experience	◐	●
Supports long tail inventory	●	◔
Potential for hyper growth	●	◐
Management complexity	●	◐
Examples	eBay	Tesco

A further distinction between platform and reseller models is made through network interactions and affiliations. Hagiu & Wright (2015a) clarify the distinction between a reseller business model and a multi-sided platform to depend on whether the sale of goods or services from A to B is through a direct interaction or controlled by the reseller. In the “pure reseller” role (Hagiu & Wright, 2015) the sale is completely controlled by the intermediary, in this case the reseller. The reseller may contractually obtain some control rights to the goods or services sold. These control rights may relate to e.g., the price that A can set, how to goods are transported, non-competing clauses, and the way the products are displayed or marketed. In the “pure MSP” role, the platform has direct affiliation to both A and B, while both sides have direct interaction hosted by the MSP. The “pure” platform and reseller’s business models are presented in **Figure 7** below.

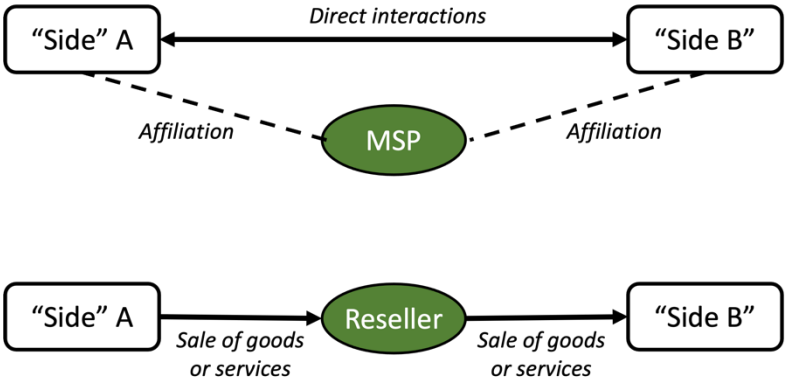

Figure 7. "Pure" multi-sided platform and reseller's business models (adapted from Hagiu & Wright, 2015a)

2.2 Value creation

In this chapter we explore the nature of value and the activities of creating, capturing, and distributing value within the ecosystem context.

> The primary pursuit of any business is to understand what customers value and to create that value for them. While customers are the final arbiter of value, it is the firm's role to explore, interpret and deliver value based on what they believe customers are seeking. *(O'Cass & Ngo, 2011)*

The fundamental mission of businesses is still considered to be creating and maintaining value for its owners. Lately the literature has also begun to involve other actors within the firm's ecosystem as value beneficiaries, such as customers and suppliers.

2.2.1 What is value?

To be able to create or capture value, we must understand value as a concept. Value is a well-researched notion in many disciplines, including business, economics, sociology, and psychology (Kotler & Keller, 2012). In this study we will direct our attention to how

the business literature treats value and what are the implications to strategic management.

Anderson & Narus (1998, p. 54) define value as "*the worth in monetary terms of the technical, economic, service, and social benefits a customer receives in exchange for the price it pays for a market offering*." While value can be explained as simply as the monetary *worth* of an offering, it should be considered in a broader sense. A foundational description of value is provided by Bowman & Ambrosini (2000). They argue that the customer perceived value is "*subjectively assessed by the customer who uses consumer surplus as the criterion in making purchase decisions; and exchange value, that is the price paid for the use value created, which is realized when the sale takes place*" (Bowman & Ambrosini, 2000, p. 13). Many other value descriptions follow the suit by noting that the value perceiver is ultimately the customer.

Chesbrough et al. (2018) further builds on the customer perspective in multi-actor settings, that value is all consequences an actor perceives of a resource deployment in a process. Hence the value perceived may have positive or negative implications to the arbiter. Value can take negative form, if it subtracts from the product's core value (Grönroos, 1997). Yang et al. (2017) coin the term *value destroyed* for value that has negative consequences. To identify the detriments that may affect the customer perception is a key activity in managing a network (Peppard & Rylander, 2006) or an ecosystem.

Added value enhances the value-creating activities of the customers (de Chernatony et al., 2000), which allows competitive advantage to form for the supplying company. Added value emerges from company's ability to exceed its competitors in providing value to customers (Sirmon et al., 2007). Customers will select the good or service that they perceive to offer the largest added value, that is sometimes referred to as surplus (Bowman & Ambrosini, 2000), when compared to the rival offerings. Bowman and Ambrosini (2000) argue, that the amount of added value is only realized at the point of sale. However, this provides complications in assessing the value of longitudinal and complex

services, that have varying availability and value-producing qualities at different points of time.

2.2.2 Value creation and value capture

Value creation is a series of activities that are aimed at increasing value generation for providers and customers (Chesbrough et al., 2018; Dyer et al., 2018; Sjödin et al., 2020). Grönroos and Voima (2013) distinguish value creation as a deliberate action as opposed to value simply emerging. Value creation is also a time-fluid process: value may occur before, during, or after a procurement or use process of an offering (Grönroos & Voima, 2013; O'Cass & Ngo, 2011)

What is common in the modern literature is the customer's role as both the value beneficiary, as well as the arbiter of value (Anderson et al., 2006; Anderson & Narus, 1998; Chesbrough et al., 2018; Priem, 2007). This is also visible in the service-dominant logic (SDL or SD logic), a popular stream in marketing research, in which the customer is defined as the co-creator of value together with the focal firm (Grönroos, 2011; Grönroos & Voima, 2013; Ramaswamy & Ozcan, 2018; Vargo, 2008). The customer is hence in the locus of the value creation process, and value is always subjectively determined by customer's perception and evaluation of the offering. The customer may assess value through specific qualities or performance of the offering, or through their subjective needs. Grönroos & Voima (2013) argue, that as the beneficiary of value, the customer must be the assessor of the value. Therefore, in order to be able to define its value proposition, a firm must conduct an exhaustive and comprehensive analysis of what their customers truly value (Desarbo et al., 2001).

Value is a broad concept across the strategy literature. Value for a company is generally linked to profit generation, and some research streams focus solely on the monetary returns when analyzing value creation. Value chain analysis and strategic networks emphasize the cost optimization perspective, while resource-based view and service-

dominant logic focus on the value creation from the integration and use of resources (Pan et al., 2015). Selected popular research streams and their value creation tenets are presented in **Table 3** below.

Table 3. Value creation process across selected popular research streams.

Research stream	Value creation tenet	Quotation	Selected sources
Resource-based view (RBV)	Firms' resources drive value creation via the development of competitive advantage, especially through the valuable, rare, and inimitable ones.	"*Possessing valuable and rare resources provides the basis for value creation. This value may be sustainable when those resources are also inimitable and lack substitutes." (Sirmon et al., 2007, p. 273)*	(Amit & Zott, 2001; Barney, 1991; Bowman & Ambrosini, 2000; Sirmon et al., 2007)
Service-dominant logic (SDL)	Customer determines the value of the offering; thus, the customer is a co-creator of value.	*"We define value as value-in-use, created by the user (individually and socially), during usage of resources and processes (and their outcomes). Usage can be a physical, virtual, or mental process, or it can be mere possession. Logically, value creation is the customer's creation of value-in-use."* (Grönroos & Voima, 2013, p. 144)	(Grönroos, 2011; Grönroos & Voima, 2013; Vargo, 2008; Vargo & Lusch, 2017)
Strategic networks	Strategic networks create value together through joined activities by several companies. They allow resourcing from another participant of the network, simultaneously minimizing costs of the sourcing company.	*"*[Network] *allows a firm to specialize in the activities of the value chain that are essential to its competitive advantage, reaping all the benefits of specialization, focus and, possible, size."* (Jarillo, 1988, p. 35)	Gulati et al., 2000; Jarillo, 1988;
Value chain analysis	Identifying and analyzing the firm's primary and supporting activities to add value to the output through differentiation or cost optimization	*"the process by which technology is combined with material and labor inputs, and then processed inputs are assembled, marketed, and distributed. A single firm may consist of only one link in this process, or it may be extensively vertically integrated"* (Kogut, 1985, p. 15)	Porter, 1985; Gereffi et al., 2005; Kogut, 1985

Considering the resource-based-view (RBV) perspective, Sirmon et al. (2007) classify resource management as a key practice in value creation. They suggest that firms must focus on structuring their resource portfolio, bundle resources to build capabilities, and leverage those capabilities to capitalize on market opportunities and create value for customers and owners. There are similarities to the RBV in the service-dominant logic (SD logic, SDL). According to SDL, value emerges when social and economic actors combine resources. All actors are thus both value creators and value beneficiaries (Vargo & Lusch, 2016). The blurring actor roles implicate that the value creation is shifting beyond the firm borders and is conducted by multiple actors instead of only the focal firm. Therefore, the resources that one actor sees as valuable, rare, and inimitable (VRI), may not be such for another. Storbacka (2019) argues, that the value of resources materializes at integration with other resources, implying that the resource linkages become VRI through the orchestration capabilities (O) of the market-shaping actor. Also Grönroos & Voima (2013) trace the value creation process to the action where the focal offer together with complementarities are being used jointly. The firm's ability to organize the external and internal resources is therefore critical in use value creation. (Storbacka, 2019)

In the strategic management literature, a distinction has been made between value creation and ***value capture***, as the focal firm often must share the generated value with other stakeholders, such as employees, competitors, or society (Lepak et al., 2007). Value capture denotes the process of ensuring revenues from value creation and dividing them between the actors within an ecosystem (Chesbrough et al., 2018; Dyer et al., 2018; Sjödin et al., 2020). Priem (2007) defines value capture as the appropriation and retention of the customer payments that are made in anticipation of future value-in-use. Value is being captured when a company receives payment from customers instead of competitors, and simultaneously preserves those payments by refusing claims on them from other value system members (Priem, 2007).

Bowman & Ambrosini (2000) state, that value capture is determined by the power distribution in the relationship between buyers and sellers. This view can be broadened to the actors in platforms with multiple sides. According to Lavie (2007), the value capture aptitude of the focal firm is contingent on the attributions of its partners, nature of the relationships with the partners, and the characteristics of the partnerships. While powerful partners can significantly advance the platforms success and value creation possibilities, they also might restrict the focal firm's ability to capture value from the alliance. In addition, alliances with higher resource interdependence generate long-term rents, but also require more challenging governance mechanisms (Dyer et al., 2018).

The value capture potential of the platform owner is highly dependent of the platform's relative position in the market. Platform leader is able to appropriate higher revenues than a new market entrant (Hein et al., 2020). On the other hand, the costs of platform leader's architecture and boundary resources in order to create economies of scale and substitution are often far above those of a newcomer.

2.2.3 Value proposition

"A successful company is one that has found a way to create value for customers - that is, a way to help customers get an important job done." (Johnson & Christensen, 2008, p. 52)

A customer job refers to a pivotal problem requiring a solution. Understanding the job and its extent, a firm is able to design an offering that gets the job done. The level of customer satisfaction rises in conjunction with how precisely the customer's job is done, affecting the offering value that the customer perceives (Johnson & Christensen, 2008). Customer jobs are applied in the customer value proposition (Osterwalder et al., 2015; Johnson & Christensen, 2008). Value proposition intertwines with value creation in a fundamental way: by fulfilling the customer's job to be done, the company is able to create value for the customer (Johnson & Christensen, 2008).

Value proposition should be designed to match each customer segment individually. An organization may have more than one value propositions, as they often serve more than one customer group. However, serving many customers with different jobs may dilute the essence of the company's value proposition, resulting in fulfilling the jobs only partly (Johnson & Christensen, 2008). According to Johnson & Christensen (2008), the four most common barriers for customers to get the job done involve insufficient skillset, inaccessibility, insufficient funds, and lack of time. By tapping on to one of the barriers, a company may generate superior value proposition.

2.2.4 Value creation logics

Jensen & Petersen (2014, p. 560) define a value creation logic of a firm as *"the possession of capacities and/or capabilities that in combination with a specific value proposition provides economic rent potential."* The value creation logics (VCLs) explain, how value can be generated in different business contexts. It describes, describes what is it that the company does *repeatedly* in order to create value for its customers. The literature acknowledges three dominant VCLs: value chain (Porter, 1985), value shop and value network (Stabell & Fjeldstad, 1998). Porter (1985) presented the theory of value chain, which views the principal value-adding activity as a series of actions. Stabell and Fjeldstad (1998) debated that Porter's value chain analysis is missing the value-adding activities in industries outside of manufacturing, and therefore proposed supplementary value structures, including 'value shop' and 'value network'. The value chain, shop and network logics have built foundations for many studies on value creation.

To cater for the needs of modern product-service companies, Johansson and Jonsson (2012) present a fourth VCL, *value package logic*. Package logic recognizes generic issues of the customer organizations and answers them through packaging *solutions.* These solutions can be customizable and applied to different scenarios, allowing economies of scale and higher efficiency for the supplying company. The value package logic's generic issues are similar to the customer job notion, in which the job represents the customers

issues that need to be solved. Therefore, it seems, that the customer issues are indeed something to look at when determining exactly how the value shall be created. The three dominant value creation logics and the novel package logic are summarized in the **Table 4** below.

Table 4. Main identified logics of value creation in literature.

Value creation logic (VCL)	Description	Value-adding activities and inputs	Sources of competitive advantage	Key papers
Value chain	Series of activities transforming inputs to end products	Performing operations in succession iteratively	Ability to operate in scale and iterative supply	Porter, 1985
Value shop	Individual customers' problems solved with custom solutions	Tailoring solutions, often non-repeatable	Capability to tailor to exact customer needs, innovation	Stabell & Fjeldstad, 1998
Value network	Value is created through interactions and co-creation of networks	Facilitating interactions between customers	Relationships and network disposition	Stabell & Fjeldstad, 1998
Value package	Packaging solutions to customers' generic issues into reusable form	Gathering, decomposing, and solving problems and forming a reusable template	Capability to develop repeatable solutions that fits to many customers	Johansson & Jonsson, 2012

More recently, Jensen & Petersen (2014) argue, that the value creation logic of any kind relies on two dimensions: the value proposition (the demand side) and the capabilities that are necessary in order to create economic rents from it (the supply side). Making a distinction from the goods-dominant VCLs, they introduce five value creation logics for different services: analytics services, entertainment, facility services, logistics services and network access services. As a company can create multiple value propositions, it may adopt several value creation logics. It can even utilize a combination of suitable VCLs to fit its needs. Utilizing a value creation logic does not provide economic rent by itself,

but it happens when the value creation logic is applied together with value capture (Lepak et al., 2007; Priem, 2007). In this thesis we will focus only on the non-monetary value and how it is formed in the thesis context.

Overall, the empirical studies on value creation logic are scarce, and most research considering the theme is theoretical. One of the limitations with the current understanding of value creation logics is that it does not consider companies that offer product-service solutions. This provides an avenue for further research.

2.2.5 Value in digital platform ecosystems

Unlike in linear business models, platforms do not have control over value creation. (Parker et al. 2016). They rather create an infrastructure for value to be created and exchanged between the producers and users and set the governance structure for these interactions to secure its own value generation. Additionally, a platform may manage the value of its ecosystem through selective promotion of its complementors, simultaneously managing the user's perception of the platform's extent (Rietveld et al., 2019). This is visible in cases such as Apple's App Store Editor's Choice, or Amazon's Top Picks, which promote individual products to the users with a high visibility.

In a multi-sided platform, every side of the platform both generates revenue and costs (Pagani, 2013). Serving many groups attached to the platform accrues costs to the platform owner, but it can then collect revenue from each side. One side of the platform is often subsidized, meaning that they receive the product for significantly less than other sides, or occasionally even for 'free'. In the EV charging platform ecosystem, the end user is often subsidized in order to maximize the user base growth. Without a vast user base, it is challenging to obtain the main complementors: the charging point owners, that need to make considerable investments to the charging point infrastructure solely based on the revenue potential estimates. The EV charging platform users pay indirectly for

participating in the platform as the costs are baked in the usage fee as a premium, of which the complementor eventually receives a share.

Ecosystem theory and literature on platforms recognize similar value creation and capture models. The ecosystem literature marks complementarities and interdependencies between actors as enablers of value creation in an ecosystem (Kapoor, 2018). In a similar manner, e.g., Parker et al. (2016) find value capturing to arise from platform's network effects. Creating value in an EV charging platform ecosystem is therefore likely to rely on the network effects and interdependencies between actors. In their simplest form, interdependencies connect an ecosystem actor with the focal actor by influencing the focal offer's value proposition with its own offer (Kapoor, 2018). The connection can also form through a transaction, in which an end product of one of the ecosystem actors becomes an input for the other. This transactional connection can in one way be formed as a reseller relationship between the actors.

An early but highly cited study by Amit & Zott (2001) investigate the theoretical grounds of e-business value creation through an empirical study of 59 e-businesses. Their main observation was that the prospective value creation in digital companies hinges on four codependent dimensions: efficiency, complementarities, lock-in, and novelty. They further propose that the business model is a central source of innovation and a fundamental for value creation for the company and its stakeholders. The study provides some grounds to the value creation in platforms, as the e-businesses were at the time of the study perceived as 'highly networked markets', and the platforms are critically dependent on their networks.

Only one study was found to address the value creation between resellers and suppliers. In their study, Weber (2001) states that by focusing on a variety of relational, product, outbound logistics, and service elements, suppliers can give higher value to resellers. They further note that the reseller's perception of these factors is impacted by their expectations and other available offerings. Additionally, they suggested this to be an area

for future research, but it seems that it has not gained much popularity in the past two decades.

2.3 Synthesis

This chapter synthesizes the literature review. The aim of the literature review was to study the research question: *How does an EV charging platform provide value for the resellers?* Two broader streams of literature were examined: platform ecosystems and value creation theory. Next, we will summarize the key concepts and filter them into a theoretical framework that will serve as a basis for the empirical study.

Beginning with the platform ecosystem theory, an important finding was that the role of the reseller is close to nonexistent in the literature. The only exception that the author encountered was Hagiu & Wright's (2015) study, where they draw the distinction between a multi-sided platform and reseller business models. In addition to the ambiguous nature of the reseller in a platform business model, the EV charging platform context is a relatively understudied field especially from the strategy point of view, as opposed to e.g., industrial engineering field. Both the EV charging platform fundamentals and the reseller's role in it provide fertile grounds for empirical research. This study will focus on examining the role distribution between the reseller and the platform owner and describe the platform boundaries and governance mechanisms that affect its value creation process.

To clarify the resellers position in an EV charging platform ecosystem, we must understand the interactions and affiliations between the platform owner and the reseller. Through the analysis of the separate business models of reseller and platform owner, we are able to draw an initial hypothesis of the EV charging platform ecosystem roles for both.

Value creation has been a central topic of interest in management and business literature. It has been studied in the platform ecosystem field as well. Still, there is no consensus on what it is and how companies are able to achieve it. According to the literature review, we can assume that the subjective nature of value creation and its importance in such a broad range of contexts are to blame for the disunity. However, what can be drawn from the research is that the companies focusing on their customers' perspective to value creation generally possess greater potential for long-term competitive advantage (Chesbrough et al., 2018). Just as in a regular business relationship, the liaison between the platform and the reseller will only form if the reseller sees the focal offering as valuable. The customer jobs build the foundation of why a customer would be interested in the focal firms offering: the offering must be able to fulfill a customer's job to some extent (Johnson & Christensen, 2008).

Some similarities were discovered in the platform enablers and strategic management literature on the value creation. The literature on strategic networks recognizes that the more alliances a company forms, the more it appears to capture value over time. Similarly in platform research it is noticed, the greater the network effects, the more valuable a platform becomes.

To understand how the case company is able to create value for its resellers, we must consider the platform ecosystem context and role-specific factors, and their implications to the value creation. The reseller's role in the platform ecosystem is closely intertwined with the value creation formula because the reseller is supposed to sell the focal firm's offering as their own, but without the control over the platform development that the role of the focal firm provides. As stated earlier in the literature review, the focal firm rarely finds success without involving its customers in the value creation process.

The framework for this study has emerged by synthesizing the platform ecosystem literature and value creation theory together with the EV charging platform context. The value creation mechanism for resellers in EV charging platform ecosystem utilizes a

coalescence of the value creation logics currently identified in the literature. It consists of three elements presented earlier in the literature review: the value proposition to the customer, the source of competitive advantage, and the inputs and activities required for the value-adding activity. These are affected by the platform ecosystem principles, boundaries, and governance mechanisms, that create the operational frame for the platform. Identified target reseller profile brings in the context for the value creation mechanisms, as the target customer is the perceiver of value and jointly determines the value of the offering together with the platform, platform users, and their own customers. Thus, the value proposition to the customer is determined by the targeted reseller profile. The source of competitive advantage for the focal firm's offering is likewise influenced by the reseller partners' initial motivation to participate in the EV charging platform ecosystem and what the customer finds valuable in a charging platform offering, *the value generating factors,* also considering the gain creators and pain relievers arising from the customer jobs. Finally, the inputs and activities required for value-adding describe *how the value is created for the reseller in an EV charging platform ecosystem.* The initial framework of value creation mechanisms for reseller-platform relationship in the EV charging ecosystem is presented in **Figure 8**.

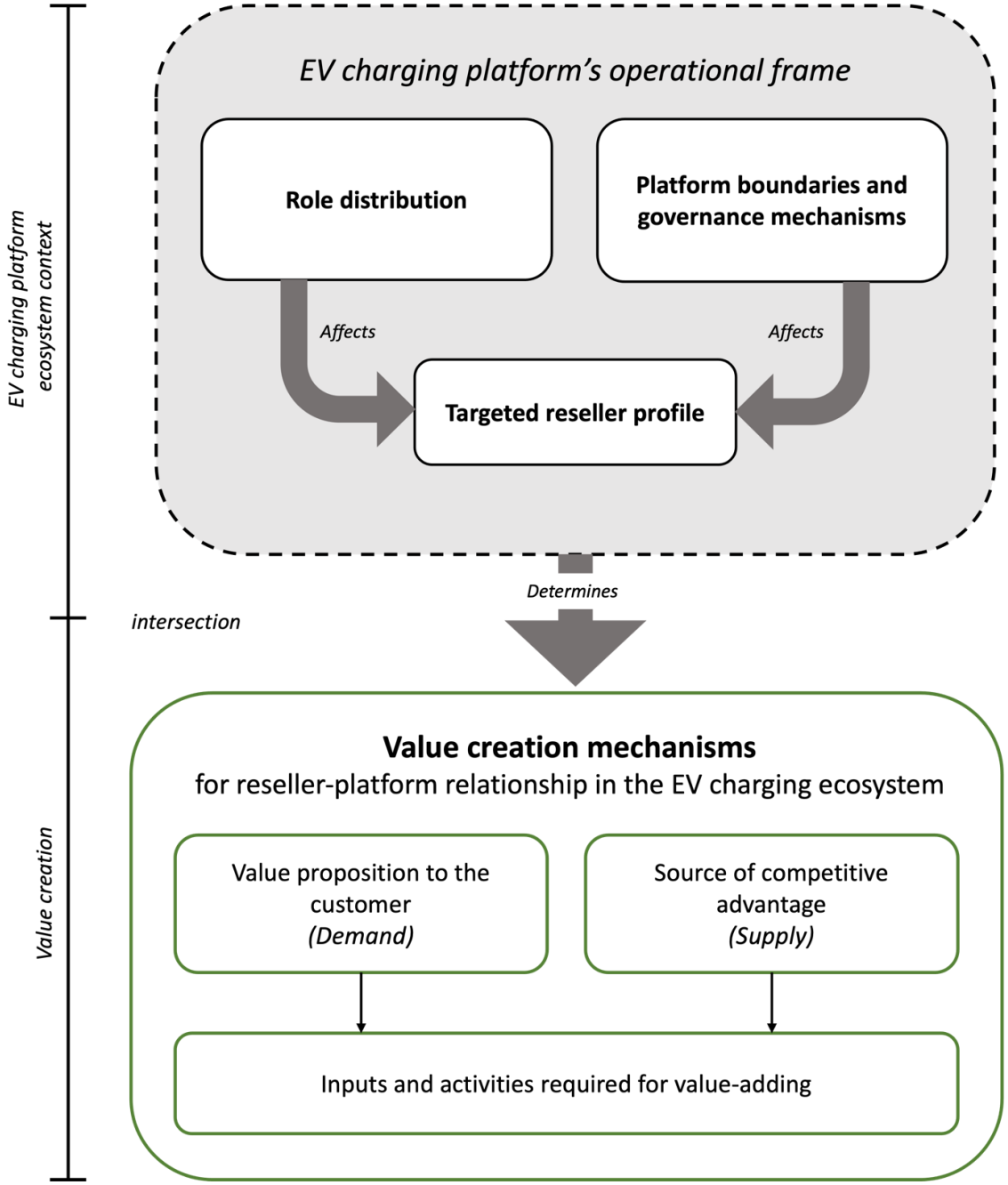

Figure 8. Initial framework of value creation mechanisms for reseller-platform relationship in the EV charging ecosystem.

3 Methodology

The objective of this study is to understand the role of the reseller in contrast to the other actors within an EV charging platform ecosystem. Furthermore, this research aims to describe the value creation mechanisms of the EV charging platform to the said re-sellers. In this section I will present the research process and justify the research methodologies applied. Finally, the validity and reliability of the study are examined.

3.1 Case selection

This case study was assigned as a work commission by the case company; thus, the case selections was clear in that sense. The case company presents one of the biggest and most advanced operators in the field globally. This study is an opportunity to examine a company operating in the rapidly growing and interesting EV charging industry, that has not previously been studied in the strategic management literature. As a "*single-case research typically exploits opportunities to explore a significant phenomenon under rare or extreme circumstances*" (Eisenhardt & Graebner, 2007, p. 27), an excellent opportunity to dive into the field is presented by selecting this particular case under closer examination.

3.2 Case context

The case company is a medium-sized Finnish company providing electric vehicle (EV) charging platform solutions. The case platform enables EV users and Charging Point Owners (CPO's) to directly interact and make transactions. Their offering consists of software and hardware, as well as a multitude of ancillary services: from payment activities and regulatory compliance to energy management and EV user support.

As the EV charging industry has only just begun to catch speed, it offers a sweet spot for potential new entrants. The case company needs to defend its value proposition against commodity trap as a heap of new businesses threaten its market position. Recently, it has recognized the ability to scale at speed through reseller partnerships, that allow the case company to tap into the long tail of the market through 'outsourcing' the selling activity, and thus shortening its value chain. The resellers on the other hand gain access to the rapidly growing EV charging industry with minimal initial investments. However, it has become obvious from the literature review, that the reseller's role is ambiguous to say the least. In this kind of a context, where clear roles haven't been established, the focal firm should aim to determine the role distribution.

The company has piloted the reselling model with its partners and is seeking understanding of how to gain competitive advantage in the eyes of the resellers in the competitive market. Although extensive research has been carried out on platforms, the reseller's role in a platform ecosystem has not been too popular in the literature. The platform owner, users and complementors have been of greater interest due to the focality of their positions in the platform ecosystem. However, as with the case company, platform ecosystems are growing more complex, involving intermediaries to exploit the network effects to the fullest. The power of the ecosystem steps into play when the platform aims to reach full market potential by utilizing resellers for the long tail of the market more efficiently than it would be able to grasp by itself (Tiwana, 2014). To secure its position in the market and gain a powerful reseller partner force, the case company must analyze and understand the factors molding the reseller partners' motivations to adopt the platform. How the platform aims to target the long tail of the market through resellers is presented in the **Figure 9** below.

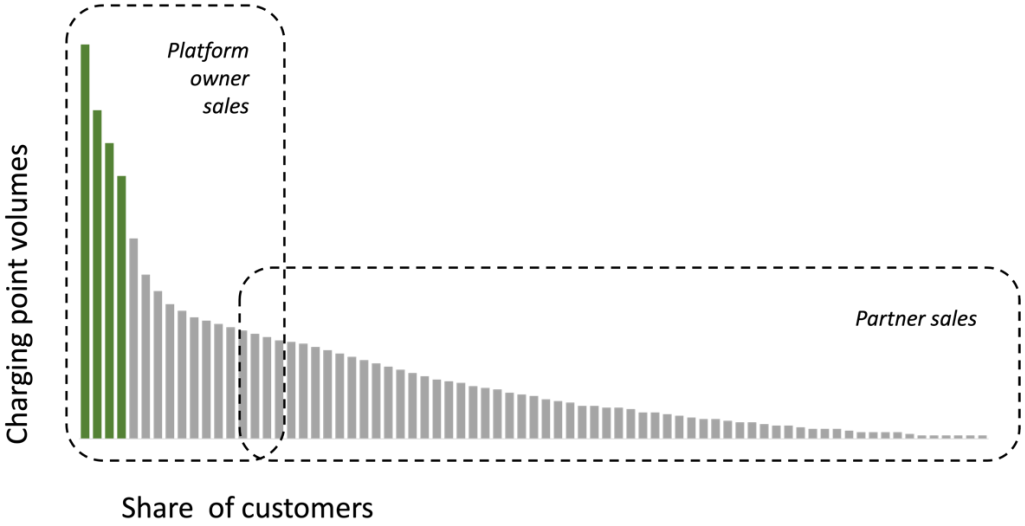

Figure 9. EV charging platform's market division (adapted from the case company's materials, 2021)

3.3 Case study method

This master's thesis follows a qualitative single case study method. Case studies allow diverse perspectives on multidimensional interactions to be collected and deployed, and are an especially suitable form of research for theory construction in a novel phenomenon (Eisenhardt & Graebner, 2007; Gioia et al., 2013). The case study method enables the researcher to explore current events in an actual situation where the context and the events are often intertwined (Yin, 2009), thus enabling a holistic perspective of the topic. The single case study method is especially suitable for this study, as it can capture the exact context of this specific domain in detail.

As of their focus in real life situations, case studies are often conducted in collaboration with practitioners (Dubois & Gibbert, 2010). Real-world management scenarios provide fertile ground for knowledge and theory building, which the practitioners commonly value. Existing research on EV charging platforms and the role of a reseller in a platform ecosystem is scarce. Because of the limited research, there is no framework that could be utilized as a foundation for this study. The case study method provides the correct

amount of flexibility in the research to allow an exploratory theory-building approach, which is needed in this kind of a novel and nebulous research setting. As Eisenhardt & Graebner (2007, p. 25) explain: *"A major reason for the popularity and relevance of theory building from case studies is that it is one of the best (if not the best) of the bridges from rich qualitative evidence to mainstream deductive research*". Moreover, theory-building research answers particularly well to case study questions addressing "why" and "how" in unexplored research areas. As the research questions at hand is "*How does an EV charging platform create value for reseller partners?*", we can conclude that the theory-building single case study is a spot-on choice for this study.

3.4 Data collection

The data collection began by contacting the interviewees. First, I contacted two case company representatives via email, who then provided contact details for 12 interviewees. These informants were then contacted jointly by the author and the case company representatives to encourage participation by clarifying the purpose of the study and to set up the interviews.

Primary data was collected mainly through the individual interviews that were held on Zoom online video conference call tool. The interviews were recorded using Zoom's recording tool after receiving each individual interviewee's permission. The recordings aided in the later transcription process. The primary data also involved observations from the interviews. The digital nature of the interviews hindered the observation collection, but on the other hand allowed playback to recall the validity of the made observation. Some documentation from the case company was also obtained for examination from the case company representatives through an encrypted limited-access portal online. This material consisted mainly of sales material intended for the prospective reseller partners. These documents have not been quoted in this study for confidentiality reasons.

The interviewees represented both the case company as well as their reseller partners. The purpose of interviewing the resellers was to explore their views on their position within the platform ecosystem, as well as provide insights on the value creation mechanisms that the platform facilitates for the resellers. The goal of interviewing the case company was to gain understanding of the reseller model they were building and the tools that they were utilizing for it, in addition to the ecosystem role descriptions from the platform owner perspective. By interviewing both reseller partners and the case company representatives, I was able to juxtapose their views and understand the relationship dynamics that affected the ecosystem roles. Altogether 14 interviews were conducted, and the sample is presented in **Table 5** below.

Table 5. Interview schedule.

Interviewee	Ecosystem role	Interviewee position	Interview date	Interview length	ID
1	Focal firm	Top Management	15th March 2021	47 min	FF1
2	Focal firm	Top Management	16th March 2021	35 min	FF2
3	Focal firm	Director	24th March 2021	56 min	FF3
4	Focal firm	Director	25th March 2021	58 min	FF4
5	Focal firm	Director	26th March 2021	70 min	FF5
6	Focal firm	Top Management	26th March 2021	59 min	FF6
7	Focal firm	Director	31st March 2021	60 min	FF7
8	Reseller partner	Director	29th March 2021	52 min	RP1
9	Reseller partner	Top management	31st March 2021	106 min	RP2
10	Reseller partner	Manager	31st March 2021	63 min	RP3
11	Reseller partner	Manager	1st April 2021	61 min	RP4
12	Reseller partner	Manager	1st April 2021	85 min	RP5
13	Reseller partner	Manager	8th April 2021	95 min	RP6
14	Reseller partner	Manager	8th April 2021	53 min	RP7

In the Table 5 above, the interviewee IDs were abbreviated as FF and RP from the terms 'Focal Firm' and 'Reseller Partner' respectively, with the Focal Firm referring to the case company. The interviewees from the case company were from different functions within the organization, namely business development, sales, and charging solutions development to provide a complete understanding of the ecosystem role descriptions also from platform's viewpoint. The interviewee IDs are also used in the findings section of this study next to the quotes and codes.

The interviews were transcribed in verbatim by the author to prevent loss of original meaning of the quotes, and to be able to conduct rigorous coding. The interviews were conducted in Finnish and English. The Finnish codes and quotes that were used in the preliminary draft of the thesis were translated into English by the author after the drafting to avoid connotation impairment in the translation process.

The informants were subject matter experts in their respective fields, and it was essential to reconstruct the subjective theory of the informants about the studied issue to answer the research question and objectives. To form this understanding, the interviews were conducted in a semi-structured method, which allowed the interviews to flow naturally and the interviewer to ask specifying questions in order to gain a more elaborate understanding.

The preliminary interview questions for the case company and for the reseller partners varied slightly due to the knowledge gained about the case company beforehand. It became more beneficial to ask questions regarding their motivation to participate in the platform from the reseller partners, as it would not have provided added knowledge to the value creation to ask this from the platform. Also, more in-depth questions were asked from the reseller partners about their business model as this varied among the reseller partner informants, and it provided important aspects to the ecosystem roles. The preliminary interview questions are presented in Appendix 1 and 2.

All interviews were conducted separate from each other, and the informant identities have been anonymized in this study. Individual interviews provide a chance to get fairly truthful answers from the reseller partners. However, as the case company is the commissioner for this study, there is a potential bias in the interviews as the reseller partners may have not been fully open about some of the topics discussed despite clarification of the confidentiality of the interviews.

3.5 Data analysis

This study followed an abductive approach in data analysis. In an abductive approach, the theoretical framework evolves together with the empirical observation (Dubois & Gibbert, 2010) in an interplay. This approach was chosen, as there was no hypothesis to begin the analysis with, and because the first part of the thesis was to build understanding of the ecosystem roles based on the case evidence. Abductive analysis allows innovative theories to form without the burden of preconceived theoretical ideas. (Tavory & Timmermans, 2019, Chapter 26) The approach suits this research extremely well, as the literature review provided only limited grounds for theorizing.

As visualized in **Figure 10**, the case study was conducted in iterative cycles, in which the theoretical framework was formed at the same time as the data analysis took place. At first, literature review was conducted to form a basis for the data collection. The theoretical frame began to form during the data collection and continued as the research process moved forward to the data management and to the thematic analysis. The thematic analysis and grouping of the research questions were conducted several times in an interplay with the theoretical framework formation. The research narrative is thus integrated with the theory to show how empirical evidence and emergent theory are tightly interwoven. This interplay brings the paper's conceptual framework and the evidence to the spotlight, and finally forms a basis for the conclusion.

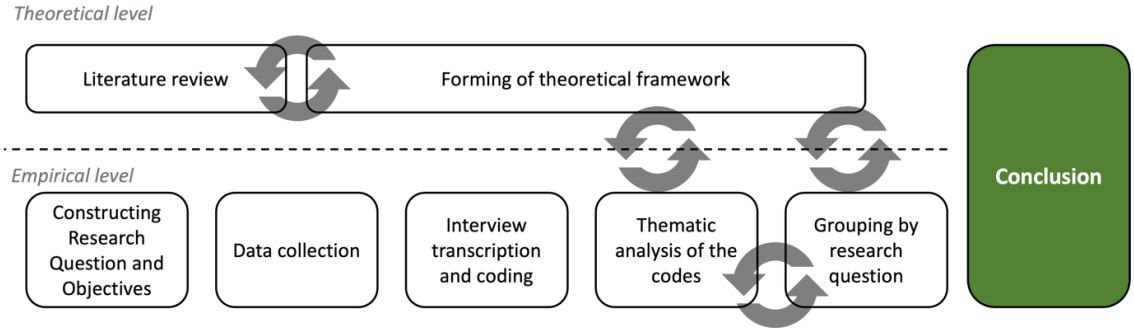

Figure 10. The iterative process of the case study.

Presenting the facts from which the hypothesis was generated is an essential element of empirical research. I will now explain the basis for the study conclusion. The primary interview data was first analyzed by utilizing the Gioia methodology (Gioia et al., 2013). The purpose of this methodology is to have a structured and comprehensive approach to inductive research, which strengthens the quality of a theory-building single case study like this. The initial analysis considered 184 pages of transcribed interviews. From this data I was able to extract 416 initial codes using a combination of In Vivo coding and open coding on the first round of coding and going through the codes by utilizing descriptive coding on the second round. The coding process was inductive, allowing the narrative to emerge from the data. This is especially suitable in the explorative theory-building case study due to the lack of theoretical basis to contrast the findings to. As the approach uses an iterative process in the analysis phase to provide the conclusion, it poses a challenge to show the transparency in the analysis logic. In this study I have provided evidence in the form of coding tables and generous use of quotations to mitigate unclarity in the chain of thought for the reader. The codes were divided into six different categories for further analysis. The coding and the thematic analysis of the codes were conducted in Microsoft Excel.

The first-order concepts developed to second-order themes in thematic analysis phase. These were further grouped to aggregate dimensions that answered to the research objectives stated at the beginning of the study. As explained previously, the iterations took

place also in the analysis phase, meaning that the coding, thematic analysis, and aggregation of themes were conducted several times in order to find answers to the research objectives. The empirical research process is illustrated in Figure 11.

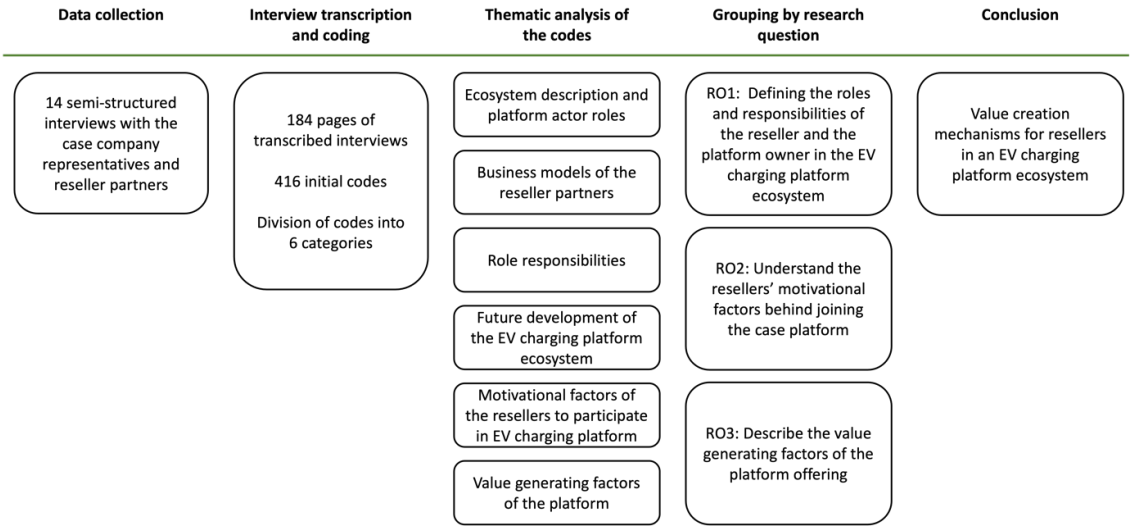

Figure 11. The empirical research process.

3.6 Validity and reliability

The research validity and reliability are key in judging the quality of the study. (Eisenhardt & Graebner, 2007) In this thesis I have followed the best practices in building the foundation for a reliable and valid research. The measures taken are summarized in this section.

Construct validity refers to the quality of the conceptualization, and the extent that it examines the concepts it declares (Denzin & Lincoln, 2018). This thesis provides clear chain of evidence to support the quality of conceptualization by illustrating the research process and the data analysis process earlier in this chapter in Data analysis section 3.4. Furthermore, internal, or logical validity is built through data structure visualizations, quotation tables linked to the data structure visuals, and providing a sufficient number

of in-text quotations. This supporting evidence contributes to the validity also by stipulating the causal relationships between the variable and results in the data structure through the use of first-order concept naming convention that is visible in the visualizations. Triangulation is sought by using different data sources and informant roles in the interviews.

Focusing on a single case frequently leads to generalization issues. (Eisenhardt & Graebner, 2007; Gioia et al., 2013) The thesis case is specific for the EV charging industry, but some parts of the results may be interpretable with caution to other contexts as well. Another possible limitation of the single case study method is the lack of methodological rigor, which is addressed in this study through elaborate explanation and presenting of evidence.

The reliability of a study is measured by the repeatability of it. In other words, the reliability assesses how distinct researchers may arrive at the same conclusion following the same research logic (Dubois & Gibbert, 2010). In this study the reliability is operationalized through grounding the emergent theory to the extant literature. Using a semi-structured interview protocol allows flexibility that is required in an exploratory case study but does not provide particularly repeatable results. This is a known problem to the semi-structured interviews (Saunders et al., 2019), and is addressed in this study by providing the preliminary interview questions in appendices as well as by making complete transcripts of the interviews. These measures provide substantiation for the interpretations made in this thesis.

4 Findings

The findings of this study are presented in a thematically structured fashion. The themes will follow the pattern explained in the Figure 9. presented at the end of the literature review synthesis in the Literature review Synthesis chapter 2.3. We will first look into the role of a reseller within the EV charging platform ecosystem, its relations to other actors and its responsibilities. After defining the ecosystem roles, we will investigate the value-generating factors of the platform from the points of view of the reseller and the platform owner. Then we will aim to put together the pieces for value creation logic within this specific context, and finally synthesize the findings from the empirical analysis with the literature review.

4.1 Defining ecosystem roles

In this chapter we aim to unravel the current role distribution and define the roles and responsibilities of the main actors in the EV charging platform ecosystem. This chapter will thus aim to answer to the first research objective:

RO1: Define roles and responsibilities of the key actors in the electric vehicle charging platform ecosystem.

We will begin the ecosystem role analysis by identifying the key actors. As the research question is: *How does an EV charging platform create value for reseller partners,* we can conclude two key actors that we must draw attention to in this study: the platform owner and the reseller partner. Reseller's role within the EV charging platform ecosystem is a relatively new concept. As stated in the literature review, the current literature is lacking definition and role placement for the reseller within an EV charging platform ecosystem. To clarify the role of the reseller and its linkages to the other key roles within the case ecosystem, we will investigate the interviews of both the case company representatives and the reseller partners. After defining the reseller's role within the ecosystem, we must

ask a critical question: how does the ecosystem and its connections look like after placing the reseller in it?

In addition to the reseller and platform owner roles, the interviews revealed several other identified roles to be in direct association with both of the key roles. The main roles that the interviewees identified within the EV charging platform ecosystem are as follows: charging point owner (CPO), electric mobility service provider (EMSP or EMP), charging service operator (CSO), contractors, EV user, and hardware (HW) supplier partners. In addition, the respondents identified the roles of the platform owner and the reseller partner, which were described to hold at least one of the following roles: CPO, EMSP and CSO. These actors and their functions in the EV charging ecosystem are itemized in the **Table 6**. For clarity, the matrix includes only those roles relevant to the purposes of this thesis. The motivation of this thesis is to examine the value creation possibilities for the platform reseller role.

Table 6. Itemization of the market roles in the EV charging platform ecosystem.

Identified actor	Role/function	Quote	Platform ecosystem roles in literature
Contractors	Installation of the charging points, tarmac fixing, painting, engineering etc.	*"So when a customer calls "can I have an installation", that is a fixed price, and we just send ticket to our contractor, and he pick up the charger, and even in some cases our contractors has chargers on stock at their workshop. So they just go and pick one charger, and they go straight to the customer. They do all the installation and then the customer and the contractor bills us."* (RP2) "*We could also consider contractors as part of the ecosystem*." (RP3)	*Complementor*

Identified actor	Role/function	Quote	Platform ecosystem roles in literature
EV user, End user	Public and private charging point users, EV owner	"*Electric vehicle charging providers and then users. I think they are the most integral part of the electric car charging ecosystem*." RP4 "*If you think about the main roles, of course the EV user is a very clear one*." FF4	*The end user, the user*
HW supplier partners	Charging point hardware suppliers, physical chargers	"*Then there are equipment manufacturers out there, who might even sell the equipment directly to somebody*." RP3	*Complementor*
Reseller	Selling the product-service offering in almost the same form as it was acquired from the Platform Owner	*"And then in between these* [CC and customer]*, so probably a reseller of this sort, or a system integrator which we may also be partly, so that actor is clear at least."* (RP3)	*N.A.*
Charging Service Operator (CSO), Grid owner, "grid operator"	Manages and maintains charging grid. CSO can also have EMSP role	"*The operator itself, which manages the* [charging] *network*" (FF4)	*Platform owner*
Charging Point Owner (CPO) "charging point operator", Customer	Owns the physical charging station, often client of the reseller and/or the case company	*"Then there are the CPOs, or charging point owners."* (FF7)	*The producer*
Electric Mobility Service Provider (EMSP or EMP), "service operator"	Has the EV user customer relationship	"*Then there are those who serve the EV drivers, and are 'the brand'"* (FF4)	*Platform owner*

From the itemization table we can conclude a few things. First, it is apparent that the platform owner still holds the two market roles already suggested by Säde (2019): the CSO role and the EMSP role. Second, the two sides that the platform brings together to interact with each other are the EV user (end user) and the charging point owner (producer). Third, the reseller has an identified location in the ecosystem, between the platform owner and end user, and between the platform and the end customer (often the charging point owner). The same actor structure was found by Hagiu & Wright (2015), as presented in the literature review of the thesis.

Understanding the ecosystem roles and boundaries seemed to be difficult, as many of the informants had differing perspectives on the nature of the ecosystem and their own roles in it. There are a few possible reasons behind the perplexity. First, the industry novelty has generated an abundance of actors with fluid purposes in the market. As the industry has only just reached growth phase, there are no established norms or statutes defining actor roles or their boundaries. The literature has not been observing the EV charging ecosystem roles very closely during the industry's rapid growth, which has in part contributed to outdated actor descriptions, and also to confusing and overlapping roles. Second, the companies within the ecosystem are still on the search of finding the best practices and business models. Many interviewees struggled to pinpoint the key roles, including their own, within the ecosystem, and also could not project the ecosystem in the near future. These findings further reinforce the unclarity of the role descriptions and their boundaries within the ecosystem.

> *"But sort of three main roles* [EMP, grid operator, and CPO]*. In some cases they can be one and the same operator, so it basically runs its own network, wants to own the equipment, and then also wants to be the customer 'front'."* (FF4)

> *"So, for example, hardware producers can start making their own software for that device. So the classic setup has been that someone produces the hardware, and then someone like* [CC]*, who has built their own charging backend, takes that device, configures it into their own backend, and then uses it on top of their backend however they want. This has been a common practice. It seems that some hardware vendors want to get into the service business, and they build*

> *their own software that fits their hardware, and then use it to get into the customer interface."* (RP6)

The case company has only recently started its expansion process through a network of resellers and begun to systematically search and obtain new resellers. Some reseller partnerships have already been formed and tested, and the case company is still in the process of developing this partnership.

> *"There is no single reseller model. Probably the first task is to define the whole term 'reseller', what it means. That still has a bit different* [meaning] *in people's minds." FF5*

> *"Within the old product, we actually have resellers, of which we actually only started to realize six months ago that they were resellers. They were more or less just customers to whom we sold services, and it was technically possible for them to resell it. But really, we've just been happy to see the money coming in. And now, actually, just six months ago, we formalised the customer typology so that we have customers who are resellers and customers who are not resellers. Within our firm, the outline* [is under construction] *of what a reseller is and what it requires and what kind of commercial product or service portfolio to offer to them, versus the normal customer who is not a reseller. So a normal customer is just like the CP owner himself. So now the concept and that relationship with resellers are kind of formalizing." FF3*

By slowly beginning to provide governance and operating boundaries to its resellers had made the partnership not only clearer to the resellers, but also more intriguing as the business development possibilities became more obvious. To further develop the appeal to resellers, the platform had understood the need to formulate parts of the offering to fit into their partners' needs, much like the literature had recognized the concept of value proposition to be formulated in cooperation with the clients.

> *"It's been a conscious choice, in a way. First we have done quite a lot of different kinds of customer projects. Then we have tried to productize them and create our own products that we have been able to replicate and scale up. From this flexibility of "everything for everyone", our operations and offerings are now changing, and we are thinking more about what scales and how we can provide services as efficiently as possible."* FF5

Some current reseller partners' historical role as investors/owners of the case company had created legacy in the relationship. Some of the current resellers had participated in the establishing of the case company and had an owner role or a share of it. This has previously led to prioritization challenges in the product development and supply. The case company has managed to correct this, while some RP's have sold their shares or otherwise detached themselves from the case company's decision-making process. In this case it is possible to hypothesize the close relationships to have affected the understanding of the roles.

> *"So we are also competitors and partners. And that's been a bit of a challenge at times. I know that they are detaching from these operations at least in Finland now, also in terms of sales."* (RP5)

Liberal and inconsistent use of actor names could be one contributing factor to the perplexity of roles. Respondents called both CSO and EMSP roles as "operators", creating discrepancies in the role interpretations. Depending on the individual interpretations and context, the term "operator" referred to four different ecosystem roles: the charging point owner, charging service operator, electro-mobility service provider, and the combination of the latter two. It is still unclear, whether the actor name discrepancies have been part of the cause or the source for the ecosystem perplexity. Some interviewees pointed out the inconsistent use of actor names themselves.

> *"Then you have the entities that service the electric car users, and are the brand, in our industry we call it E-Mobility Provider, so the EMP or EMSP, E-mobility service provider,* [these terms] *are used interchangeably. Then, in practice, there is the operator itself, which manages the network, in some cases it may be the same entity."* (FF4)

Connections between the identified actors are shown in **Figure 12** below.

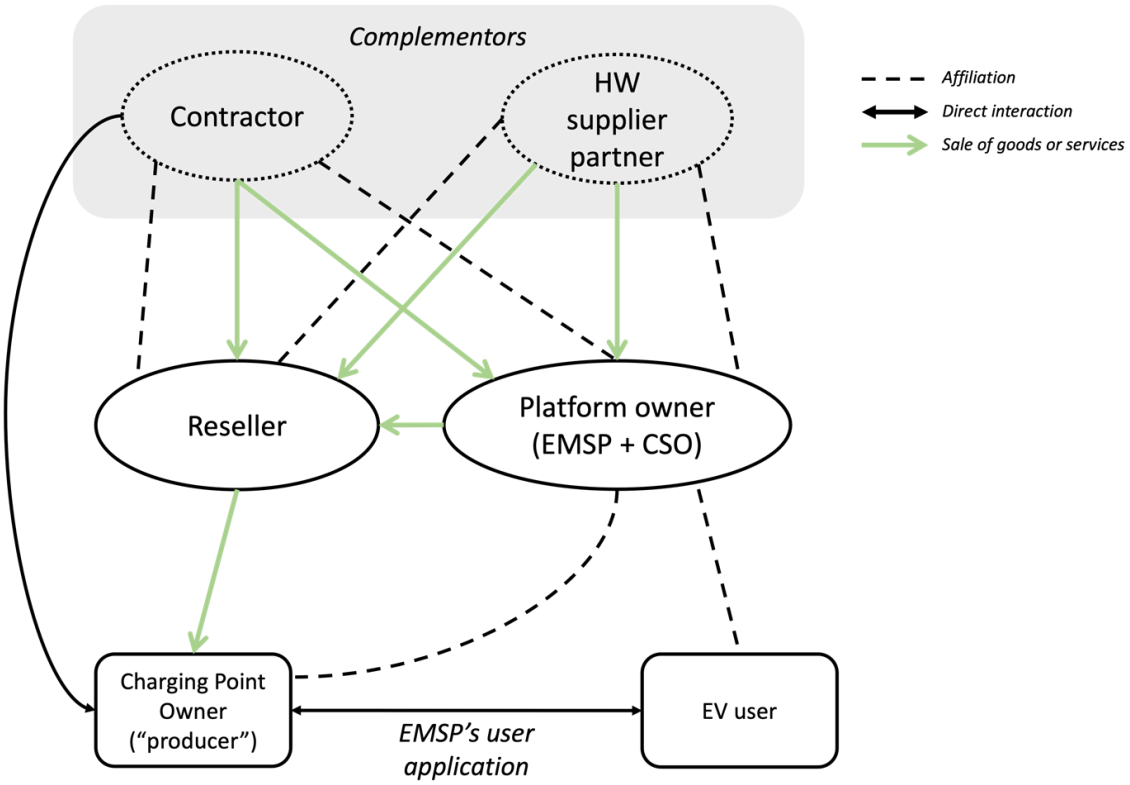

Figure 12. Identified ecosystem actors and their connections.

Figure 12. features the actor roles from Hagiu & Wright (2015) and Säde (2019), completed with the identified actor roles for the purposes of this study. The added roles are the complementors (contractor and HW supplier partner) and the reseller. The reseller is positioned in between the platform owner and the CPO. The platform sells their product-service offering to the reseller, who then sells the offering to the charging point owner.

The case company operates with a bi-actor role within the EV charging platform ecosystem: a Charging Service Operator (CSO) and an Electro-Mobility Service Provider (EMSP). The case company builds its offering on these roles, to serve as a platform for any client or reseller to build their offering on top of, and to have a transaction-enabling platform between the EV users and the charging point operators (CPO). To explain the model in platform theory terms, the core interaction of the case platform is enabling charging

service and allowing currency exchange between the CPO and the EV user. The platform governs the CPO side through service contracts. The CPO must be committed to keep the charging point functional by informing the platform or maintenance contractor about downtimes and incidents. The platform uses restricted API's and its customer application as filters through which the ecosystem actors may join in on the platform.

In the figure we also see, that the complementors have two options to be in connection with both the reseller and the platform owner: affiliation and sale of goods or services. All interviewees recognized the two identified complementors to be directly linked to their companies.

What could be concluded missing from the ecosystem actor descriptions are the energy operators and payment operators. These actors and their likes provide parts of the main offering and are in direct interaction with the platform owner. Although essential to the platform's functioning, they are not in direct connection or affiliation to the reseller. Therefore, they are not considered further in this study.

4.1.1 Role and responsibility division

Now we want to dive deeper into the roles of the reseller and the platform owner. As the platform theory has an ample description of the platform owner's role, we will especially look into the reseller's role and its activities. At this point, we want to know *Who are the resellers?* Let's take a look at the **Table 7**, that shows the role descriptions and responsibilities of the reseller and the platform, mentioned by the informants. Table 7 displays what the informants said about their own roles and cross-roles regarding the role activities and responsibilities.

Table 7. Descriptions of role activities and responsibilities.

Role	Activities and Responsibilities
Reseller	• Offering services to the end user (RP1, RP2, RP5) • Service 'face'/front to the CPO (RP4, RP5, RP7, RP6) • Operating and installing EV charger hardware (RP2) • Expert of its own EV charging market (FF5) • Selling the charging service offering to business customers, public entities, and individuals (FF1, FF2, FF3, FF4) • Consulting potential CPOs with infrastructure and architectural questions (RP2) • Marketing (RP2, FF4) • Expanding the platform's charging network (RP5, RP6) • Connection and grid design (RP2) • Follow the service offering preconditioned by the platform (FF3) • Interaction with the CPOs and maintenance of the CPs (FF4, RP6) • Installation, either in-house or outsourced (FF4) • Commitment to the offering sales (RP7, FF5)
Platform (CSO and EMSP roles)	• Producing and developing charging services (FF4, RP5) • Owning the charging transactions (FF7) • Selling the charging solution to B2B organizations (RP5) • Technical aggregator (FF5) • Contractual service provider (charging service operator) (FF7, RP4) • Charging transactions (FF3) • Maintaining the charging network functionality (FF6, FF7) • Directing the service offering frame and conditions (FF3) • Responsibility over sold hardware (FF4) • Offering education and support for reseller to organize customer service (FF4)

The interviewees offered a broad spectrum of descriptions for the reseller's role within the ecosystem. The main function for the reseller was identified to be at the customer-facing end, providing the platform offering to the end customers. As could be expected, sales to end customers was prioritized as the most important activity of the reseller.

> *"So they focus on the service, the development of the platform and the development of the service platform, and selling it. We're there for the customer interface from a sales perspective and then from an account management and maintenance perspective. And then, to a certain extent, we are also the middle man."* (RP5)

> *"And it's also like companies such as Ticketmaster, I don't know if you know Ticketmaster, they're just selling tickets to events. So we often say we take care of all the sort of complicated things, when it comes to operating and installing an EV charger. But still we're not doing the concert. But we're giving the one that wants to have the concert an opportunity to sell, and have a margin out of his event without needing to invest in complicated payment and ticket service."* (RP2)

While platforms are said to only host transactions and not take responsibility of products or services that the different sides of the platform exchange (Hagiu & Rothman, 2016), the EV charging platform of this case study provides tangible goods and services in addition to hosting transactions. Therefore, it could be considered to possess a hybrid role as a platform and a supplier. This kind of a hybrid role caused confusion over the responsibility distribution.

4.1.1.1 Complementor relationship

In addition to the selling activity, most respondents mentioned the delivery and installing to be one of the main activities for the reseller. This was, however, not always the case, as both resellers and platform owner identified the charger installations and maintenance functions as their own responsibilities. These services were mostly considered to be outsourced from contractors, but some resellers had own installation services in place, as mentioned previously in the complementor-reseller model description. The platform was mostly uninterested to produce these types of services itself and was more inclined to use contractors. Applying the platform theory, the installation and maintenance service is a complementary to the main offering of the focal firm. An implication of this is the possibility that the reseller might partly assume the role of a complementor within the ecosystem. Another implication would be that both reseller and platform are assuming the *responsibility of contracting* installing and maintenance service providers.

> *"That installation is not ours - if you think about it, especially internationally - it's not necessarily an advantage that we're the installer, rather than it being a local electrician on a site."* (FF4)

> *"It's like - it's not that difficult. It's a relatively straightforward thing. [CC] produces charging services and we sell them to customers. It's like - it's kind of a piece of, you know, a game. They provide the blocks; we take them to the customers."* (RP4)

Of the main ecosystem complementor roles, the HW supplier's role was not as appealing to the respondents as the contractor's role. The HW manufacturing was seen as a competitive industry, and the main value opportunities were expected from other roles in the ecosystem.

> *"But we are by no means an equipment manufacturer at any stage, and I don't think we will have our own installers. Those will go through partnerships."* (RP7)

Having countless HW suppliers in the market, the platform wanted to take control of which HW's their reseller partners would provide. The platform justified this with better integration of the SW and HW, as the sophisticated system had not been functioning well on all of the different HW. This was seen as more lean way to orchestrate the value chain that mitigated the unexpected support needs of resellers.

> *"We delivered it also the hardware due to the fact that this hardware is by no means a standard product, but it requires that there is our software, our communication and so on, as well as branding elements. And in practice, if the customer would get the hardware themselves, they would have to use our support to get it to work and it causes us more trouble."* FF2

The platform assumed the connection with the HW supplier to be under its own responsibilities. The company wanted to assure the compatibility of the HW and the software, and also benefit from economies of scale in the bulk charger orders. The responsibility of the HW was therefore seen to belong to the platform's end, as the HW formed part of its turnkey solution. Assuming the HW supplier connection shifts the responsibility of providing well-functioning HW to the reseller's clients. The resellers were generally

expecting that the platform owner would provide reliable and durable HW with long warranty.

> *"Well at the moment* [CC] *is responsible for the platform, like, what's included. And they are also responsible for the devices because they are the middleman to the device maker. We answer to the customer for the whole package, and then we pass the problems on to* [CC]. *We are the main contact for the customer*." (RP7)

> *"And then of course the quality of the equipment and warranty issues should come from the* [CC] *side so that they test the equipment to make sure that it is good and reliable and take good care of the warranty issues."* (RP1)

4.1.1.2 Customer-facing responsibilities

Being at the customer front was an activity that the resellers eagerly adopted in their role. The customer aftersales services and responsibility of the service functionality were linked to the customer-facing position. This means, that the reseller would adopt the responsibility of complaints handling and overall customer service, albeit they are not the party producing the e-mobility service and have therefore less knowledge of the platform offering functionality.

> *"Of course, when we sell to the customer, we are always responsible to them for everything, so the customer is not interested in who is really there in the background. Which then again, perhaps complicates this a little, that in a way we are responsible for the customer, so we have to then take it forward."* (RP7)

> *"The customer is of course not interested where we might procure or subcontract the services, but any potential problems will naturally fall on our shoulders."* (RP6)

Even though the resellers could avert assuming responsibility over the case company's offering due to their position within the platform ecosystem, it seems that it is preferred from the reseller's side to accept the responsibility for failures, customer support and managing maintenance operations. A possible reason to this could be that due to the

ambiguous nature of the growing industry, the CPO's and EV users are having difficulties in understanding the accountability distribution between the reseller and the platform. Assuming the responsibility over technical errors allows the reseller to control the narrative between themselves and their customers, thus increasing trust and positive connotation with the reseller's brand.

> *"When we have a charger connected, at no point we say that we won't deal with this. We need to deal with it. So that is sort of what we do, we take care of all the shit that can come in the future. And even if everything is running smooth, and it has been running smooth for maybe several years, still we can have an issue. And just last week the* [CC's] *backend crashed, so we had a blackout for 2-3 hours. And our phonelines wouldn't stop* [ringing]. *Everybody was calling, they couldn't use the chargepoint. So we always need to be on our feet, to take care of everything that is coming, even if it's a long time ago that this chargepoint was installed, and even if everything has been running smooth, still you can have trouble. So that is our mission to try to keep it as smooth as possible for all the customers."* (RP2)

4.1.1.3 'Expert' position and EV charging market regulations

Connected to the reseller's customer-facing position was the eagerness to be seen as an energy industry expert. The expert role included understanding of best practices in building physical charging network, keeping up to date on relevant legislation and regulations, and staying on top of the industry trends. The resellers were eager to assume this role activity. This could be a result of the reseller respondents' organizations presence the energy business.

> *"Then we're doing the charging and consulting groundwork, connection designing, and technically I often say we do everything related to EV charging"* (RP2)

> *"*[Be] *an expert and a service provider. That's it. — We have the knowledge of the sector, an evolving sector, but it's evolving so fast that regular people can't keep up with it all. And the same goes for municipal decision-makers, business decision-makers, so they have no obligation to stay on top of this ball. We are the one who must stay on top of the ball, who must have up-to-date knowledge of legislation and understanding the latest development in the industry."* (RP4)

The expert position in the EV charging industry included being proficient in designing the CP network on behalf of the resellers customers. This requires a specific technical capability from the reseller to be able to provide these kinds of consulting services to the customers. This was a responsibility that especially those resellers that provided installing and maintenance services were keen to provide.

> *"It's operation, and installation, and providing hardware basically. And consulting."* (RP2)

While the resellers were eager to credit themselves as the industry experts, they also required it from the platform. The resellers expected curated and industry state of art reports from the case company. Also being on the radar about the regulations and legislation were eventually expected more from the case company.

> *"It is essential for us that there is someone who keeps abreast of new developments in the sector on our behalf, and - well, just now there was this kind of absurd regulation that public charging points must be marked with some kind of a sticker to indicate whether this is a type 2 or a CCS plug, which many people think is a completely absurd regulation. For us, it is essential that there is a partner who will then quickly take a stance on what needs to be done about this. For example, reacting to regulation and technical innovations, and putting them on the roadmap, is also partly something that is outsourced to* [CC]*."* (RP6)

Platform is expected to provide all necessary information to support the reseller in becoming an expert in the EV charging field. The emphasis on this responsibility might be stemming from the reseller's value proposition to be in another field, and not having enough EV charging industry expertise. Clearly defining the platform to have responsibility over providing the resellers with industry state-of-art and sharing knowledge openly is expected to aid the resellers in their core action, the selling, and further build a better reseller relationship.

> *"The partner provides the dealer with all the information, tools and product range needed to make the deal a success."* (RP6)

4.1.1.4 Grid operator responsibilities

Operating the charging system is seen as the main responsibility of the platform. It was often referred to as the 'back-end' position within the platform ecosystem, hidden under the customer front like the operating systems in computers. The charging service itself is the system connecting various service providers, such as the energy supplier and transaction service providers. The platform's responsibility over the charging system management is quite logical, as the current understanding of the EV charging platform's ecosystem role involves the CSO role, which has been described as the grid/network operator in previous literature. The case company also recognized that they were required to fix most problems related to the charging services, even though the reseller partners assumed the customer-facing communication. This is due to the issues often being related to the charging grid, which the reseller partners are not able to operate.

> *"Well if we go right to the core role, so we have this background system to maintain. That is, the fact that we take care that our cloud service works, payment systems works, that people will be able to start the charging, authenticate and pay and stop the charging. That's perhaps the fundamental case for us."* (FF6)

Vehicle-to-grid (V2G or V2X) technology is considered as an essential part of the technical development in a future-proof EV charging platform ecosystem. Case company has built their offering to be V2G ready, meaning that it is possible for an EV user to use the charging network both ways: to charge their own vehicle, and to balance the electricity grid when they don't need their vehicle. Case company considered maintaining and developing this multi-way electricity grid to be one of their main responsibilities. The V2G readiness had been already advertised to the reseller partners and their customers, and therefore it was assumed to be on the platform's end of responsibilities. It is also aligned with the prevailing understanding of the platform's role as the CSO. Both resellers and the platform owner respondents saw that the in the near future the V2G network operations would be one of the main responsibilities for the platform, and that it would have a significant impact on how the EV charging platform ecosystem will be organized.

> *"In the future, I think most of these challenges that we're facing can be fixed with the DCO, the grid owner, and a proper smart solution, where the grid owner and the operator can communicate through the charge point, so that they can balance the grid, and we can use the EVs like vehicle-to-grid and other technical stuff that* [CC] *is doing. So I think those two are the main role players."* (RP2)

Neither reseller nor platform wanted to take responsibility in dictating the service pricing for EV users. This was identified to be part of the CPO's rights, as the end user pricing would not affect the CP-generated revenues to the reseller or the platform. By not controlling the end user prices, the reseller and the platform allow flexibility for the CPOs, much like in the traditional fuel distribution systems in which the price varies from station to station. This could have a positive effect to the platform growth ambitions by intriguing more customers to set up CPOs.

> *"In no circumstances we control the price on the service, so it's always on the end of the CPO or the chargepoint owner to control how much he wants to have for each kwh or minute, or does he want to give for free, or do does he want to do for only special customer or private network and whatever."* (RP2)

4.1.1.5 End user customer support

First tier end user support was assumed to be joined with the reseller's customer-facing role. However, the customer service was orchestrated very differently among the reseller partners. Some partners had a branded end user service provided by the platform, while some resellers provided end user support themselves. End user customer service for EV charging is a complex matter. To be able to respond to various problems that EV users are facing at the charging point, the responding organization needs to be prepared to take care of issues from multiple areas of expertise, e.g., hardware functionality, platform and mobile application, payment transactions, and electricity flow.

Taking care of the end user support was seen to be somewhat connected to the customer-facing position of the reseller. The case company was determined to have proper training in place for its resellers to be able to provide adequate customer support for

their clients. The company believed that the resellers would not be able to grow their business without having a profound understanding of the offering functionality. It therefore expected the resellers to stay on top of the offering and the customer support to some extent. Some resellers seemed to be more prepared for providing customer support independently than others.

> ”*And of course take responsibility for their own business around this, that they must also be able, when customers are in contact, to serve their own customers and be professional enough in it, and maintain that relationship with customers.*" (FF4)

> *“It is absolutely essential that when we want to increase the number of* [X] *charging registrations, to some extent the number of problems and errors will also increase. And then, from the point of view of scaling our business, it is essential that we have a channel that filters out the majority of those problem situations, and that we can deal with them in a scalable way.”* (RP6)

One reseller informant provides customer support entirely without [CASECOMPANY]. The reseller partner sees increase in its brand value in being able to respond to the end user issues promptly and having a profound understanding of how the solution works. This requires the reseller to operate the customer service independently and to have strong expertise within the industry.

> *”And then of course what gives us last, basically gives us nothing, there are EV owners customer services. When there are people having trouble at the charge point, people just calling and asking and sniffing.. And today I think 20 or up to 35% of our time goes to customer service, that doesn't give us anything at the moment. But we are also creating a brand and a value, so we have outstanding – we call it super service. We have hotline 24/7 so you can call us in the middle of the night. — But I look at this like marketing cost, so I could spend a lot of money on marketing and advertisement and other stuff so we intend to.. And that is one thing we do, and it takes a lot of energy.”* (RP2)

Based on the interviews, it seems that those resellers, that had the internal capabilities to install and maintain the CPOs were more inclined to provide the end user support themselves. The resellers that had outsourced these functions to contractors also

outsourced the customer support. This could be due to the fact that they don't have enough resources or capabilities, such as knowledge about the offering technicalities to provide adequate end user support. Also, the cost of providing customer support internally may become quite costly to the reseller, especially if they are only planning to sell the platform offering, and not connect complementarities to it.

4.1.1.6 Commitment

Both resellers and case company informants mentioned the importance of commitment to the reselling partnership. It was expected from the counterparty, but also mentioned as a responsibility of the informant. Committing to the partnership may reduce multihoming and thus increase the lock-in effect, keeping the resellers tied to the platform (Amit & Zott, 2001; Hein et al., 2020; Jacobides et al., 2018). On the other hand, commitment expectations may result in rigorous development of the platform.

> *"What does it require from us? Well, maybe it requires us to commit to it. In a way, if we agree together on a reselling model, then it also requires us to commit to it, so that we don't stray from it but stay with the model and don't take detours elsewhere. But it requires that both parties are happy with it, and that we have agreed on what each of us will do individually."* (RP7)

4.1.2 Identified reseller models

As the first research objective was to understand the exact roles and the responsibility distribution within the case ecosystem, we must understand the nature and business models of the resellers. It has become evident from the interviews that the resellers have different growth objectives for their EV charging businesses. These affect the way each of the resellers want to operate within the ecosystem. We will now take a more focused approach to the reseller profiles and illuminate the differences and similarities between them.

While some resellers were identified to have a pure intermediary position in the ecosystem, some had assumed part of the role description that the platform widely recognized as their own. The blurring of the role boundaries is due to the different fundamental business models the reseller companies have, and because of the lack of standardized reseller model from the platform's side. Now the resellers have been signed one by one, and each one has a different contract with the platform with unique terms.

> "*What we've been able to grow and operate on in the past has been a certain kind of flexibility. And in the past it has been that we have been pretty much adapting to the needs of the customer and developed things that the customers want, and with that we have been able to grow at the beginning.*" (FF5)

The platform's current reseller customers could be classified into three different categories based on their business growth objectives. The reseller's growth objectives are derived directly from the company's business model as described by the reseller informants. The differences between the resellers were quite profound and seemed to affect the distribution of responsibilities between the reseller and the platform owner to some extent. **Table 8** presents the three identified reseller types, their differing business models, and growth objectives, as well as the implied impact on the responsibilities between the reseller and the platform compared to the prevailing understanding. It also lists the platform rules that affect each of the reseller types in a different way, providing the platform ecosystem theory standpoint to the emerging theory. Let's us now take a closer look at the identified reseller types.

Table 8. The identified reseller models.

Reseller type	Business model	Business growth objective(s)	Responsibility shift between the roles	Required role-specific capabilities
Specialized reseller	Intermediary services, value comes from the surplus of reselling the CC's offering to CPO's and other entities	Increasing offering sales volumes	*None*	Sales
Hybrid reseller	An actor from a related industry, e.g., energy and utilities. Has expanded to offer EV charging services through vertical integration	1) Assuming EMSP role to serve EV users 2) Bundling offerings	1) Services to the EV user (from CC to reseller) 2) Operating the charging management service (from CC to reseller)	1) Sales 2) Electromobility service operation
Complementor-reseller	An actor from a related industry, e.g., energy and utilities. Has expanded to offer EV charging services through vertical integration	1) Selling the offering to CPO's and other entities 2) Selling complementary services (e.g., maintenance and installing of the HW)	HW installation and charging point maintenance (from CC or contractor to reseller)	1) Sales 2) Operating installing and maintenance network

4.1.2.1 Specialized reseller

The **specialized reseller partner's** business model forms around reselling the EV charging platform's offering. It operates in between the platform and the CPO through the offering sales. The role is similar to the one described in the literature as 'pure reseller' (Hagiu & Wright, 2015), as it acts solely as an intermediary in the value chain. In the specialized

reseller model, the platform has the relationship with EV user through an EV charging mobile application, that acts as the user interface for the charging service that the EMSP role (also part of the platform's role) manages. The specialized reseller is interested in solely the sales operation, in which it receives sales commission from the platform, but does not assume responsibility over the offering functionality, installing, nor maintenance.

4.1.2.2 Hybrid reseller

Hybrid reseller is a company that has been operating in another industry than the EV charging. Hybrid reseller's offering often has some connection to the EV charging industry, e.g., it may offer energy or utility services. Its main objective is to grow sales of all verticals by bundling their offerings with the EV charging. In the hybrid reseller model, the reseller assumes the EMSP role, which has traditionally been part of the EV charging platform's role description together with the CSO role. These companies often have the desire to be on the market with their own company name, and not operating under the case company's name. By assuming the EMSP role, the responsibilities of having the EV user contract and operating the charging management service shift from platform to the reseller.

> *" Then the second piece is the charging solution customers, for example companies or residential buildings, and we sell them a charging equipment package. – – In practice, what we want to be in the ecosystem - also in the future - is the customer interface both to charging solutions and to EMP charging service customers. That we are the total solution provider from the customer's point of view for everything related to charging."* (RP6)

The motives to assume the EMSP role included the desire to generate more revenue streams through continuous billing. The hybrid resellers said that the charging services would be easier to integrate to the existing portfolio when they assumed the EMSP role. They also saw future potential in developing the EMSP role to include the CSO role as well. From the platform's point of view the reseller would then become its rival. The

platform had already anticipated this and thought that it would still be able to serve these reseller customers, but with a modified offering.

> *”We kind of see such a great potential there. That just because [X] has six hundred thousand customers, so in a way most of them will get a charger one way or another. So it is seen that we want to serve them well and get more revenue through that.”* (RP7)

> *”On the customer solutions side you can find like x number of different actors who... how should I say. Who have an interest in becoming an operator. So to the EMP/CPO side. So there are different players who have an interest in entering this race, and then again we sell this service to them.”* (FF6)

It seemed, that the hybrid resellers had envisioned the shift to become an EMSP operator early on in the collaboration with the platform. The motivation for incremental shifts to eventually become an EMSP/CSO operator was to get a head start in the market by using the case platform’s offering.

> *” So, the background to how we have been extended to the EMP role, so we have from the very beginning had the idea that we will do it in stages. That we do not build the world ready, but make one kind of version, where we have to make various compromises, and it is not yet a perfect solution. But we wanted to get going quickly and get that customer experience and create our own brand also on the download service side.”* (RP6)

While showing interest towards the EMSP role, the hybrid resellers were not interested in taking on complementor roles. They were more inclined towards assuming the contractor relationship for installing and maintenance operations rather than setting up own division to provide these services.

> *”But we are by no means an equipment manufacturer at any stage, and I don't think we will have our own installers. It will be through partnerships.”* (RP7)

4.1.2.3 Complementor-reseller

The complementor-reseller aims to grow its business through selling complementary services to the case company's EV charging offering, such as installation and maintenance services. The complementor-reseller's business model can be in another industry than the EV charging, as its motivation is to resell the case company's offering as it is. Looking from the platform theory perspective, this reseller type assumes the role of the complementor, becoming more integrated to the platform than a specialized reseller and contributing to the platform offering through modularity. The case company gives up the maintenance responsibility to the complementor-reseller, who then either fulfills this responsibility through contractors or by growing its maintenance capacity.

> *"Then of course we have maintenance... Or rather, the maintenance service for these already exists. We don't usually sell the [CC's maintenance] service, but we sell our service for these. So we still have the installation company around so we can take all the [CC] services under a beautiful umbrella and check that they work and then, if necessary, service and replace them. That's kind of the steak on top of it."* (RP4)

> *"When it comes to electricity, we only work with subcontractors. — So they just go and pick one charger, and they go straight to the customer. They do all the installation and then the customer and the contractor bills us. — So the only thing [The reseller partner] is doing is creating pipelines for customers to have everything done. But the plan is, later this year, to have our own staff in installation because it's getting more and more about installation. So the plan is to have our own employees, like the electricians to do that, but at the moment they are contractors."* (RP2)

The complementor-resellers saw that their revenue streams regarding EV charging were mostly relying on the complementing services. The complementary services are likely to form continuous income, while the reselling activity is often a one-time action. Some resellers sold the platform offering on net-zero or even at a loss, and then compensated the sales by bundling the installing and maintenance on a higher profit to the sale. Being able to diversify their offering to continuously billable services could be interpreted as one motive for the reseller to assume other ecosystem actor roles in addition to the reseller role.

> *"And we see it as not just equipment sales, but more the installation and maintenance activities and their monitoring and things like that are of interest to us. Perhaps we can sell parking spaces as services and so on, that we want to develop service products of this kind, but it seems that equipment sales in themselves are not so inspiring to us. But we want the continuous billing to get more into cooperation with customers. And especially these charging systems for companies and residential buildings are an interesting target group."* (RP1)

> *"The service we are providing with* [CC] *is sort of… we run it on 0* [profit margin] *today. But the service is really really important to be able to sell the charger and installation, so we bundle it together. So you choose your chargepoint installation and then we provide you with a service package. In the future it will give us more money, and I believe that. So this is sort of our business flow."* (RP2)

Complementor-reseller could generate more value by utilizing its core capabilities, such as the maintenance and installing, in other EV charging platform ecosystems through multihoming. The platform should be aware of the risks to the platform's reputation arising from multihoming and aim to mitigate them, in example by having evaluation measures for new complementor-resellers in place. In platform theory, these governance mechanisms and tight coupling of complementors are known to raise the perceived quality of the platform, but they often simultaneously lower the value creation possibilities through innovation, in other words reducing generativity of the platform.

> *"We do not work directly with other service providers and it does not bring us added value, because if we are already in one ecosystem, so to go to another service ecosystem, that's a massive undertaking."* (RP5)

The three different reseller types have distinctive positions and connections within the platform ecosystem. Outlining from the prevailing platform ecosystem illustration presented in Figure 12 in the literature review, we can place the different reseller types to the ecosystem context and illustrate the affiliations between the main actors. A visualization of the connections within the immediate platform ecosystem depending on the reseller type is presented below in **Figure 13**. The simplified illustration shows only the immediate and most significant affiliations between the reseller, platform, CPO and EV

user, thus not all scenarios have the complementors illustrated. Figure 13 also features the ecosystem scenario without resellers for reference.

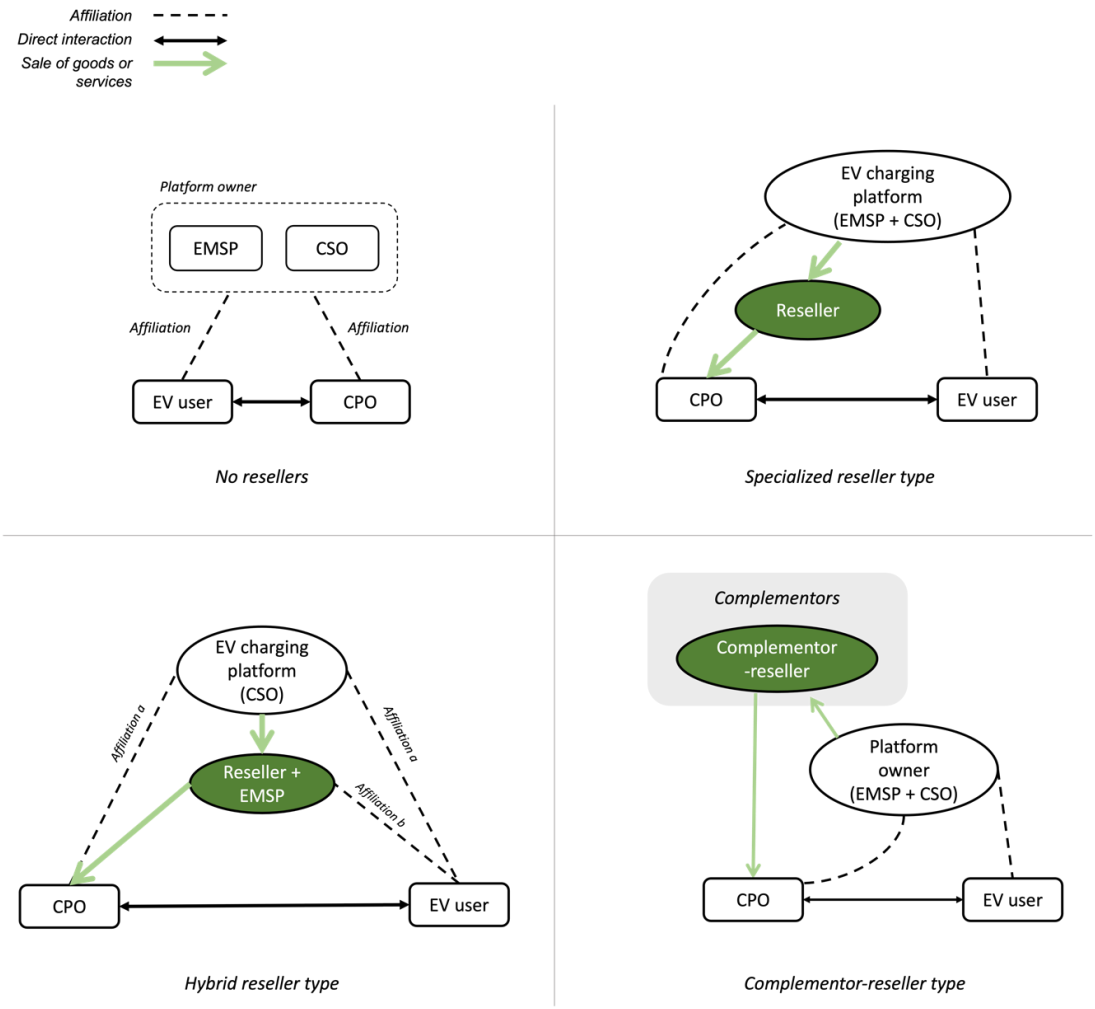

Figure 13. Scenarios of immediate EV charging platform ecosystem connections with distinct reseller types

From the Figure 13 we notice that the specialized reseller and complementor-reseller have similar types of connections between the platform owner and the CPO. However, the difference arises from the affiliation with the complementors, which the specialized reseller type does not have. In the actual EV charging platform ecosystem, the platform is simultaneously connected to multiple reseller partners representing different types.

As the platform also sells its offering directly to CPOs, all four presented scenarios may occur at the same time.

The sale of goods or services has a similar path in all three reseller models. The platform is the originator of the offering, which is sold to the reseller partner. The reseller then sells the offering further to the charging point owner (CPO). The sales to the CPO can either include only the platform offering, or in most cases a bundle of the platform's and the reseller's offerings. Without a reseller partner as an intermediary, the sale of goods and services would have a direct path from the platform to the CPO, as shown previously in the Figure 7. in the literature review.

Unlike in the specialized reseller model, where the reseller acts as an intermediary between the CPO and the EV user, the hybrid reseller also assumes the direct interaction towards the end user, taking care of the charging service that includes, inter alia, the customer front. In a multi-sided platform context this means, that the hybrid reseller will in fact adopt the other sides of the platform to their network in addition to the focal firm and its offering. The hybrid reseller could therefore become a platform itself, considering that it would also incorporate the platform enablers and rules in its core. The affiliations with the CPO and the user can be connected either to the hybrid reseller or to the platform, depending on the agreed control rights between the two. The affiliation type (a or b) is determined by the hybrid reseller. If the only channel for the EV user to communicate about the charging service is the hybrid reseller, then the affiliation type is b. Same applies to the CPO affiliation. Based on the interviews, the affiliation types a and b can coexist, if customer responsibilities are divided between the reseller and the platform.

The specialized reseller model and the complementor-reseller model work a bit differently than the hybrid reseller model. In these models, the reseller does not assume the affiliation to the EV user via customer front. Also, the CPO will be in contact with the platform for customer support, which in this case holds the EMSP role as opposed to the relationship between hybrid reseller and the platform. It should be noted that the

complementor-reseller role has a similar structure to the specialized reseller model, but with an added platform complementor role.

It is important to identify the differences in the reseller models, as they determine what kinds of interactions within the ecosystem are more suitable for each reseller. For example, it may be beneficial for the hybrid reseller to provide customer support by itself as it has comprehensive understanding of the EV charging. In the case of specialized/complementor-reseller model, the reseller is more focused in the selling activity. Therefore, it is reasonable, that it does not provide EV user support or the e-mobility service to the CPO.

The platform was seemingly willing to assign the EMSP role to resellers. Respondents from the platform side saw that dividing the roles like so will be the future of the ecosystem. The implication of this is that the platform would gradually shift away from the EMSP role, to only provide the CSO service. Leaving the EMSP role would streamline the platform's value chain as it would not be producing the EV user-facing services nor operating the charging management service anymore, should the resellers take over that position. This would further affect the EV charging ecosystem structure, allowing also new kinds of EMSP actors to join the platform. Additionally, it can be supposed that the B2B2B2C chain (platform to reseller to CPO to EV user) becomes more common through the structural changes.

> *"Well our goal is to be an enabler in the ecosystem that we're building, to create that big network for our EMP customers and CPO customers."* (FF7)

Many resellers visualized a more integrated role in the ecosystem in the future. Some expected to undertake the CSO role, while others were already planning to become EMSPs. Those resellers, that were interested in integrating CSO role to their current role saw that the complexity of the ecosystem would push them to take control over the charging service operations, and that assuming the CSO role would be the most reasonable way to do it.

> *"What may indeed come in the future, is that in this energy market we would perhaps be directly involved, or as an intermediary, however, so it is a natural position opportunity for an energy company."* (RP3)

> *"Well, probably just to the point where it would be in our hands, so to speak. But the fact that it can be only as... well it depends perhaps on the customer needs, that what kind of market it will be then. That if it is like the current one, so perhaps there is no need. But then if different kinds of flexibility and solar power and other things are required, we have to integrate things. So then we need different solutions and then our own platform could be the solution to that."* (RP7)

The respondents saw that technology giants such as Google and Amazon would penetrate the market forcefully in the near future, affecting the ecosystem roles and responsibilities. This further grew the resellers' interest towards the CSO role to be able to control the development of the product that would soon need to compete with these kinds of powerful companies.

The interest towards EMSP and CSO roles implies, that the hybrid resellers tend to be more integrated into the EV charging industry. Also, translating this to the platform theory propositions, we understand that platform lock-in mechanisms have a stronger effect on the hybrid resellers than the other types for two reasons. First, the hybrid reseller makes bigger initial investment to participate in the platform as an EMSP through building and maintaining branded customer-facing services. Second, the hybrid reseller is in a more central position in the ecosystem and acts partly like a platform by connecting to the sides that the platform affiliates with.

It should be noted, that while the specialized reseller type is defined according to the descriptions that arose from the interviews with the platform representatives, it is a purely theorized role, as none of the resellers interviewed represented this type. The role of the specialized reseller is presented in this study to provide an insight for an actor that's only purpose would be to act as an intermediary between the platform and the CPO. This role description provides the basis for the most important reseller purpose in the ecosystem from the platform's point of view. The other reseller types build on this

description, currently adding other recognized platform ecosystem roles to it. These findings suggest that the pure intermediary role may not be sufficient for the reseller partners to join the case platform. It may be that they need more incentives to join and adopt the EV charging business to their portfolio, as the hybrid reseller and the complementor-reseller have obtained supplementing roles that are related to the industry in addition to the reselling. By assuming additional ecosystem roles, they are able to build stronger presence in the industry and utilize the obtained EV charging capabilities for different actions.

4.1.3 Targeted reseller profiles

After being introduced to the reseller types, one must wonder whether there is a preferred type of reseller for the platform to seek partnerships with. According to the theory on business models, each customer segment should be targeted with a specified value proposition. Forming individual value propositions requires identifying the targeted segments. Balancing between maximizing positive network effects and keeping the platform reputable by utilizing governance mechanisms requires the platform to choose the resellers it best finds supporting its business agenda.

The case company wants to create a standardized reseller partner model, that is scalable and easily replicated in different circumstances. Previously the reseller contracts were tailored to each partner's needs. Naturally these kinds of contracts are not exactly transferrable, meaning that the same contract terms could not be applied as such to another reseller partnership. Not being able to use the same contract with standard terms causes hindrance in the case company's growth ambitions.

> *"From this mentality of "everything for everyone", now our activities and offerings are changing to thinking more about what scales, how to make services as efficient as possible."* (FF5)

The interviewees from the case company identified a few characteristics that their reseller partners should have in order to support the case company's strategic growth objectives. These included sales capabilities, commitment to the charging network, and desire to grow their own EV charging business. The platform wanted to create a strong bond with the reseller to incentivize more sales and to ensure that the reseller has enough resources to make these sales happen.

> "*I'd say a company that takes* [offering] *seriously to its own portfolio. So it means that it has business metrics, that they want to achieve results with it. Which in itself guides what they do and professionally incorporates it into, even as a main product, into their own offering.*" (FF4)

The platform aims to target the long tail of the EV charging market through resellers. The long tail includes smaller businesses such as restaurants and shopping malls, with a limited number of locations, public entities such as municipalities, residential buildings, and individual domestic customers. As the platform focuses its sales resources to companies with substantial amount of possible charging service users, the ideal reseller partner would then target all of the segments left in the long tail of the market.

> "*We don't sell directly to homes, and never will. But our dealership networks do sell to the EV owners, and the way it's evolving, the way we see it or the way I see this whole business, is that you have a home, you have a store, and you have a job. And it's around that trinity that the charging events happen.*" (FF7)

Understanding the local EV charging market was deemed as a key reseller quality. Local presence aids in building favorable reputation and thus acts as a lever for rapid expansion due to existing networks. One of the key factors in expanding internationally through resellers was that the reseller had capabilities to either build their own installing and maintenance operations, or to build a strong network of contractors. Different types of resellers could complement each other, if one reseller could act as installation and maintenance partner to many of the case company's reseller partners.

> ”*There will be different types of resellers, so there may be one installation company type of reseller in the same country, and then there may be an energy company. And these resellers may even cooperate. The installation company will install the energy company's products at the same time, but they will also sell to their own customers at the same time. These will be complex, but it is important to be able to define what roles are modularized and it is important for us to find the right partners per country, who can already create the local business from this.*” (FF5)

Some resellers serve both consumers and private and public CPOs, while others focused mostly on the B2B segments. The current resellers were all targeting the case company’s offering sales to most of the long tail segments. Those resellers, that were focused on expanding their installing and maintenance operations through the reselling activity were mainly interested in catering to B2B and public entity segments. These resellers had limited geospatial reach due to the regulations regarding their field of business, that restricted them to expand to other regions. This might explain their interest in vertical expansion to the complementary activities of installing and maintenance, as they have only limited possibilities to resell the case company’s offering to.

The home/domestic charging segment was perceived unprofitable by some of the resellers. The case company’s offering was seen as too advanced for the home user, and therefore difficult to sell. Some of the resellers chose to sell charging equipment without the case company’s offering to the domestic users to reach a larger domestic customer base.

> *“Basically,* [CC’s] *services are offered to everyone and then we have these kind of dummy chargers, which are offered to EV owners because if you need a charger for your own wall, you don't need the intelligence and then there is no need for any kind of cost management solution.”* (RP4)

Some resellers had found new ways to sell the platform offering to the price-sensitive domestic customers. The energy market turmoil had generated new products for the domestic markets, such as solar panels for home users, which had become sales

successes for the resellers. Bundling these product-services together with the EV charging helped the resellers to generate profit from each bundle sales.

> *"Then the consumer side, so it has its own sales pump operating it and in that we are basically currently selling these kinds of bundles, that if there are a solar panels to be delivered, we can sell the EV chargers together with them."* (RP3)

To summarize, the platform needs resellers that are able to drive the offering sales in high volumes. This requires the reseller to have qualities and capabilities such as selling capabilities to all prospects in the long tail market, commitment to the platform, local market knowledge, and operating or orchestrating the installing and maintenance network. The three reseller types each hold a bit different perspective to the ecosystem, but still provide vital elements to the platform growth. The specialized reseller's core capability is sales, which is the main purpose of the platform to engage any reseller. The complementor-reseller capabilities in operating an installing and maintenance network, which can also supplement the other two reseller types in the ecosystem. The hybrid reseller is able to strengthen the platform through large investments in the grid growth, as its purpose is to provide the electro-mobility services and grow the volumes of its own network. The more CPs are connected to a hybrid reseller's charging network, the more EV users will be making transactions on the case company's platform. With these considerations, it could be hypothesized that the reseller could be targeting all of the identified reseller types to grow its market share the most efficiently. Therefore, the three reseller types are included in the targeted reseller profiles.

As the target segments are selected, the value creation mechanisms can be determined to mirror the needs of these resellers. The process of how the ecosystem context affects the value creation mechanism through the targeted reseller profiles is illustrated in a simplified manner in **Figure 14**.

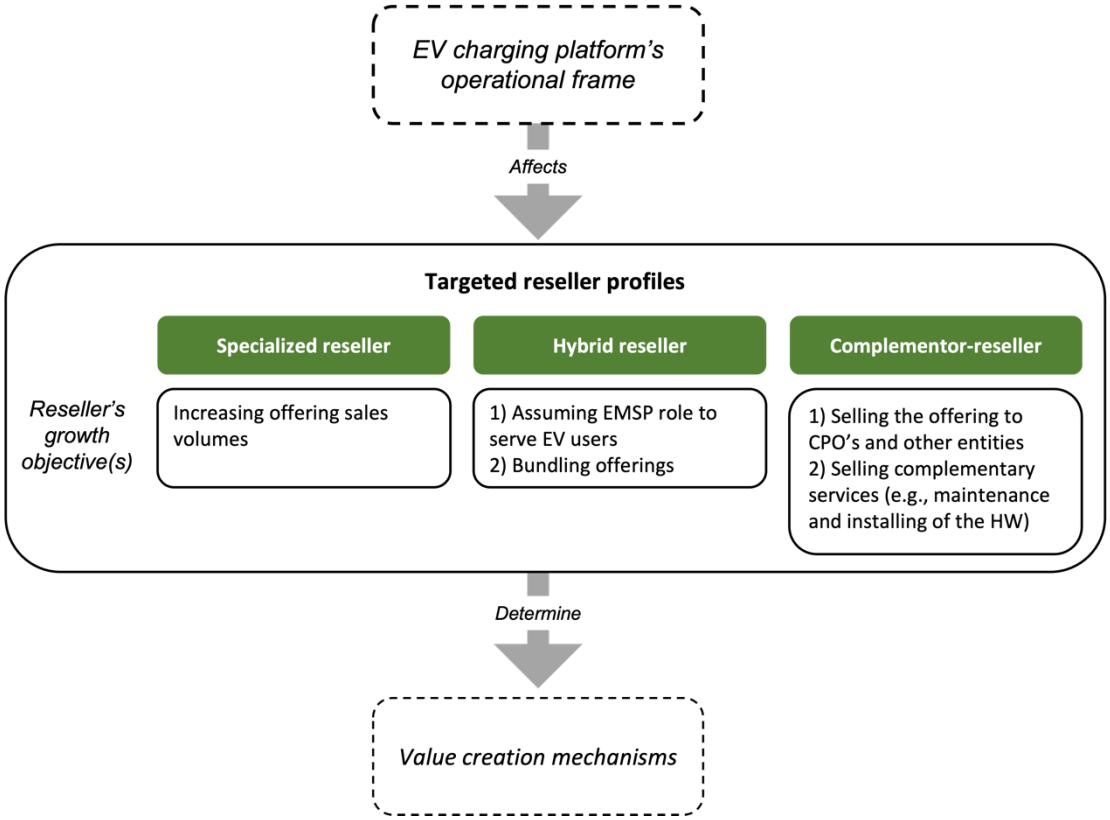

Figure 14. The targeted reseller profiles of the EV charging platform.

4.2 Value creation in an EV charging platform

In this section we will discuss the second research objective:

RO2. Understanding the motivations of the EV charging platform resellers to participate in the case platform.

This part of the study sets off the value generation by examining why the resellers want to participate in the platform: the jobs that the resellers need to fulfill. As stated earlier in the literature review, jobs represent the customer's fundamental problems that require a solution (Johnson & Christensen, 2008). By understanding the resellers' underlying motives to participate in the EV charging business we are able to tap into the

customer jobs, and further develop understanding on the value-generating factors of the EV charging platform.

4.2.1 Reseller's motivation to participate in platform

The reseller partnerships being under rigorous development phase, the case company was looking to form best practices based on the reseller customers' perspective on how the platform can provide value for them. In its early stages of developing the offering, the case company had relied on the **value shop logic**, customizing their offering heavily for each client. The platform is now shifting towards a form of value package logic, through which it would be able to generate a "mass-customizable" offering. Mass-customization refers to an offering, that has a replicable core to fill the needs of the majority of customers. Some modules of this offering would be customizable with a minimal effort. In platform theory, the mass-customization is exploited through platforms boundary resources, that allow modularity to exist.

> *"With the old product the philosophy has been to promise everyone [what] they have decided to ask for, so each customer relationship has become a technically separate, tailored customer relationship. And then there are always bugs, always different things that need to be maintained and you can suddenly have 20 different versions of our platform that need to be maintained, so then all of our time is spent on maintaining it."* FF3

Figure 15 illustrates the emergent data structure for the research objective at hand. The data structure begins with the sharp-edged rectangles in the left, representing the first-order codes that were derived from the quotes of the interviewees. The structure continues with round-edged rectangles containing second-order themes descending from the first-order codes. The data structure concludes with the aggregate dimensions in ovals on the right. Keyed to the data structure, the supporting evidence is presented in Table 9. explicating the quotes that formed the first-order codes, and further evolved into second-order themes.

The interviews revealed two high-level motivational factors that were common to the platform participants: 1) adapting to changes in operating environment, and 2) strengthening position in the energy markets. Let's take a closer look at them.

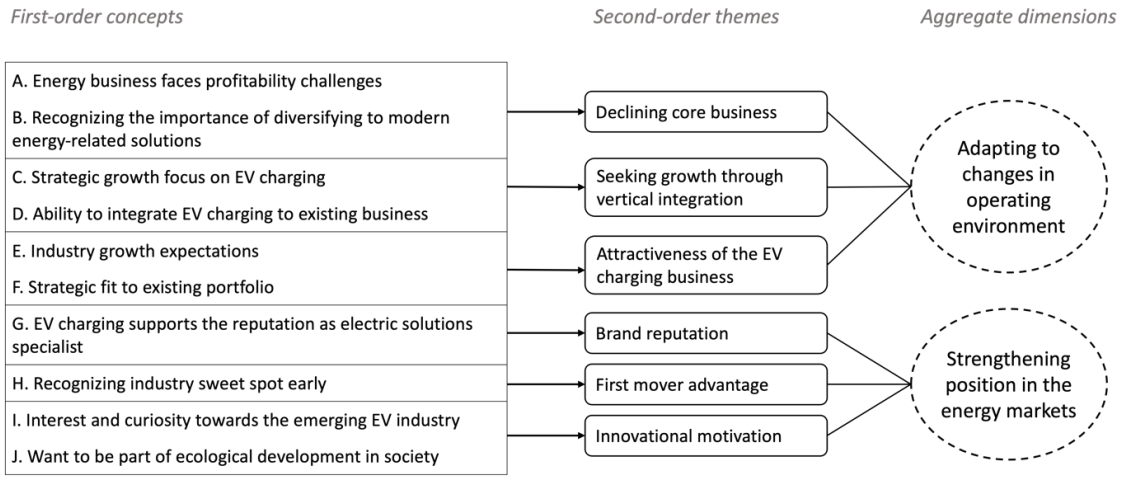

Figure 15. Data structure of resellers' motivation to participate in the platform.

4.2.1.1 Adapting to changes in operating environment

All of the reseller partners interviewed were linked to the energy industry in one way or another. The energy industry is seeing considerable changes in many ways, including shifting from fossil sources to renewable energy. Transitioning requires massive investments from energy and utility companies. According to the informants, electricity consumption in their market areas had not been on the rise. Investment and production costs would need to be covered through seeking new potential market areas with the current capabilities that the companies had.

> *"This is clear growth potential that electricity has been more, kind of, could I say a gun war, that electricity consumption has not risen dramatically. Probably in the future it will rise somewhat, perhaps because of electric cars, but it is not a growth market in principle, so we are fighting for market shares."* (RP3)

Changes in operating environment and limited growth in their core business areas had forced some informant companies to look for new ways to remain profitable. Seeking growth through vertical integration was a popular strategy for the informants.

> *"For* [X] *and other energy companies, the electricity and district heating business will gradually drop off, and growth will be sought in new business areas."* (RP7)

The informants found EV charging to fit in their portfolios. It was not too far from their core business field, and it was seen as easy to bundle with the existing energy services portfolio. The EV charging industry was seen so lucrative, that some resellers had even created new business units to cater for the growing business. The new EV charging focused business units were set up to provide vertical growth within these organizations.

> *"In our unit, while it may sound obvious, e-mobility is what we do, and what our unit's business is all about. It's there at the absolute core."* (RP6)

This indicates that the resellers believed to have supporting capabilities to run the EV charging business. Alternatively, it could be hypothesized, that the attractiveness of the EV charging business affected the opinions on how well the business really fits into the current portfolios. Either way, it can be concluded that the ability to integrate EV charging to existing business includes willingness to participate in the industry.

Industry growth expectations was one of the key factors that made the EV charging business very attractive. The respondents saw that the potential was too great in the EV charging to miss out on. They had been following the positive industry development and it had become obvious to them that the success would eventually ripple into their field of business. The informants believed that EV charging would be an essential part of the energy infrastructure in the future, and that it would provide great growth opportunities. They saw that the industry is now building momentum.

> *"Actually, it was perhaps only last year, 2020, that this market started to grow in such a way that, in a way, the demand grew so much that it was possible to start doing the business a bit more seriously."* (RP3)

Main factors behind the market growth were seen to lie in the increasing private EV user population and in the possible regulations in the industry. Regulations regarding sustainability in traffic and building infrastructure increase the need of EV charging points, providing great growth opportunities for industry players. Some regulations had already taken place within the residential EV charging market in Finland. The regulations were expected to spread to involve other end user segments, such as businesses, in the next few years.

> *"And this market, when we go forward 2-3 years, so this will already be something like–not the largest market in Finland–but this will form a really big entity. And then when it is linked to everything, like solar and electricity storage, it will become a kind of big entity at some point. How this is dealt with is a big deal."* (RP7)

> *"It will definitely increase to a significant extent in the coming years, both by natural demand and because private car owners will acquire more EV' s, so the demand will slowly be projected forward to housing companies and even workplaces, because people want to be able to charge the car at the office. The other side of the coin may be regulation, that more strictly in the future may regulate the kind of capacity that offices or housing companies must build for charging. It can be both a stick and a carrot."* (RP6)

4.2.1.2 Strengthening position in the energy markets

The second aggregate dimension found from the thematical analysis was market position strengthening. The resellers wanted to obtain bigger market shares in the energy industry. A common understanding among the respondents was that the EV charging business would provide more brand awareness and solidify an overall energy expert reputation.

A common motivational factor among all platform-participating organizations was the inherent interest, even attraction, towards the EV charging industry. The desire was not always rational, as many organizations had been participating for years without making significant profit from the sales, and some had not been generating positive income from the business at all. However, the expansion potential was well understood by the resellers, being the main reason behind tolerating unprofitability.

> *"Public charging points are, of course, still a challenge in terms of how to make them a real business, because they are so expensive, and the charging volumes are not such that the devices could be profitable. It's a bit like a hobby, that you have to pay when you put up a charger, so you can't really do any business in it today."* (RP1)

The innovational motivation could be interpreted as a factor, that is decreasingly one of the main motivations for a reseller to join the industry or the platform. As the industry matures, the pioneering opportunities will be gone, and there is little room for innovation.

Table 9 contains the supporting evidence keyed to the data structure presented previously in Figure 15, elaborating on the resellers' motivations to participate in the EV charging industry.

Table 9. Motivations to participate in EV charging industry: Dimensions, Categories and Concepts.

Second-Order Categories and First-Order Concepts	Code	Interviewee Quotation
Aggregate dimension: Adapting to changes in operating environment		
Declining core business		
A. Energy business faces profitability challenges	A.1.	Energy business, electricity and heat production require heavy investments, there are advanced investments and electricity production has had challenges for a long time. There are quite a lot of profitability challenges, especially in the old production plants, which are still outstanding. (RP1)
	A.2.	It is what it is. That's the way it's going to be - or that's what's going to happen, so there's no point in fighting it. The fact that we are picking up the bill at this point is the way it goes. [RP4]
B. Recognizing the importance of diversifying to modern	B.1.	The fact is that [X's] core business comes from electricity and heating and cooling sales. But we have a focus on these [e-mobility] solutions, of which we are a part, it is in a pretty big spotlight I would say. (RP5)

Second-Order Categories and First-Order Concepts	Code	Interviewee Quotation
energy-related solutions	B.2.	As with other energy companies, the electricity and district heating business will gradually drop off from our portfolio, and growth will be sought from new business areas. (RP7)
	B.3.	[CC] updated its e-mobility strategy last autumn, and a key point was that it wants to invest a lot in this business. And we want to make it a significant business for us. (RP6)
Seeking growth through vertical integration		
C. Strategic growth focus on EV charging	C.1.	It has been seen as quite important and we want to be part of it, to see that it will grow, grow significantly, that the number of charging points will grow. (RP1)
	C.2.	There's a long, long upward curve here, when we switch from fossil fuels to electricity and so on. So, a really long, long bull market is expected. Hopefully [Partner] will be among the leaders in this business by Finnish standards, and this has become one more supporting business for us. (RP3)
	C.3.	But it's really just that people want electric mobility to be easy and we offer solutions to that. After all, we are a reliable partner, we have been in business for 100+ years and there is no reason why we shouldn't be in business for another 100+ years at least. (RP4)
	C.4.	And electric transport is third or fourth on our priorities list after electricity production and district heating. Maybe about the same level as solar. The growth potential is enormous from our perspective. (RP7)
D. Ability to integrate EV charging to existing business	D.1.	Well just by the fact that the potential is so great there. We have six hundred thousand customers, so in a way most of them will get EV charging in one way or another. (RP7)
	D.2.	The desire to be at the forefront of these things in our own industry. Everything that has to do with electricity has to do with us. [CC] has such a strong desire to be a kind of a pioneer and a player in this field. (RP4)
	D.3.	We see that [EV charging solutions] fit well into our portfolio and that there is also growth potential there. (RP5)
	D.4.	[CC] really has a strong will, an objective and strategy to invest in e-mobility, in terms of development but also in terms of sustaining the business. (RP5)
	D.5.	Solar, on the other hand, has had 5 years of aggressive growth and charging has at least the same prospect, meaning that it's a growing market. So there's potential for us to make more money in the big market of the future. It is now quite evident that driving is turning electric to a very large extent, so in that sense the market potential is big. (RP3)
	D.6.	I would like to stress that any new solution will have significant growth targets. So the targets are tough but there is also a willingness to invest. And we believe in the growth potential. And one of the big ones is electric transport, which plays a significant role. (RP5)
Attractiveness of the EV charging business		
E. Industry growth expectations	E.1.	And then the expectations for revenue growth in the industry are also high. (RP5)

Second-Order Categories and First-Order Concepts	Code	Interviewee Quotation
	E.2.	I guess the starting point was originally that we wanted to be involved - we saw that the increase in electric mobility in the world will have a significant impact on the energy sector. (RP1)
	E.3.	In 10+ years, in Finland, too, probably every third car is rechargeable, that it is already so mundane that it is not worth marveling at anymore. And hopefully this ecosystem has kept up with the development that this is more reliable and easier for the common man. (RP3)
	E.4.	Especially in cities in Europe we will see this growing rapidly, in the urban areas. (RP2)
	E.5.	And I can see that this area will inevitably grow quite a bit in the coming years. (RP1)
F. EV charging supporting existing portfolio	F.1.	We are looking for kind of supporting business and an area where we want to be involved in. (RP1)
	F.2.	Well, of course, [EV charging] strongly supports [our business], it's part of the whole energy system. There are huge energy flows going on, and [CC] sees that there's a strong desire to be part of that. (RP7)
	F.3.	The intelligent solution comes from [CC] as it is to be distributed, and then we add our own implementation on top through the contractor. It works very well, and this enables, among other things, for us to attend to companies and housing companies almost as such. (RP3)
	F.4.	But the service is really, really important to be able to sell the charger and installation, so we bundle it together. So, you choose your chargepoint installation and then we provide you with a service package. In the future it will give us more money, and I believe that. So, this is sort of our business flow. (RP2)
Aggregate dimension: Strengthening and establishing position in the energy markets		
Brand reputation		
G. EV charging supports the reputation as electric solutions specialist	G.1.	It supports our role as an expert in all things electricity. So, it's a supporting service for us. (RP4)
	G.2.	Of course, as an energy company, we are very interested in electric mobility, and we wanted to be involved in exploring the issue and being part of it so that we could understand the business better and be among the first to offer the services. (RP1)
	G.3.	So now we're getting more and more respect on the market for what we're doing. So it's super important that we keep this respect and that what we do, we do it good, we don't do any shortcuts. (RP2)
First mover advantage		
H. Recognizing industry sweet spot early	H.1.	There weren't many players back then and I think we saw the opportunity and potential there. (RP5)
	H.2.	It was still so new back then that I don't think there were any electric cars in the area, just a few of our own, so that's probably where the [motivation to participate] stemmed from. (RP1)
	H.3.	The desire to be at the forefront of these things in your own field. (RP4)
Innovational motivation		

Second-Order Categories and First-Order Concepts	Code	Interviewee Quotation
I. Interest and curiosity towards the emerging EV industry	I.1.	It was probably more of a research experiment of this kind that we undertook because we wanted to increase our own knowledge, and also because we already saw potential in it, but it was maybe more of an R&D type project at the beginning. (RP1)
	I.2.	Well, I think our responsibility is to be a pioneer, and I've sort of put us in that position to be a pioneer when it comes to this [industry]. (RP2)
J. Want to be part of ecological development in society	J.1.	It fits well with our values; we have ecological values as high priority, and we want to be involved in this kind of development and that's probably how we first participated [in the industry]. (RP1)

The drivers introduced above had both pulling and pushing effects. Factors such as good strategic fit and positive growth expectations of the industry had a positive lure to them, pulling the resellers towards the industry. On the other hand, pushing factors were those forcing the companies to participate in the platform, such as declining core business and the need to diversify the portfolio.

Most of the resellers interviewed were trying to respond to business growth challenges through vertical diversification. Those resellers that had not experienced challenges were the ones that had been established just for the purpose of selling the EV charging services. Their main motivational factor was to establish a solid position within the energy markets. From these findings we can conclude that the jobs that the resellers are trying to fulfill by participating in the platform relate heavily to the energy industry going through transitioning phase. The resellers were either looking for supporting business or just wanted to break into the lucrative market.

The motivational factors leading the firms to participate in the platform were quite consistent among the different reseller types. Only one difference was that the specialized reseller type would find itself to be only *establishing* its business in the energy markets, as opposed to existing businesses that are looking for vertical integration to *strengthen* own position in the market. This difference can be interpreted as a difference in maturity, as the pure reseller would be in its starting phase and the other resellers are already

matured. Despite the maturity level differences, the end job remains the same: to penetrate the EV charging industry and thus strengthen position in the energy market.

4.2.2 Value-generating factors

Next, we will discuss the third research objective:

RO3. Describe the value generating factors of the case platform.

Based on the analysis of the resellers' motivational factors we concluded that the customer jobs are 1) to diversify energy-related product-service portfolio to respond to changes in their operating environment, and 2) strengthening and/or establishing own position in the energy markets. As concluded previously (in which part of the thesis?), the new emerging area in the energy markets is the EV charging industry. At the time of this study, the industry is still in rapid growth phase, providing opportunities for actors within and outside of the energy markets. It can be therefore concluded that EV charging is a lucrative business for the interviewed reseller partners, presenting great possibilities for vertical integration and for new business establishment.

Moving toward building the value creation logic, we can ask the following question: What do the resellers want and need from the platform to grow or establish its EV charging business? In other words, what do the resellers find valuable in the platform offering? To answer these questions, we will take a closer look at the value generating factors that can be identified from the interviews. The interviewees answered to several questions regarding their business models, value creation to their own customers, and their relationship with the platform in order to obtain a comprehensive understanding of what the resellers find valuable in the platform. The value generating factors build foundation for the value creation logic, that will be drilled down to in the next and final section of the findings.

While the reseller ultimately is the assessor of value (Anderson et al., 2006; Anderson & Narus, 1998; Chesbrough et al., 2018; Priem, 2007), we will also look at the value-generating factors that the platform owner identifies in its offering. These are likely to be the capabilities that the case company has recognized to be valuable and which it has developed. By juxtaposing the reseller and platform views we will gain better understanding of the value generating factors that can mutually benefit the parties, as well as tap into the value uncaptured within the platform ecosystem. After detecting the shared value-generating factors and the value uncaptured, we are able to analyze them through the VRIO lens to determine whether they provide source of competitive advantage. As stated in the framework description at the literature review synthesis, this is an essential step in formulating the value creation logic for EV charging platform ecosystems. The data structure showing the value-generating factors that the reseller interviewees mentioned is presented in **Table 10**.

Table 10. Value-generating factors mentioned by the reseller partners in interviews.

Aggregate Dimensions	Second-Order Themes	First-Order Categories
Advanced product-service offering	1. Finalized productization	• Clearly communicated product • Ready-to-adopt offering package
	2. Focus on R&D	• New interesting products and services for reseller's clients • Constant development and growth bring added value to reseller
	3. Technological innovation and advantage	• Modern technical and analytical tools • SW compatibility with several HW brands • Cutting-edge technology
	4. Differentiated offering	• Only a few smart solutions available on the market
Collaboration and communication	5. Open communication	• Responsiveness in communication • Transparency of the market roles
	6. Transparency and collaboration in the offering development	• Being involved in the design process • Understanding the needs of the reseller's customers through dialogue • Knowledge sharing
	7. Building a long-term relationship	• Long-term relationship • Shared vision of theindustry development • Establishing well-founded partner relationships

Aggregate Dimensions	Second-Order Themes	First-Order Categories
Flexibility of the solution	8. Pricing flexibility	• Ability to make every charger sale profitable
	9. Bundling possibilities	• Charging service versatility
	10. Platform scalability	• Platform agility to fit to different reseller and end user needs • Platform's ability to scale in response to rapid demand growth
	11. Leveraging reseller's brand value	• Own brand visibility is chosen over user experience • White label branding as a prerequisite for the offering • Reseller is able to utilize own brand value
Future-proof solution	12. Continuous product development	• Trust in CC having the newest available technology • Solution durability against technology advancement • Continuous development of ancillary functions
	13. V2G possibilities	• Possibility to offer V2G solution to clients • CC's current technology is expected to support V2G in the future • V2G brings added value to reseller in the EV charging business
	14. Participating in the changing energy market	• Platform's potential in the changing energy industry • Ability to build comprehensive infrastructure • Platform allowing reseller to be part of the future energy market
Strategic fit	15. Bundling together with existing portfolio	• Desire for selling packages containing different energy-related solutions • CC offering provides ready-to-sell base for long-term maintenance and service contracts
	16. EV charging is part of core business	• EV charging provides a significant revenue stream • CC's solution forms a basis for reseller's EV charging business
	17. Growth plans rely on EV charging	• A complete solution supports reseller's ambitious growth plans • Scaling made possible through outsourcing
Turnkey solution	18. End-to-end solution is the most desirable form of selling EV charging	• Convenience of turnkey solution for reseller's clients • Outsourcing peripheral functions related to EV charging eases the adoption process • Turnkey allows profitable reselling business
	19. Platform's support in technical issues, sales and aftersales	• Selling the offering "like own" requires material and knowledge support • Reseller's need to focus on the selling activity • Ensuring technical support from CC to secure the support chain • Locality, easy to get service and aid • Quick and high-quality customer support • Proactive support providing knowledge, knowhow and tools

Aggregate Dimensions	Second-Order Themes	First-Order Categories
Platform credibility	20. Brand reputation	• Market presence • Platform owner's solvency
	21. Reliability of the offering	• Minimizing errors in functionality • Reliability of the offering as priority • Reseller's brand integrity depending on the offering reliability
	22. Safety and trustworthiness	• Safety and abiding to regulations • Operational stability
	23. Industry proficiency	• Proven expertiese in EV charging • Being proud to be a reseller of the CC's offering • "Best option" in the industry

4.2.2.1 Advanced offering

The platform is in the “premium segment” of the EV charging offerings available on the market. It provides a service for user data collection and a form of business and end user intelligence hub for their customers to use for enhancing their business. There were only few offerings applying intelligent services in the market at the time of this study. The advanced nature of the CC’s offering was perceived as a differentiating factor, and many interviewees mentioned that it was the most advanced currently available on the market.

> *“There are all kinds of chargers, especially in this kind of basic charger side, so there is a lot of options. But then this intelligent more intelligent end, if you look at the Finnish market, so there are no more than a handful of those kinds of options in there. — Then if we would not be together with* [CC]*, we would have to think of another supplier. Of course, there are other Finnish suppliers and so, that we would probably find someone from there, but it may be that perhaps then some opportunities would be missed. Especially there in the better, the so-called premium end, I don't know whether we would manage with all of the options in that segment, so in that respect it is very important.”* RP3

The offering is compatible with many different HW providers. This was seen as a proof of technological advancement. The resellers wanted to avoid partnering with a provider that would possibly limit their future partnerships with other CSOs, which would be the

case if they had chosen a HW supplier to provide the EMSP/CSO services. The extended HW compatibility of the CC's charging service allows mobility for the resellers to update the HW base in the future.

> *"The advantage of [CC] is that they've coded the backend system to be compatible with a lot of hardware manufacturers. That is, if a hardware manufacturer goes to make their own software, there is a risk that it is built in this kind of siloed system, where the software and the user interface work with only one HW manufacturer's devices. And then you end up with a potentially siloed situation where the EV user has to use a million different software depending on how many different devices he wants to use."* (RP6)

The productization was described as finalized and "polished", meaning that the offering was easy to comprehend and adopt to the reseller's portfolio as it is, and that it was not lacking any major components. The polished productization was seen to increase the user experience. The platform informants emphasized the advanced productization factor as valuable for the reseller. They believed that the offering packaging would bring them competitive advantage. Being able to package resources and capabilities in an inimitable way indeed may provide the company sustained competitive advantage (Barney, 1991). The current state of the productization was however deemed to be still work in progress mainly because of modest profitability and unfinished service development, such as reseller onboarding process.

> *"Well just about having the tools in there that we can have, so ready machines, ready service packages with pricing, ready maintenance and this kind of basic productization really clearly."* (RP3)

> *"Maybe that kind of phone example is good, that it's all the same whether I go to the online store to get that Apple device or I order it directly from Apple, if I want to go to the store and get excited so I go to the Apple store. But it has to be so smooth that they keep us there in the online store, so to speak. So that all the pieces are so polished and the margins are so right that it's profitable for them. Which means that the onboarding and delivery has to be several times better than it is at the moment."* (FF7)

4.2.2.2 Collaboration

Open communication was perceived as highly important among all resellers. The way of working had been close-knit between the case company and their reseller partners, partly due to the development process at the early stages of the company evolvement and growth process. The reseller partners felt that the expectations towards resellers became clearer through open and responsive communication.

> *"Good cooperation is probably the most important thing of all, that there is a good supplier with whom things can be discussed through appropriate channels, that there is support from the supplier's side. Those are perhaps the most important things in it."* (RP1)

> *"What I appreciate is that the partners know what their kind of role in the market is, so that if there are some other players involved, then you know the roles, so you don't have to start second guessing later."* (RP3)

The tight collaboration was natural from the resellers' side, as setting up and running an EV charging business through the platform's offering was time and resource-consuming. This was common for resellers that had formed a close-knit relationship with the case company already on the early phases of the platform. A long-term, close collaboration was appreciated and welcomed by the resellers.

> "*And I said to* [CC representative] *that I consider myself as an employee of* [CC]*, even though I'm a customer, because I've been working with them so long, and I've been going through ups and downs, and we have done great victories and we have done great failures. — So our cooperation with* [CC] *is brilliant. I sort of put all my eggs in the basket, in the hands of* [CC]*, when it comes to functionality, and there's no Plan B. So when they fail, we fail. But when they succeed, we succeed. Is basically how it works."* (RP2)

The collaboration between platform and resellers had been difficult to manage from the platform's side as the offering had only been in its development stage until very recently. The tight collaboration with resellers required lots of resources from the platforms side, but it had been necessary because of the complexity and the novelty of the offering. The reseller partners had been expecting more from the case company than what the

traditional boundaries in a business relationship are by expecting to be part of the product development. The platform had understood the importance of the collaboration in the offering sales and was developing the reseller communication channels with account managers.

> *"So we have to have a very competent key account manager for each reseller, a designated person of this kind, who has the ability to serve that reseller representative both night and day, who has thoughts, concerns, ideas, visions, and sometimes real business needs."* (FF2)

4.2.2.3 Flexibility

In spite of the rapid growth of the EV charging market, the demand for EV charging solutions had been fluctuating. Demand volatility is common in new technology-heavy industries, but it also hinders the partners' keenness to participate in them. Being able to mitigate the risks involved with the demand fluctuation, the case company had proved to be a good partner for resellers in the EV charging business. The flexibility of the offering provides resellers agility with varying end user needs and responsiveness with the obscure market.

Some resellers found difficulties in generating profit from the case company-powered EV charging solution sales. They felt that there were pricing constraints from their owners and shareholders and their customers. This was common among the complementor-resellers. On the other hand, hybrid resellers felt that they were able to generate profit from every sale. These resellers appreciated the possibility to price the product themselves more than the complementor-resellers did.

What was perceived problematic by many of the resellers was the narrow selection of solutions, especially in the lower price range. This was seen as limiting the reselling potential as in most cases it would rule out one customer segment: the domestic users. The domestic charger segment has great market potential, but the solutions needed there

differ from the commercial and organizational market segments. Domestic users are often more price-sensitive and opt in for the stripped-down version of the solution. Therefore, the functionalities of the high-end product were perceived too costly for the home user segment by the resellers.

> *"And, of course,* [we need] *information about the solution that suits their needs. I think the world of residential properties is a very good example of how one solution does not fit all."* (RP5)

> *"Basically,* [CC's] *services are offered to everyone and then we have these kinds of dummy chargers, which are offered more to private people because if you need a charger for your own wall, you don't need the intelligence and there's no need for cost management."* (RP4)

Some informants had resolved the issue of narrow selection by selecting another partner for the segments that appreciated a simpler solution. Relatively high compatibility with various HW providers allowed the resellers to also select their own HW providers. This is one of the key factors that distinguish the platform from its competitors, as more often than not the charging service software was only compatible with one type of hardware, dramatically reducing the range of hardware options. Being able to select suitable hardware for different customer segments was seen as a crucial element for resellers to be able to reach the long tail of the market.

> *"So the service of* [CC]*, the charging is really good. It's a clear added value for us. It should not be underestimated in any way. The coverage it offers, what it can do, it does serve the needs of the customer."* (RP5)

Despite the perceived narrow selection, the overall perception of the offering flexibility was positive. The offering was deemed to fit for most customer segment needs well. The resellers saw that the offering could be easily bundled with different products and services, providing more revenue stream possibilities.

> *"The range of chargers that they have is limited, but it meets the need usually. So the smart chargers come through them to us. That we sell, for example,* [device x] *as a dummy and that comes from elsewhere, of course."* (RP5)

The case company's offering provides a white labeling option, that allows the reseller to brand the solution under their own name. White labeling was one of the customizable parts of the offering. The visibility of the reseller's brand was perceived as a value-adding selling point, as strengthening own brand seemed to be important to the resellers. White labeling possibility was one of the factors why some resellers chose the case company over competitors' solutions.

> *"Last year there was this kind of branding introduced, we have this* [Reseller's name] *charging brand, which is built on top of the* [CC] *concept, so it gives us a way for us to go further, at least in branding terms in this business so that the chargers have our names and logos on the screens and on the app if we so desire. So it is pretty well productized in my opinion, this kind of reselling or white label branding certainly was the best in the market. We studied the alternatives, and turned out that* [CC] *was clearly been taken to the furthest stage already then, so more than a year and a half ago they already had this kind of package for branding."* (RP3)

White labeling seemed to be more important to hybrid resellers than to the other reseller types. The hybrid reseller experienced their brand value to be already established to some extent, and they wanted to utilize the white labeling possibility to further stabilize their position in the market.

> *"Of course we are the customer's "go-to"* [option]*, that is, we have a strong role as* [X]*, the added value that our brand brings. And that's based on* [the fact that we have] *a very clear direction and decision on what we've done. About a year ago we sold the* [CC] *service as part of our download service. And now we're selling* [CC] *charging under our own brand. And also those customers are with us and not with* [CC] *in this case."* (RP5)

The case company has also recognized the value of white labeling for resellers. Through building the reseller concept, they had soon realized that some resellers preferred to have their own brand at the customer front-end of the offering, both physically and in

the software. The white labeling was seen as a good selling point for the international markets, where local companies would already have reputation and therefore an advantage on the market compared to the case company's own brand.

> *"So we are aiming for the most global product possible, the same all over the world. But of course this is of course linked to the layered branding of the reseller, so we are talking about a mass customized product."* (FF2)

The best practices for white labeling were still to be defined, as the service had been customized for each reseller customer. While the overall offering was perceived to be well polished, sometimes the incompleteness of the white labeling caused headache for the resellers. The end users would see the reseller's brand on the customer front, but some parts of the offering were clearly branded as the platform. Because of the mixed use of brand names, the end users were sometimes confused. The resellers, especially hybrid resellers, were still keen to keep their own brand at the customer front, even at the expense of the user experience.

> *"So we have an* [X] *charging, which is made with a* [CC] *white label. But it's hard for the customer to understand that even though the device has a specific service and the user has their own service, it's kind of hard for the customer to differentiate between the two."* (RP7)

4.2.2.4 Future-proof solution

The novelty of the EV charging industry had stirred some concerns among the resellers. Participating in it was found somewhat risky, as the industry best practices were still work in progress and the industry development had been fluctuating. By participating in this kind of a volatile market, the reseller's wished for a solution that would be reliable in the long run. One of the factors that made resellers more comfortable with the offering was the continuous development that the case company had been demonstrating by being at the forefront of the industry. For example, the case company had been building their offering to be ready for vehicle-to-grid markets. V2G allows EV user to balance the

electricity grid during high demand. It also provides further monetizing opportunities for the CPOs, EV users and EMPs through the electricity transfer transactions. The resellers saw this as a proof of the offering's durability over time, and they believed that in the future the CPs needed to be V2G-ready.

> *"Then there a little further down the line, in 5 to 10 years or so, this V2G will definitely be the interesting part. So, in a way, participation in the e-commerce with these charging devices, so with these pilot phase charging devices that* [CC] *has it would be delicious to put them into action, that they would be value-added solutions. If the chargers participate in the energy market, then it would benefit the customer and us and maybe* [CC] *as well. It would really be a plus for everyone."* (RP3)

The case company sees that being able to offer V2G-ready solution is one of their biggest competitive advantages. V2G technology provides more growth possibilities than unidirectional EV charging transactions, that have limited revenue potential. The case company believed, that electric mobility would replace the fossil fuel based mobility value chain.

> *"One thing I would raise is the energy system. It's very much connected, and in a sense the sector is becoming blurred. Electric mobility and energy, especially through renewables, is at a tipping point. There will be strong synergies in being able to use electric vehicles as an element of* [energy] *flexibility."* (FF4)

> *"And the reason why we're working with energy companies is that electric vehicles and the energy system have a really profound long-term benefit in terms of managing the balance of the energy system and the elasticity of demand elements. And equally it's linked to the whole idea of the* [CC's] *idea that the mobility value chain is gradually moving from the oil value chain to the electricity value chain."* (FF1)

4.2.2.5 Strategic fit

All resellers mentioned that the offering was a good strategic fit for them. The resellers had existing businesses such as installing and maintenance services, and high-end domestic energy solutions, that were seen to be supplementary and well-paired with the

case offering. The resellers had a strong desire to bundle these products and services together with the case offering.

The respondents had also recognized the EV charging business to provide a significant revenue stream. EV charging was expected to become part of the resellers' core business, and for some it already provided a sizeable proportion of their revenue. Resellers saw that the platform offering was a key part of their success in the EV charging market.

> *"Well,* [the e-mobility business] *is more than half of what we're working on at the moment. That is, if you look at the quantities or so."* (RP3)

> *"Of course, the* [CC's] *offer is very much an integral part, and our whole e-mobility business is very much based on the* [CC's] *offer. A very essential part of it is the charging management services and the charging service."* (RP5)

Resellers had recognized the importance of strategically grow the EV charging business in order to stay relevant at the energy markets. A ready-to-adopt offering solution was perceived to give a kick-start to the reseller's ambitious growth plans by both respondent groups. Both resellers and the platform had identified the importance of a rapid EV charging business establishment and saw that the fastest and most convenient way to do this was to outsource the CSO operations to the platform.

> *"Because e-mobility plays such an important role for us today, and has especially big growth targets, that we want to grow significantly in e-mobility in the coming years, so in that sense* [CC] *has a really important role to play. Because* [CC] *is then the ecosystem we use, where all the different pieces are kind of solved in some form."* (RP6)

> *"There are actually 3 aspects to it, that new* [resellers] *need the solution to get to the market. And* [the reseller] *is able to take on the competition right away, that's one. And then the existing* [market players]*, they need a solution to scale their own business — how* [the resellers] *can tenfold their own business and how* [CC] *can support and help them."* (FF5)

In addition to rapid establishing of the EV charging business, the resellers expected to be able to scale the business expeditiously. Scalability allows the reseller to quickly adapt

to rise in demand. As the EV charging market is rapidly growing, the scalability factor could be seen as an instrumental value generating factor for resellers. Outsourcing the CSO function was believed to solve this as well. The main reasons for this were twofold: 1) the platform had already established reputation as an industry expert, and 2) the re-seller could focus only on the sales, while the platform would provide the ready package to get started. Scalability of the offering was emphasized by both informant groups.

> *"On the other hand,* [CC] *must be able to act as a scalable partner for us, so that we can get the devices ourselves fast enough through* [CC] *and that the software will for sure be scalable."* (RP6)

> *"We are a digital platform and we have realized that in this value chain it is the overall efficiency at the end of it that matters. So we have tried to find an operating model that makes the EV charging service as easy and simple to sell as possible. This has enabled* [the resellers] *to sell and supply very efficiently and successfully, and this has also brought us a large amount of revenue."* (FF2)

4.2.2.6 Turnkey solution

The platform stressed the turnkey solution as a value generating factor. Turnkey refers to a ready-to-go, completed product for immediate use. Turnkey solution was perceived as the optimal form for the offering, as the resellers would not need to build an extensive business unit to take care of any of the multiple different elements that constructed the main offering, such as connections to electricity grid, back-office system, and transaction operators. The goal of the case company is to offer a complete package that enables customer or reseller to start their EV charging business with minimal own resources and only focus on the offering sales instead of running any operations related to it.

> *"In practice, we aim to provide a turnkey* [service]*, a whole value chain for running an e-mobility business with minimal lifecycle costs and also so that they don't have to invest in their own organization's capabilities around the topic but can focus on how to tie it into their own offering in the best possible way."* (FF4)

The resellers also wanted to offer a turnkey solution to their own customers, as it would allow sales of a solution bundle. To be able to profitably sell an EV charging solution bundle, the resellers saw that the CC's offering would be the most convenient way to do it.

> *It's a turnkey solution basically, that it's one stop shop. That you can go to one place and you can have everything you need to be able to charge your EV. Even if it's at home or if it's semi-public or public or DC charging.* (RP2)

> *"And charging solutions are also linked in the same way to the overall solution aspect, in that we want the customer to get everything they need from one shop."* (RP6)

Turnkey offering was a convenient way for the resellers to quickly adopt EV charging business to their portfolio, directly targeting the customer job that was common for all resellers: to penetrate the EV charging market and strengthen own position in energy markets. Outsourcing the EV charging business operations to the platform was also perceived to make the business adoption easier. The resellers felt that with by adopting the EV charging business as a ready package they were able to focus on growing their sales organization around the offering. Additionally, some of the resellers saw that the turnkey offering was most cost-efficient way to participate in the EV charging market.

> *"*[CC] *allows us to do that, so that we manage to make money somehow. The company's purpose is to make money and this is one of the enablers of that. And what it means is that even the current solution is one that you can sell and do business with."* (RP3)

> *"It means that our salespeople can focus on the sales job. And that we in product management are able to provide our salespeople with the tools to close the deal."* (RP6)

The offering complexity had been one of the main reasons why the platform wanted to provide a turnkey solution. As the sold offering is a sophisticated combination of software, hardware, and connections to cloud service providers, it would become too fragile if it would be sold to the customer piece by piece. The platform had previously offered

parts of its services to its customers in a tailored manner, which had led to problems in the EV charging business establishing at the customers' end. The platform was therefore shifting from providing tailored services to the mass-customizable turnkey offering. Turnkey solution was rationalized to be a more secure way for the resellers to participate in the EV charging market.

> *"That's why I believe in this model. Because people usually start out by saying "give me the tool, I'll build it around this and this" and then say "no, damn it, this is such resource-consuming stuff and we can't do this, we can't manage customer service and everything else that goes with it, so please come back to the discussion table"* (FF7)

> *"We offer a package that also includes charging stations for electric cars as part of the package, so then it... If the customer buys the use of this software platform and the charging stations from us, they will get a pretty failsafe package."* (FF3)

The platform saw the turnkey solution to be their biggest competitive advantage because of their ability to bundle the sophisticated elements together to an easily understandable package. Additionally, rapid market entry was one of the key selling points, and the platform believed that offering these elements to their convenience-seeking reseller customers would provide them competitive advantage in the market.

> *"The fact that we are able to combine all those elements together is certainly the biggest competitive advantage. Then, depending on the operator, for some it may mean the ease of getting it all through that one channel. For some it may mean cost savings through energy management and so on. But being able to deliver the whole value chain is our greatest strength. — The fact that we offer a turnkey solution is our greatest advantage."* (FF4)

4.2.2.7 Platform credibility

Reseller informants were proud of their own brands, and they expressed desire to provide high-quality services to their own customers. The case company's offering was also expected to keep up with these standards. The platform's reputation and international

market presence played a key role in how the resellers perceived the platform's credibility.

> *"A player that has enough size and credibility and has shown that they work in Finland and also internationally in a major way. Then let's take this product or the supply side, so that it is competitive and preferably the best in the industry."* (RP3)

Credibility was perceived to stem partly from the industry proficiency. By demonstrating expertise in the EV charging business, the case company had proved itself to be one of the best options available. Some of the resellers expressed pride in being a reseller of the CC's offering, as it had established a specialist reputation in the market.

> *"One of the things I would like to raise is the technical expertise, because after all, we are dealing with electrical equipment, cabling, and electrical capacities. So the public expertise in these matters. So, in a way, ease and reliability."* (RP5)

4.2.2.8 Service reliability

Due to the nature of the partnership, the reseller's reputation is significantly dependent on the functioning of the case company's offering. Issues with the early versions of the offering have raised cautiousness among the reseller informants about the service reliability, even though the current consensus was that the difficulties had been mostly overcome.

> *"After all, we want to be the quality supplier in this area and we don't want to lose our reputation, so it's important for us to have the customer's trust. We create a lot of other services for the customer, so we don't want to screw up the relationship in any area."* (RP1)

Also, the case company informants recognized the reliability of the offering to be a key factor in assessing the platform quality. Minimizing errors in functionality and setting the reliability of the offering as a priority could be considered as a table stake, and not particularly a value-adding factor. However, the industry being still in the development

phase, the functionality of the systems is not always given. In this case, meeting the minimum expectations of having a functioning product-service offering was therefore perceived as a value generating factor at least when compared to the other available solutions in the market.

> *"One of the advantages is definitely something that we get praised for, and what we've just received feedback of is that our system works. We have many competitors whose cloud service coughs and splutters all the time. Our reliability is at a good level."* (FF6)

Support in the aftersales was considered to be one major aspect in the resellers' assessment of the platform quality. The complexity and novelty of the industry were again key factors that increased the need for support from the platform's side. Support was needed in both business establishment phase and in the daily operations. Resellers' customers often needed specific assistance and asked questions that concerned the CSO, which in turn increased the information exchange between the reseller and the platform. The platform was expected to be available at all times for these kinds of contacts and also in case of CP or user application malfunction.

> *"And then we have generation #3* [of EV owners]*, that is the EV owner that went into the dealership, and he was sort of convinced that he should get an EV. He went into dealership, and the first car he noticed was an EV. It was pushed to him, and he considered this an interesting option, that could fit. He has huge requirements for service, and has zero tolerance for issues, is willing to pay for the charging, at the same time he requires it to work. And this is the EV owner we are dealing with today, so he has high requirements for functionality, service, uptime, access, and that the infrastructure is growing, because he bought this EV not because he's a hippie. He bought it because it's mainstream and he is – we call it like it's retail, sort of."* (RP2)

4.3 Value creation mechanisms for resellers in EV charging platform ecosystem

The generic issues of the resellers lie within the motivational factors that were revealed in chapter 4.2.1. The common denominators for the resellers to participate in the EV charging business were:

1) Adapting to changes in the energy markets
2) Desire to strengthen own position in the energy industry

These jobs form the first part of the case company's value creation mechanisms for its resellers: the value proposition. Helping its reseller customers to adapt to the challenges in the energy industry and enabling them to penetrate into the EV charging industry forms the fundamental value proposition for the platform resellers.

The value generating factors were explored in order to reveal the sources of competitive advantage of the case company. From the analysis we can draw altogether seven differentiated factors that the resellers found valuable in the offering: advanced product-service offering, collaboration and communication, flexibility of the solution, future-proof solution, strategic fit, turnkey solution, and platform credibility. These factors and their related platform design principles are presented in **Table 11**.

Table 11. Reseller value creation principles of an EV charging platform.

Platform design principle	Function in the value creation process	Case company capabilities
End-to-end concept	Value-adding	• Advanced product-service-offering • Turnkey solution
Modularity	Value-adding	• Flexibility of the solution • Future-proof solution • Strategic fit
Trust and brand	Key platform enabler	• Collaboration and communication • Platform credibility

Sustained competitive advantage transpires from valuable, rare, and inimitable resources and capabilities that a firm employs (Barney & Clark, 2007). It can be concluded that the identified case company capabilities may be sources of competitive advantage, as they are perceived valuable by the resellers, and they were rare in the EV charging service provider landscape. Additionally, most of the capabilities were difficult to imitate, as they would require a multifunctional organization, significant development effort, and longitudinal relationship building. The combination of these factors was perceived as the ultimate advantage over competitors.

To aid their reseller partners to break into the EV charging industry, the platform needs to identify the barriers that are preventing the resellers to do this themselves. As stated in the literature review, the most common barriers to get the customer job done are inadequate skillset, inaccessibility, lack of funds, and lack of time (Johnson & Christensen, 2008). The value generating factor analysis reveals a hypothesis of the handicaps that form barriers for resellers to adapt to changes in the energy markets or strengthen their position in the energy industry. The barriers that resellers are facing when trying to enter the EV charging market can be drawn from the interview data to include at least a) lack of industry knowledge, b) lack of skillset to produce a competitive product-service offering, c) lack of sufficient network, d) inaccessible information. The platform offering has qualities such as advanced offering in a turnkey form, that help the resellers to adopt the EV charging business and overcome the barriers that prevent them from entering the industry.

As concluded in the literature review, a platform may increase its attractiveness and become more powerful by adding new layers to its core interaction. The case company's core interaction is enabling charging service and allowing currency exchange between the CPO and the EV user. The findings show that there are main platform design principles, that facilitate adding new layers to the core interaction, thus increasing the value to the platform participant, who in this case is the reseller. These value-adding layers are

possible through the platform's end-to-end concept and modularity. The end-to-end concept derives from the turnkey offering and its advanced state. The modularity of the platform architecture provides possibilities for mass-customization, that enables the platform to cater for an array of different types of reseller partners, as the core of the offering remains the same for all resellers.

The trust and brand principle functions as a key platform enabler. It does not bring added value to the platform but acts as a fundamental requirement for the platform to operate and attract participants. Despite the platform theory role of this principle, we can conclude that based on the findings it was still found as a value creation principle from the reseller's point of view. It seems possible that due to the industry novelty, the platform credibility and collaboration and communication that form the trust and brand principle are not achieved by all industry participants.

The final building block of value creation mechanism frame synthesizes the value proposition and the sources of the competitive advantage to form inputs and activities required for value-adding. The inputs and activities are as follows: A. Ensuring functioning and quality of the EV charging network through curating and managing the network; B. Expertise and thorough knowledge of the EV charging market, networks, technology, and regulations; C. Ability to provide modular end-to-end solution. By following these mechanisms, the case company is able to create value and added value through its platform for the reseller partners, and possibly attract new reseller partners.

The value creation mechanisms framework is presented in **Figure 16**. The framework represents the interplay of emerging theory of reseller's position and role description in a platform ecosystem in the EV charging industry and the existing theory of value creation and platform business models. The framework has the EV charging platform ecosystem context embedded within the mechanisms, thus for clarity, the context is not separately displayed as it was in Figure 9 in the literature review synthesis.

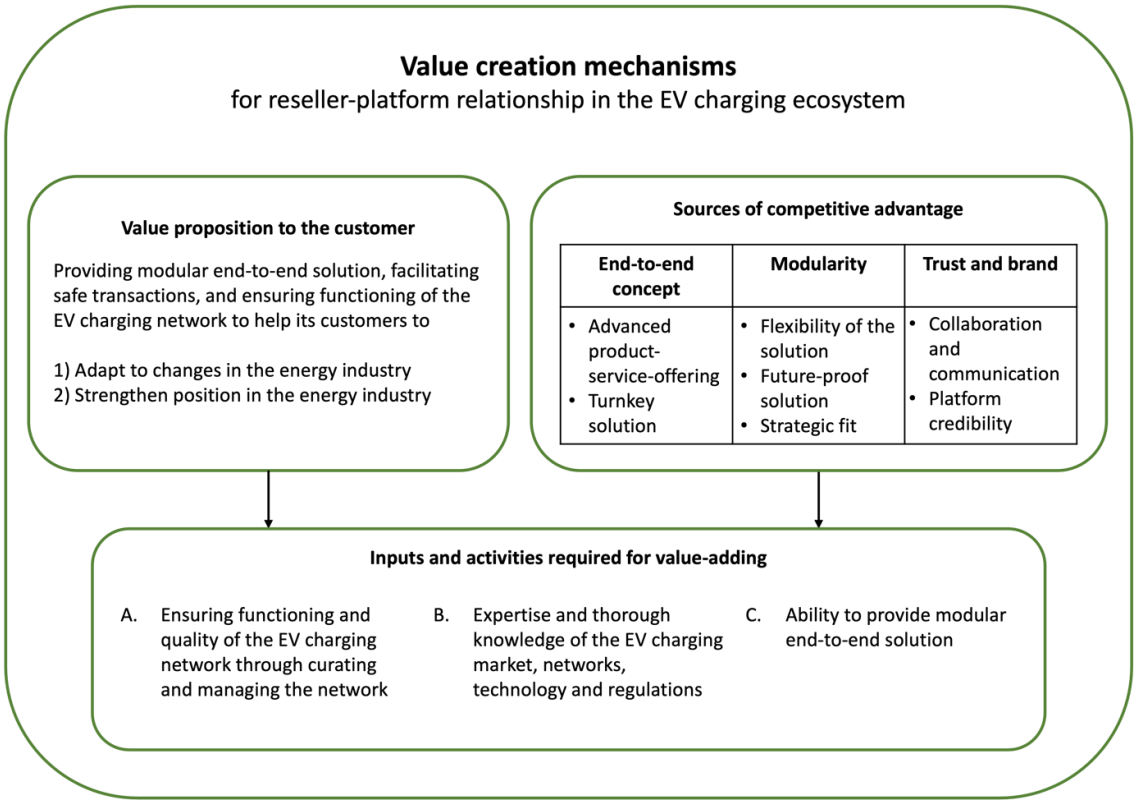

Figure 16. Value creation mechanisms of an EV charging platform ecosystem for its resellers.

5 Conclusions

In this chapter I will discuss the interpretations of the findings and the most important results obtained from the empirical study. This chapter will begin by summarizing the key findings in relation to the research question and objectives. We will then move on to the theoretical and managerial implications, and finally look into the possible avenues for further research. The main areas covered in this thesis are the ecosystem roles of reseller and the platform in the EV charging context, and how value is created for the resellers in it. Let us now review the conclusions of this empirical study in the same order as they were discussed throughout the text.

5.1 Key findings

5.1.1 Define ecosystem roles

In this chapter I answer to the first research objective:

RO1: Define the roles and responsibilities of the platform owner and the reseller in the EV charging platform ecosystem.

The findings disclosed, that the reseller's main role function is quite simply to sell the platform offering and by that also expand the platform's charging network. In addition to the sales function, the reseller's role was seen to take care of installations and maintenance of CPs either by themselves or through contractors and being the foremost contact with the customers and EV users. Resellers were also expected to become the expert of the EV charging market with the help of the platform's knowledge. The reseller's role includes different additional activities and responsibilities based on the reseller type. They also represented different placements in the ecosystem map. However, what was

common to all reseller types was being the intermediary between the CPO customers and the platform.

Three distinct reseller types were identified from the findings. The three types have distinctive capabilities: the pure reseller has selling and networking capability, the hybrid reseller has offering bundling capability and the complementor-reseller has the capability to produce complementary services. All three types of resellers can be valuable for the case company to seize the long tail of the EV charging market, as they complement the case company and each other in the ecosystem. To be able to exponentially scale the sales of the EV charging offering, in other words sell as many charging points as possible, the case company needs to either have a strong fleet of contractors for the installation and maintenance activities or outsource this to the resellers. The most convenient reseller type for this purpose is one that either is a complementor-reseller, or another reseller type with strong networking capabilities among the target location's mechanics to aid them in building a functioning maintenance network through contracting.

A surprising finding was that none of the interviewed reseller partners were operating with the specialized reseller model that some of the platform owner representatives described. All of the current reseller partners had either a complementor-reseller model or a hybrid reseller model. Therefore, it could be implied that the reseller partners aim to maximize the potential revenue from the EV charging often through vertical integration and extend the use of resources that are connected in this industry, as the industry capabilities can be utilized in the recognized additional roles for the reseller in the complementor or EMSP functions. The underlying motives and future objectives of the resellers are major findings that the platform should take into consideration when designing its reseller model and value propositions.

Some of the interviewed hybrid resellers are investing in EMSP companies, and some are transitioning to become one themselves. This could indicate that a very lucrative position in the ecosystem might be found in the EMSP role. The resellers' growing interest

towards becoming an EMSP seemed to be welcomed by the platform owner, allowing the platform to streamline its value chain and focus more on the back-end operations of the charging network management.

An important finding about the hybrid reseller's role and the platform design principles affecting it was that the hybrid resellers found multihoming to other platforms unprofitable. This may be because by obtaining the EMSP role the hybrid reseller becomes so tightly coupled with the platform, that multihoming to another platform would become very expensive and difficult. This also translates to the lock-in abilities of the platform. If the resellers would find the case platform to be more valuable than others, they would often find the lock-in effect so strong that it would prevent the resellers from joining other platforms. The other reseller types did not seem to be affected by the lock-in effect, and in fact the complementor reseller was found to benefit from the multihoming as it was not tied to just one platform. These findings highlight the importance of recognizing the different reseller types within the platform ecosystem.

A very interesting and quite surprising finding was the ecosystem structure. The elasticity of the reseller's role in the platform ecosystem seems unconventional to the platform theory. The hybrid reseller adopted part of the platform's ecosystem role, with a theoretical implication that the hybrid reseller will in fact adopt the sides of the platform to their network, replacing the customer and EV user front with its own service as opposed to the platform's. In addition, the complementor-reseller merged its intermediary role with the contractor complementor's. These findings indicate that the reseller gravitates towards assuming a supplementing role from the ecosystem in addition to its intermediary role. Understanding of the extent of reseller's role and its applicability to platforms operating in other industries remain to be studied further.

This work recognized that all of the three identified reseller types; the specialized reseller, hybrid reseller and the complementor-reseller; were desired resellers for the case company, as they supplement the market needs in valuable ways. The hybrid reseller

assumes the EMSP role, that the platform seems to shift away from. The complementor-reseller on the other hand provides complementing services of installing and maintenance, that are essential for the physical charging network growth. The specialized reseller not being represented by any of the informants remains a purely hypothetical type as it was described by some of the platform informants. It is, however, a desired reseller type according to the case company's descriptions that arose from the interviews. In an ideal reseller type ratio, the installing service supply is in balance with the demand arising from the offering sales. This means, that the platform owner should consider the installing and maintenance network size and elasticity in comparison to the sales potential. As all three reseller types were considered to be beneficial for the case company, the customer jobs of them all will determine the value creation mechanisms of the platform.

5.1.2 Reseller motives to participate in the platform ecosystem

The second objective for the research was as follows:

RO2: Obtain an understanding of the motivations driving the EV charging platform resellers to adopt the case platform

I explored the motivations of the resellers to adopt the case platform, and found, that the different reseller types were driven by the same motive**: to penetrate the EV charging industry and thus strengthen position in the energy market.** A more in-depth notion that arose from the data was that the resellers were facing both pulling and pushing forces that drove them to adopt EV charging industry to their portfolio. Many reseller informants communicated challenges in the current energy and utility markets, which were their main industries. To strengthen market position, the resellers saw that they had capabilities to vertically integrate to the EV charging business. Therefore, the

motives to participate were deriving from both challenges and opportunities that the resellers were facing in their current situations.

The reseller's motives to participate in the platform ecosystem represent the customer jobs that the resellers wanted to get done. The motives were found to emerge from the needs to adapt to changing original industry of the reseller, and from the desire to strengthen position within the energy markets. These generic issues were further found to be contributing to the basis for the value proposition of the platform.

The value proposition for the platform's resellers differs fundamentally from the value proposition to the platforms end users and suppliers. In the literature, platform's value proposition is often related to its fundamental purpose: to facilitate interaction between participants. In the case of an EV charging ecosystem, the platform value proposition is quite simply to facilitate the charging transaction of the electric vehicle, providing energy for the battery of the EV user's vehicle, and allowing the CPO to monetarily gain from the charging points it has connected to the platform.

5.1.3 Value generating factors

The third research objective was:

R03: Describe the value generating factors of the platform offering

Throughout this work I have argued that the significance of understanding the reseller's point of view in value creation is critical for the case company's success. In particular, I have demonstrated that the current literature sees value creation unanimously subjective and dictated by the customer. Therefore, this study explored the factors that the reseller partners found valuable in the case platform and their business relationship. There were altogether seven factors that the resellers found valuable in the case platform's offering: advanced product-service offering, collaboration and communication,

flexibility of the solution, future-proof solution, strategic fit, turnkey solution, and platform credibility. These value generating factors were seen as capabilities unique to the case company. Moreover, they were found to be connected to three value adding platform design principles: end-to-end concept, modularity, and trust and brand. These principles enable the platform to leverage the platform business model and form sources of competitive advantage in the market.

5.1.4 Value creation mechanisms for a reseller in an EV charging platform

Finally, the value creation mechanisms form through combination of the value proposition, sources of competitive advantage and inputs and activities required from the platform for the reseller. The inputs and activities of the platform were derived from the value proposition created for the selected reseller partners, as well as the identified sources of competitive advantage.

The activities and inputs of the case company were A) Ensuring functioning and quality of the EV charging network through curating and managing the network; B) Expertise and thorough knowledge of the EV charging market, networks, technology, and regulations; C) Ability to provide modular end-to-end solution. These inputs are the foundation to how the platform should operate in order to create value for its resellers. Together with the value proposition and the sources of competitive advantage they stipulate the contextual implications of the EV charging platform ecosystem to the value creation theory, forming the answer to the research question of this thesis:

How does an EV charging platform create value for reseller partners?

5.2 Theoretical implications

This thesis has contributed to the theory of EV charging platform ecosystem actor roles and functioning through explorative theory-building research. It provides a description of the reseller's role, which has been untouched in the platform ecosystem research until now. Moreover, the study provides contribution to the value creation literature by shedding light on the reseller perspective through value creation theories with an added platform theory layer.

The theoretical framework combines notions and different schools of thought from platform ecosystem and value creation literature with added insights from strategic management. The finalized framework explains the value creation mechanisms in an EV charging platform for the resellers. In value creation literature, the value is most often examined through the focal firm perspective and occasionally through the eyes of the customers. This theory-building thesis provides a first-of-kind explanation for this particular perspective on value creation. Therefore, it should be stressed, that additional studies are needed to validate the findings from this single case study.

The literature suggests that value is subjective. The three reseller types identified reinforce this theory, however the perception of value can be similar among the distinct reseller types. The value generating factors can be of varying importance and relevance to each customer segment, but in this context some common value creation mechanisms were found to hold true regardless of the reseller type. As there are no precedent studies of value creation from a reseller's perspective, the theory does not provide gauge for the empirical findings. However, we may contrast the findings from theory in focal firm perspective to the empirical findings of this study. Similar to Amit & Zott's (2001) findings for value creation in e-business, the case EV charging platform utilizes the principles of novelty, lock-in, complementarities, and efficiency as basis for the value creation mechanisms for resellers. The counterparts are found in the empirical findings for the sources of competitive advantage: the advanced offering and flexibility of the solution translate to novelty, collaboration and communication and turnkey solution provide the lock-in

effects, strategic fit translates to complementarities, and finally platform credibility and future-proof solution provide the efficiency factors. While the sources of value creation in Amit & Zott's (2001) study are not equivalents to the sources of competitive advantage found in this study, it should be noticed that there are similarities in the logics.

The platform ecosystem theory is extended by this study through providing a specific EV charging platform ecosystem description, as well as adding the reseller's role in it. The current nature of the EV charging ecosystem and establishing the role and boundaries for reseller actor are important contributions to the platform theory, as these have not been discussed in the literature before. It is important to recognize the reseller's role in the platform ecosystem, as there is evidence of its existence in the real-life business scenarios, and it is clearly an important actor within the EV charging platform ecosystem. This thesis shows how the reseller actor firstly has a default state, and secondly may take different forms through mergers with other ecosystem roles.

The three different reseller types that were found in this study indicated three different types of offerings according to the value creation and more specifically the customer job theories. Platform business model enables the case company to harness modularity to create a solution that is unchanged at the core, but malleable on the boundaries to fulfill each reseller type's growth objectives. This *mass-customization* allows efficiency as the core jobs were found to be the same for all reseller types. The implication for value creation theory is this: different types of reseller customers may find the same value proposition appealing, if the offering allows modular alteration depending on the specific growth objectives of the reseller.

5.3 Managerial implications

Organizations across industries are seeking to create value through platform business models. As the platform model grows more popular, so does the competition that the businesses utilizing it face. To gain a critical mass to their networks and succeed,

companies need to understand their value creation possibilities that the platform model provides. Through the use of resellers, a platform may be able to increase their market reach significantly.

As companies are increasingly using resellers for reaching the market long tail, it is important to recognize what do these resellers value in the offering. The resellers valued the easiness of the turnkey solution combined with the high-quality, advanced EV charging platform offering. These factors helped the resellers to penetrate the market with a valuable solution, while minimizing the investment costs of product development and market entry.

Another value-adding factor segment consisted of the offering's flexible elements, that can be seen as the modular parts of the offering. Through modularity the companies are able to attract different types of reseller segments with an unchanged core offering, and therefore develop the offering in the most cost-efficient manner, as the resellers bring in value-adding complementarities to the platform through the modularity. In this particular case of an EV charging platform, the modularity is found in the core EV charging background system's integration possibilities, that the resellers may build their own EMSP offering on top of, as well as the applicability to a range of hardware that the resellers might engage with as they see fit. The modularity also helped the resellers to find the offering as a good strategic fit to their specific needs, and to provide a malleable basis for future development, which is an advantage considering the rapidly evolving nature of the EV charging industry.

Finally, the resellers were found to put value to the platform's credibility and the collaborative way of working. While these factors might be hygiene factors in other industries, the EV charging market's novelty has resulted in a fragmented market with offerings of varying quality. At this growth stage of the industry development, the credibility and good collaborations rose to great value among the resellers, who found it difficult to find similar offering providers with a good reputation.

In an industry, where the offering is of novel quality and requires some extent of expertise from the reseller, it is essential to find the competitive advantage by looking from the reseller perspective. Attracting capable reseller partners requires the platform to formulate an appealing value creation mechanism through analyzing the value generating factors and the value proposition specific to the targeted resellers, as was done in this study to form the hypothesis of the sources of competitive advantage. The framework provided in this thesis provides aid in assessing the value creation mechanisms from the reseller perspective in platform-based ecosystems.

This study further suggests that different reseller types should be recognized, and their jobs and perceived value-generation factors assessed in order to formulate a value creation mechanism for them. In addition, the study explains how assessing the value perception from reseller's point of view improves the overall competitive advantage of the organization. In addition to the value adding factor description, this thesis provides a definition of roles and responsibilities of the EV charging platform owner and resellers within the ecosystem, which managers may find useful when building reseller models and partnerships.

5.4 Limitations and suggestions for future research

According to the sample we examined in this study it seems, that the resellers need another incentive to diversify to the EV charging industry in addition to the intermediary role. The specialized reseller being a purely theorized role, an exciting topic of research would be to see if it is a role presented in the real-life business scenarios.

In the future we might see new kinds of reseller models evolving from the ones identified in the study. These possible other reseller types and their relation to the EV charging platform provide an interesting topic for further research, as does the EV charging platform evolvement altogether.

As this study shed light on how platform may provide value for its resellers, a fruitful avenue for future studies would be how can the reseller create value for itself and for the platform by participating in it. The recognized reseller types provide an implication, that by assuming other platform ecosystem actor functions, the resellers are able to generate more value from their existing EV charging business capabilities. In other words, they are able to generate “more bang for the buck” invested in running the EV charging business.

The methodological choice of case study sets limitations to the applicability of the findings. As the unique nature of the case study leaves hanging questions about the validity of the findings, an obvious suggestion for additional research is to validate these findings in another EV charging platform company. Due to the context-specific design of this study, the introduced value creation mechanism frame invites further research on the reseller actors within platform ecosystems also in other industries.

As the reseller model was in its early testing phase at the time of conducting the study, the model may have been developed or changed by the time of publishing this study. Nevertheless, this study provides an as-was description of the first-phase reseller model and its implications to the value creation and platform ecosystem theories.

There is an evident limitation regarding the context of the study. As discussed earlier, the EV charging industry changes and evolves on a high velocity, providing different business models and value creation mechanisms at a soaring rate. This speed of development sets challenges to any research done of the industry, as the repeatability will suffer due to the changing ecosystem dynamics of the industry in its growth phase.

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Appendices

Appendix 1. Preliminary research questions for the reseller partners

Introduction

- Permission to record the interview, and clarifying the confidentiality of the interview
- Interviewer and thesis topic introduced
- Could you tell about yourself and your role at the company? What are your responsibilities?
- Could you describe the organization that you work in?

Business model description

- What are your products at the moment?
- Who are your customers? Segments/relationship with them/sales channels
- How do your revenue streams and cost structure form?
- What kinds of partnerships do you have?
- What are your company's key activities? How do your internal resources support them?
- What is your value proposition?
-

Ecosystem roles

- How would you describe the electric vehicle charging ecosystem?
- What kind of a role does your company have in the electric vehicle charging ecosystem?
    - What kinds of responsibilities does this role include?
- How would you describe your company's relationship with [CASECOMPANY]?
    - What does each party do in this relationship?
- When did your collaboration begin with [CASECOMPANY]?
    - What is/or was your role in the collaboration?
- What kinds of challenges has there been in the collaboration?
- Has there been something particularly successful in the collaboration?
- How would you describe a successful partnership?
    - What kinds of requirements does that mean for your company?
    - What kinds of requirements does that mean for [CASECOMPANY]?
-

Motivation to participate in the EV charging platform

- What were the reasons behind beginning collaboration with [CASECOMPANY]?
    - Internal/External/Client needs/others
- What are the most important things for your company in this collaboration/partnership?
- How important is [CASECOMPANY]'s offering for your company?
- Has the partnership with [CASECOMPANY] required changes in your way of

thinking or operations?

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- Value creation
- How does electric traffic support your business goals?
- What are your customers' expectations of you as a company?
- How does [CASECOMPANY]'s offering support you in your business goals?
- What kinds of business needs do you need [CASECOMPANY] to fulfill at this moment?
    - Where do these needs come from?
- What kinds of tools do usually use to serve your own customers when reselling [CASECOMPANY]'s offering?
- What kinds of customer needs do you as a company need to fulfill in the future?

Future aspirations

- How would you visualize the EV charging ecosystem in the future?
    - What is your company's role in it?
    - What is the reseller partner's role in it?

Ending

- Do you have any other thoughts about these matters that we haven't yet discussed?

Appendix 2. Preliminary research questions for the case company

Introduction

- Permission to record the interview, and clarifying the confidentiality of the interview
- Interviewer and thesis topic introduced
- Could you tell about yourself and your role at the company? What are your responsibilities?

Business model description

- What are your products at the moment?
- Who are your customers? Segments/relationship with them/sales channels
- How do your revenue streams and cost structure form?
- What kinds of partnerships do you have?
- What are your company's key activities? How do your internal resources support them?
- What is your value proposition?
- Describe the digital and physical features of the offering.

Ecosystem roles

- How would you describe the electric vehicle charging ecosystem?
- What kind of a role does your company have in the electric vehicle charging ecosystem?
- What kinds of responsibilities does this role include?
- How would you describe your company's relationship with the reseller partners?
- How would you describe a successful partnership?
    - What kinds of requirements does that mean for your company?
    - What kinds of requirements does that mean for [CASECOMPANY]?

Value creation

- How do you aim to fulfill reseller partners' needs and aspirations with the offering?
    - What do you offer, and what do you want to offer to the reseller partners?
    - What don't you want to offer to the reseller partners?
- What are the similarities in the case company's offering when compared to rivals?
- What is the competitive advantage of your offering?
- Where do you find room for development in your offering? (From your own perspective/reseller partners' perspective)

Future aspirations

- How would you visualize the EV charging ecosystem in the future?

    - What is your company's role in it?
    - What is the reseller partner's role in it?
- How would you describe the case company's offering in the future?

Ending

- Do you have any other thoughts about these matters that we haven't yet discussed?