an

international growth strategy

for an

electric vehicle charging product-service startup

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An international growth strategy for electric vehicle charging product-service startup

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Preface

It is my great pleasure to present my master thesis. This thesis focuses on developing an international growth strategy for an EV charging product-service startup from the Netherlands.

This thesis marks the end of the master Strategic Product Design, and with that my time at the Delft University of Technology.

First I would like to thank everyone from Revolt for all their time, feedback and questions. Without all your input I would not have been able to reach the results that I have now. A special thanks to Rutger, Jeroen, Florine and Kevin, our regular discussions really shaped the process.
And besides all that, thank you for welcoming me to your company and making me a part of your team.

Secondly I would like to thank my supervisors, Pinar Cankurtaran and Matthijs Buijs. I enjoyed being challenged by you, and our constructive conversations really helped me out when I felt stuck.

Thanks mom and dad, for providing me the freedom to explore what I would like to do, always offering a listening ear and challenging me to at least try.

And finally, let's not forget my friends who have had to spend hours listening to stories and facts about electric vehicles.

This graduation project has shown me which parts of the field of Strategic Product Design really energise me, and which ones I enjoy a little bit less. It also emphasised the importance of collaboration, team work and honest feedback.

Moreover I enjoyed getting to know the complex and dynamic context of the EV market. A world that was completely new to me, but I would like to think I can call myself a bit of an expert in that field now. And I hope that after reading this thesis, you will too.

Jules

Executive summary

This thesis presents the results of the research into and the development of an international growth strategy for Revolt, a B2B provider of a product-service system for EV charging.

Revolt provides charging points for electric vehicles through a subscription model. For a fixed monthly fee, customers receive a charge point, the installation, maintenance and accompanying services.

The EV market is developing rapidly and the rate of adoption of EVs is growing. Companies feel the need to provide EV charging to their employees, customers and visitors. However, they often do not have knowledge about the charging infrastructure, nor do they have the budget to invest in charging stations.

For these problems, Revolt provides a solution. By providing an all-in-one service, from technical feasibility to maintenance and backoffice systems, the customer does not need to worry about these and they can rely on Revolt's expertise.

The Netherlands is a forefunner in the field of EVs and the charging infrastructure. Revolt has found product-market fit here, but in order to reach scale and network effects they need to expand beyond the borders of the Dutch market. For that reason, the co-founders have asked the author of this thesis to research the European market and develop an international growth strategy for Revolt.

During the research, the author was part of Revolt's team. This allowed the author to easily get in touch with all employees, access internal documentation and experience the company culture. By integrating in the team, the author was able to gather knowledge and validate ideas quickly.

By means of a literature review, internal and external analysis, quanitative market research and qualitative market validation the author has created a market segmentation and ranking. By using design methodologies and principles, the author has developed a market entry playbook, which serves as a manual for foreign market entry. This thesis presents the results of this research.

The literature review presents an overview of traditional market entry strategy literature, supplemented with literature on resource-based analysis, effectuation logic and psychic distance. Based on the results of this review the author has developed a process for the international market selection and entry.

Based on internal and external analysis the author developed a market data dashboard which analyses and ranks markets on quanitiative factors. The results of this analyisis led to the segmentation of potential markets in mature, high-growth and easy-to-enter markets. After a resource-based analysis of the fifteen most promising markets, the author has done a micro-level research on Austria, Belgium, Germany, Italy and Poland. This micro-level research included e.g. charging behaviour, legislation and expected needed charge points per region.

Based on the micro-level analysis and interviews with experts in Germany and Italy, the author recommends Germany as the first market to enter, more specifically the state North Rhine-Westphalia.

To assist Revolt in the foreign market entry the author has developed a market entry playbook. This playbook covers the market research, entry and validation and provides decision-making guidelines for each phase. The author ends with general and internationalisation-specific recommendations.

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All figures are made by the author, unless specified otherwise

Reading guide

This is a chapter title

This text is the introduction of a new chapter. It shortly describes the content of the chapter and it's results.

This is the main body text.

This text is used to emphasise important parts of the main body text

This is a subchapter title

And this is a paragraph title

↘ **Important conclusions and takeaways are presented like this in a chapter. These call-outs can be found mid text.**

Figure - figures and tables have captions that look like this

the pages with the main conclusions and takeaways from each chapter are earmarked

CHAPTER 1

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project introduction

1. Project introduction

This chapter discusses the problem and scope of this project, the research questions, project approach, methodologies used and the structure of this report.
The goal of this project is to develop an advice on which markets Revolt should enter and to develop a blueprint to enter these markets. Research is scoped to the EU and the Iceland, Norway, Switzerland and the United Kingdom.
To approach this challenge the main research question is divided into subquestions. These subqestions provide the structure for the research and this report. To answer the research questions the author uses an adapted version of the Double Diamond approach which helps to properly define and solve a design problem. Finally the structure of and methodologies used in the research are discussed to provide an insight in the development of the knowledge presented in this report.

Revolt is an all-in-one EV charge point provider that aims to take away the investment and hassle of installing EV charge points for businesses. More specifically, Revolt offers charge points in a subscription model. Customers pay a fixed monthly fee which includes the installation and maintenance of the charge points and the administrative handling of the charge transactions. Next to that Revolt also offers mobile chargers and mobile batteries.

The EV market is rapidly growing but one of the bottlenecks that is keeping car drivers from switching to EVs is the lack of proper charging infrastructure. Even in the Netherlands, the country with the highest EV/charger ratio (IEA, 2022) people give this as the number one reason for keeping their ICE cars (ANWB, 2022).

Problem definition and scope

Revolt is currently operating in the Netherlands. In conversations with Revolt's founders, it emerges that in the short- to medium term they will need to expand internationally in order to reach scale and network advantages. In addition, increasing the amount of customers and consequently the amount of installed charge points are both critical objectives in the coming two years.

This thesis presents an international growth strategy for Revolt in Europe. It presents a market analysis and advice on which countries to enter. To further assist Revolt in its international growth efforts this thesis presents a market entry playbook; a tool that covers all necessary aspects of expanding the business to a new market.

Market entry is, in this thesis, defined as entering new geographic markets with the existing product portfolio. Reasoning behind this is that product- and proposition development currently does not have priority and the focus is on expanding sales and operations within Revolt.

The initial focus in this thesis is on the EV charging points, excluding the mobile chargers and the battery.

This research examines markets that are limited by their geographical location and context, all of which are located within Europe.

Research questions

The goal of this thesis is summarised in the following research question.

Q1: "How can Revolt grow its business within the European EV charging infrastructure market in the next three years?"

By answering this question the author aims to both add academic relevance to the domain of SPD and to develop results that are relevant for the client. To better structure this research, the main question is divided into the following subquestions:

SQ1 - What is an international growth strategy?

To be able to develop an international growth strategy it is imperative to understand what an international growth strategy is and what it comprises. Answering this question allows the author to develop a structured approach for international market research and selection used in this research.

SQ2 - What is the current status quo of Revolt?

For an international growth strategy to work, the company should have the appropriate resources, knowledge, capabilities and network to pull it off. To determine whether Revolt has the right qualifications and to better tailor the strategy the company is analysed.

SQ3 - What are important developments in the EV market, EV charging infrastructure and the energy market?

The EV market is rapidly developing and customer needs with it. It is therefore important to get a good overview of the developments and trends in and around the EV market to be able to tailor the strategy to a future scenario, instead of the status quo. Insights from this question can also help Revolt with the development and growth in the Dutch market.

SQ4 - What markets should Revolt enter?

Since resources are limited Revolt is not able to enter several markets at once, hence these markets should be properly researched and scored on potential. From this analysis a ranking and sequence in market entry is developed.

SQ5 - How can Revolt set up their business in a new market?

Once a market is selected it is imperative to understand what Revolt has to do to set up their business. What processes are necessary, how will we structure these processes and who is responsible?

Approach

To develop an international market entry strategy the author makes use of an adapted version of the Design Council's (2015) Double Diamond method. The double diamond framework helps to structurally develop solutions for complex problems. The first diverging and converging phase leads to a well researched and defined problem. The second phase leads to the most optimal solution for said problem.

The author has adapted the model and added another discover and define phase to the project. In the first diamond the author reviews the literature on international market selection, entry modes and go to market strategies to develop a process for international market entry strategy for the remainder of the thesis. In the second diamond the author uses this process to analyse Revolt, it's context and potential markets to select the most promising market. In the last diamond the author develops a market entry playbook and a go to market strategy for this market. Figure 1 summarizes this process.

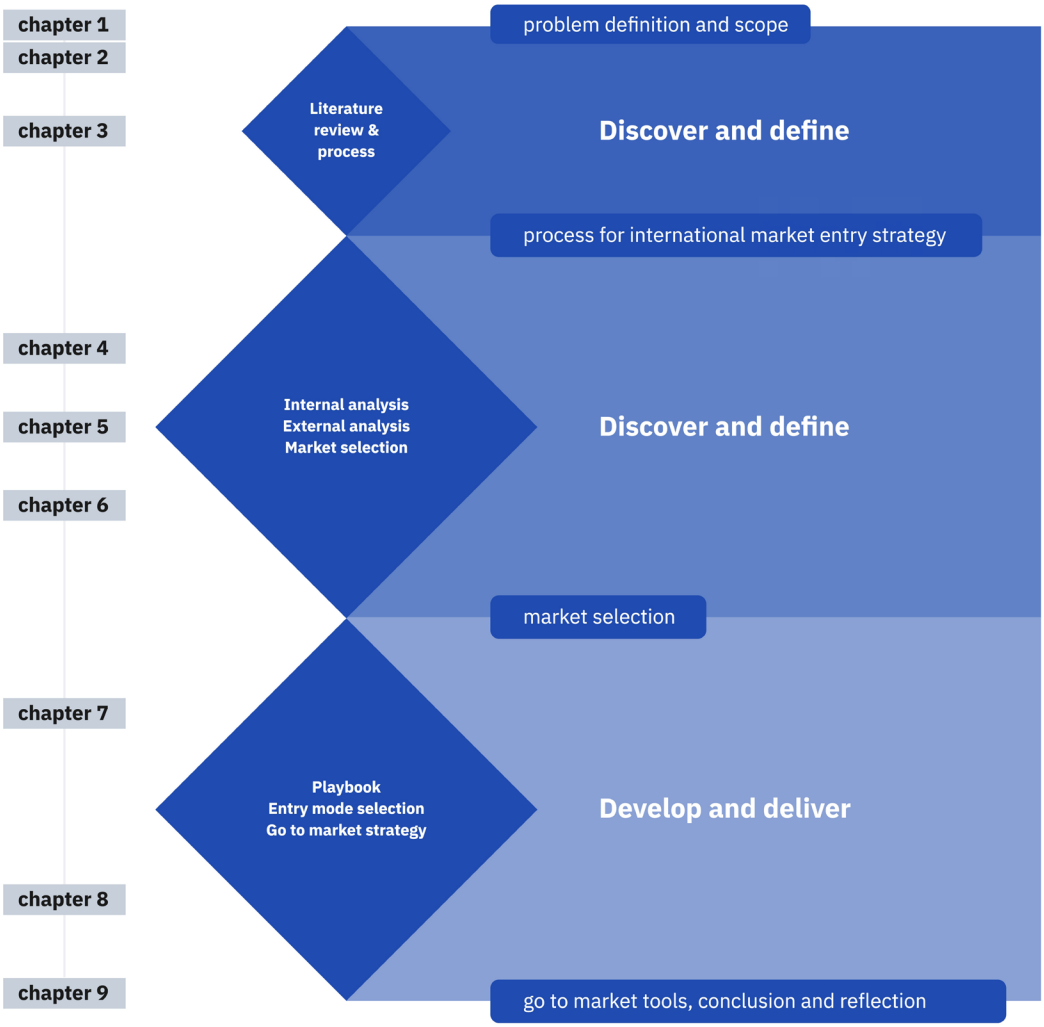

Figure 1 - the structure of this thesis, following an adapted version of the Double Diamond

Structure and methodologies

This section desribes the goal, output and methodologies for each diamond. It starts with the goal and then discusses the used methodologies and its output per diamond.

Discover and define - literature review and international market entry selection process

The goal of this diamond is to develop a structured approach for the analysis and selection of international markets and fitting entry strategy. This structured approach helps the auhtor in selecting the most promising markets for Revolt at the time of the research but will also aid Revolt in future market analysis and selection.

Qualitative research: the analysis of literature on international market selection, entry strategies and go to market strategies. Additional research into the balance between effectuation and causation logic in the international market entry strategy, and psychic distance.
↘ A structured process for analysing and selecting markets, both from an external and internal perspective. This process is used in the following phase.

Discover and define - internal and external analysis, market selection

The goal in this phase is threefold: 1) to get an understanding of Revolt as is, 2) to map the context Revolt is operating in and how this context is developing, and 3) the analysis and selection of promising markets. The analysis of Revolt and its context will direct the analysis and selection of markets.

Qualitative research: Analysis of internal documents and semi-structured interviews with Revolt founders and employees to get an understanding of the status-quo of Revolt. What do they deliver to their customers, how do they deliver this service, what supporting processes are in place? What do they want to achieve in the next three years?
↘ An overview of Revolt, what they do and what they deliver to the customer. The internal and external processes necessary for delivering the service. Strengths and weaknesses. These insights are used as input for the analysis and selection of promising markets from an inside-out perspective. The strenghts and weaknesses are used as input for the eventual market selection.

Qualitative research: Analysis of industry reports and semi-structured expert interviews to get a grip on the context of EV cars and its charging infrastructures. The results of this analysis are the develpoments within these context and how these impact Revolts business model and value proposition.
↘ An overview of the (development of) the context Revolt is operating in. This is translated to threats and opportunities which lead to input for the market selection and future recommendations.

Qualitative research: Semi-structured interviews and co-creation session with Revolts team to select the factors and their weighting for international market analysis and selection.
↘ List of 24 market factors and associated weighting.

Quantitative research: Market data analysis. Analysis of 24 data points on 31 countries to select the most promising countries for Revolt to enter.
↘ Ranking of markets. Segmentation based on three main characteristics: market maturity, expected growth and ease of entry.

Qualitative research: Semi-structured interviews and co-creation session with founders, sales lead and partnership to define most promising markets based on market analysis and Revolt's capabilities, resources and goals.
↘ Inside-out analysis of promising markets based on Revolts resources and capabilities, leading to the selection of five markets for further analysis.

Qualitative research: Desk research and semi-structured expert interviews with experts in the five most promising markets. Getting a better understanding of the local factors influencing Revolts business model the author has done qualitative research on legislation, incentives, charging behaviour and way of doing business.
↘ Ranking of the top five most promising markets, which allowed to select the most promising market for Revolt to enter.

Discover and define - playbook, entry mode selection and go to market tools

In this phase the insights from the previous research come together in the development of a market entry playbook. This playbook serves as a blueprint or manual that can be used to enter markets that are in the scope of this research (EU27 + Iceland, Norway, Switzerland and the United Kingdom)

Qualitative research: Semi-strucutred interviews with potential customers to identify jobs to be done, barriers and needs in order to validate product market fit in the new market.
↘ Insights in customer problems and needs in the new market.

Quantitative research: A/B test using social media advertising in order to measure preference for a value proposition in order to better position Revolt in the new market.
↘ Validation of the need for charging solutions at office buildings. Insight in job titles, industry segments and geographical locations with most interest.

Qualitative research: Validation session of the playbook with the founders, partnership lead and energy lead. Walking through the playbook in order to identify gaps and obsolete tasks.
↘ Validation of the value of the playbook. Input for restructuring of the content, leading to a more clear and substantiated decision making process.

Conclusion

The first chapter describes this project's context, the problem definition, the scope and research questions. Furhtermore it discusses the structre and the methodologies used to solve these questions.

Chapter two first gives a short introduction on the electric vehicle and charging context, and accompanying terminology.

Chapter three describes the literature review on international expansion, market selection and entry modes. It concludes with an international market selection process that is used for the remainder of the research.

Chapter four presents the results of the internal analysis of Revolt. It includes among others the value proposition, business model, team structure, service blueprint and sales- and marketing processes. These results influence the market selection based on Revolts resources and capabilities.

Chapter five presents the results of the external analysis. It describes the context factors influencing Revolt. The chapter summarises the most revelant findings in terms of internal strengths and weaknesses, and external opportunities and threats.

These results form a starting point for the international market selection, which is described in chapter six. This chapter covers the entire market selection process, from selecting relevant factors to the segmentation based on maturity, growth and ease of entry, to the selection of the most promising market.

Chapter seven presents the process and results of the product-market validation in this market using customer interviews and quantitative A/B tests.

Chapter eight presents two go-to-market tools: the market data dashboard used in chapter six, to rank and select the most promising markets, and a market entry playbook. This playbook serves as a manual for entering a new market, covering everything from the first customer research, to making your first sales and monitoring critical KPIs.

To conclude, in chapter nine the author presents his conclusions, the limitations to the research and recommendations both for Revolt in general as well as specified to the internationalisation.

In the appendix the reader can find additional insights and research results that are not indispensible for the research but do provide additional depth and breadth to the context of this research.

CHAPTER 2

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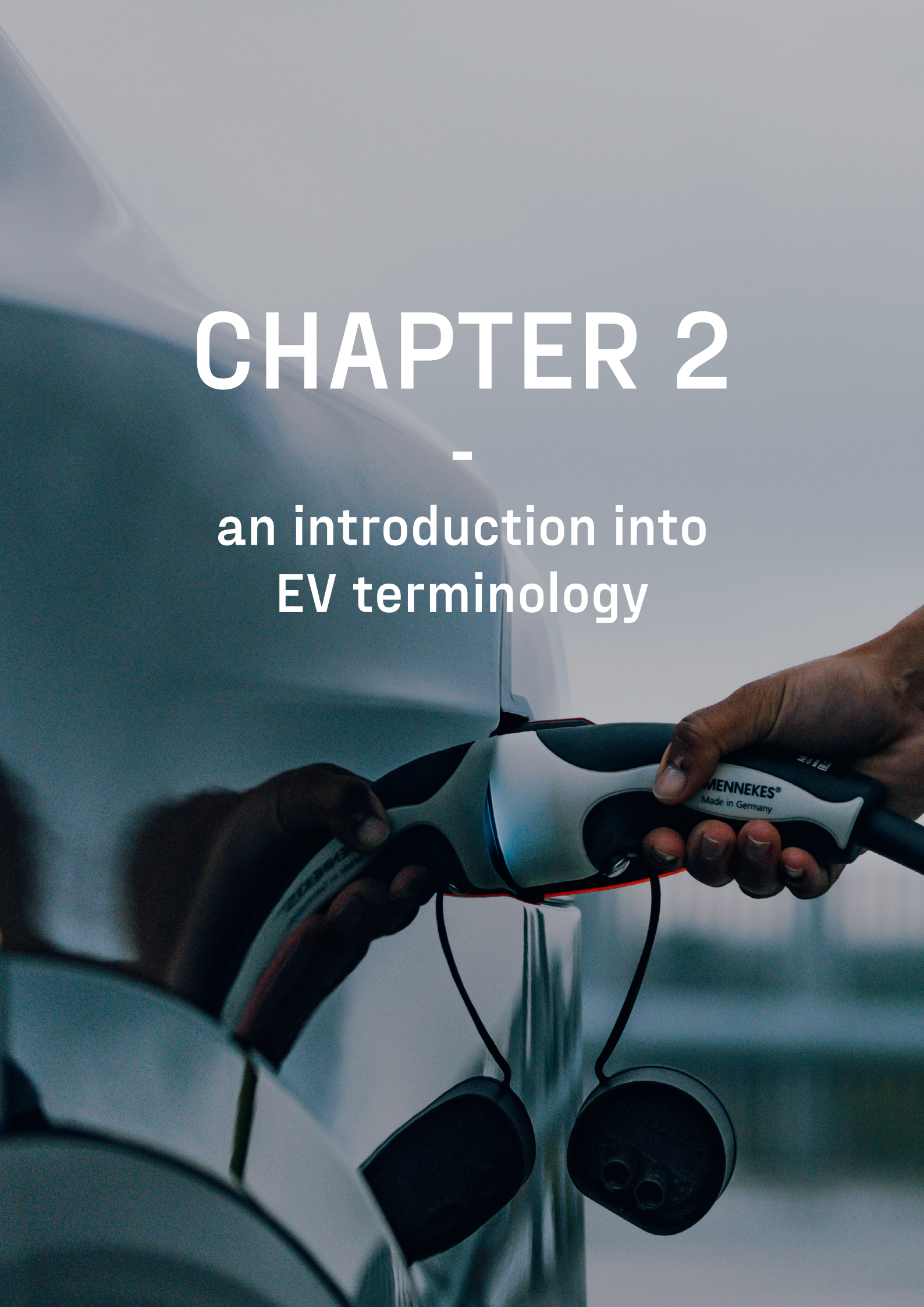
an introduction into EV terminology



2. An introduction into EV terminology

The EV market is quite new and the developments are rapidly succeeding eachother. As a short introduction to this new, exiciting market this chapter gives an overview of the most important concepts and terminology for this thesis.

What is an electric vehicle?

An electric vehicle is a vehicle that contains a battery which energy is used to drive the vehicle. There is a distinction between two types of EVs. The first electric vehicles were hybrid electric vehicles. These vehicles combine conventional internal combustion engines (fuelled by petrol or diesel) with an electric drivetrain. A famous example is the Toyota Prius. The battery in hybrid vehicles is either charged through regenerative braking, or by plugging the car into a charge point, which are called plug-in hybrid electric vehicles or PHEV.

Then there are completely electric vehicles, often called battery electric vehicles or BEV. These only have an electric drivetrain and the battery is charged by plugging the car into a charge point.

Types of charging

There are two methods of charging: AC (alternating current) charging typically delivers power up to 22kW and is considered slow-charging. DC (direct current) charging delivers 50 - 250 kW and is considered rapid to ultra-fast charging (see figure 2).

AC charging stations are 7-10x cheaper than DC charging stations. AC chargers are the common home- and office chargers, and a widespread network of public AC chargers is found in Europe. AC charge is converted to DC in the car by the onboard charger before it is delivered to the battery.

DC chargers are more expensive to use and often found along highways and at destination locations. These are places where people spend little time and thus want to charge as quick as possible. They are willing to pay a little more for this convenience. DC is delivered to the battery directly.

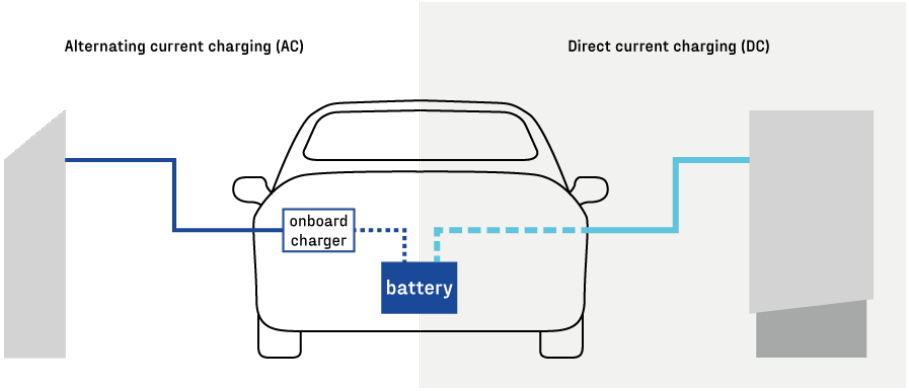


Figure 2 - the two types of charging, alternating current (AC) and direct current (AC)

The charging infrastructure

There are several stakeholders involved in providing charging infrastructure to EV drivers. Here we describe the most important ones.

The CPO or charge point operator is the company operates the charging network, provides the delivery, the installation and maintenance of the charging points. In the case of public charge points they are often the owners of the charging points.

CPOs are often the ones that set the price for the energy provided through the charge point. It is important to note that the price the CPO charges per kWh is not necessarily the price that the EV driver pays per kWh. That is because EV drivers often make use of an E-mobility provider.

EMSPs, or E-mobility service providers are the link between CPOs and EV drivers. To charge an EV you often need a card to activate the charge point. The EMSP is the provider of these cards. The EMSP needs to have a contract with the CPO to enable the use of the charge point and charge the customer for the amount of kWh used. The customer in turn has a contract with the EMSP, where they either have a subscription or pay per charge. Figure 3 presents the relationships between these players.

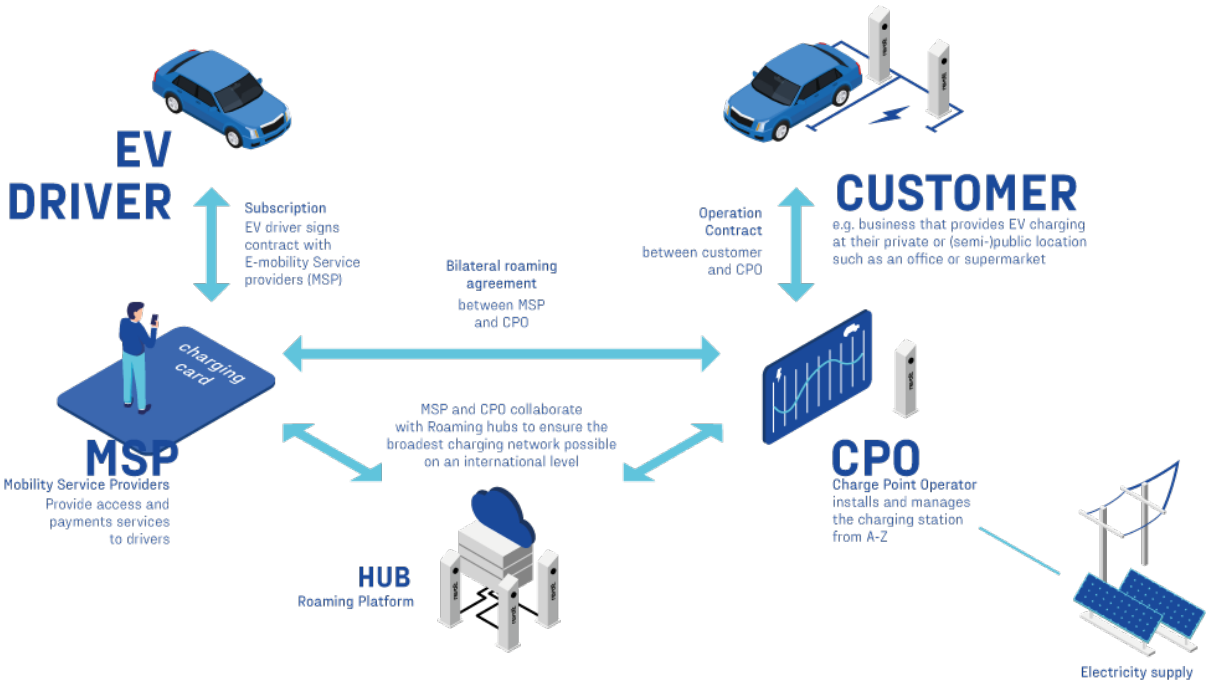
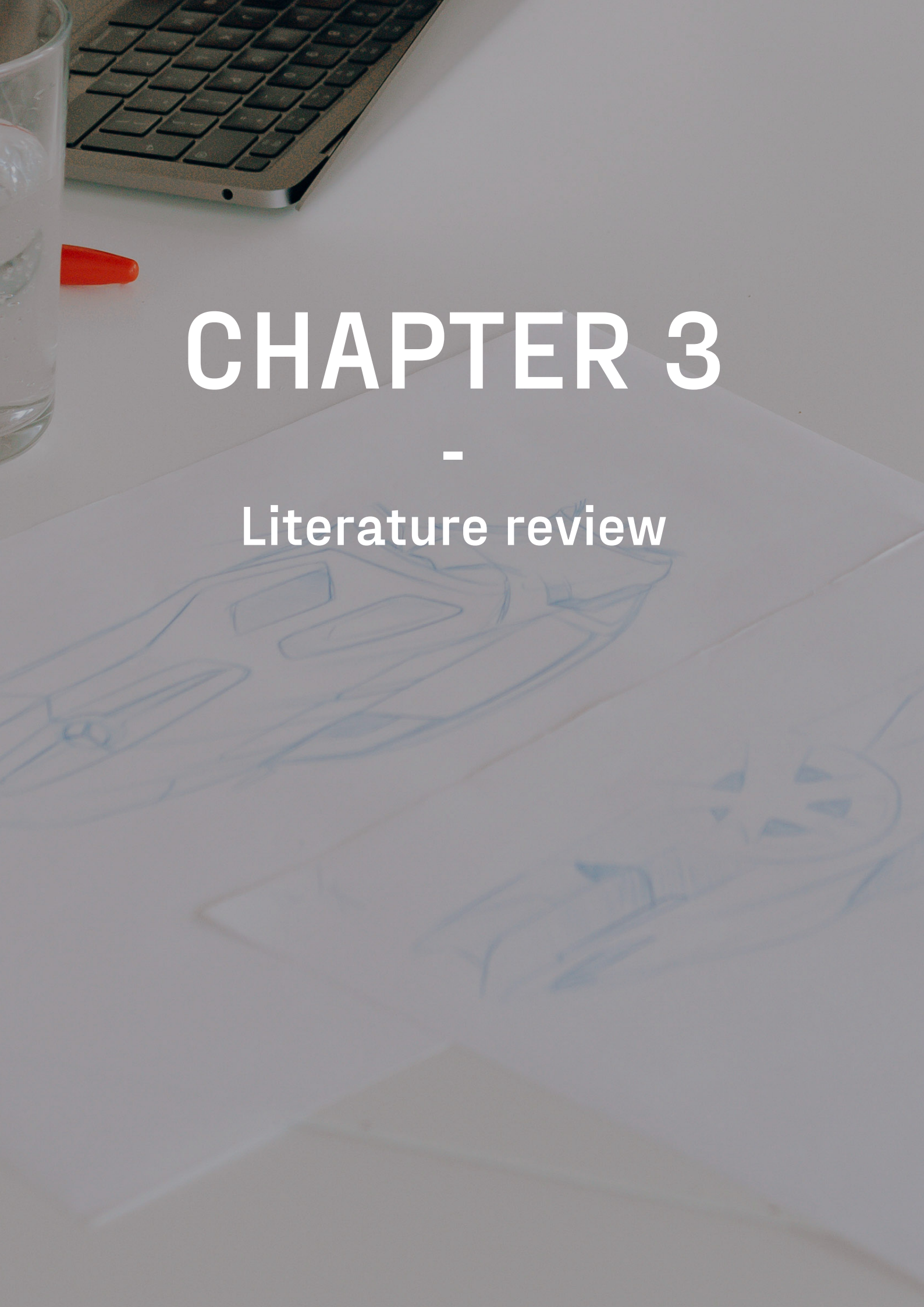


Figure 3 - the relationship and transactions between EV-driver, customers, MSPs and CPOs



CHAPTER 3

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Literature review

3. Literature review

An international expansion strategy will assist Revolt in growing its number of customers across Europe and in achieving scale and network effects. To understand what comprises an international expansion strategy and how to design one, this chapter presents a literature review that establishes a common understanding about its main elements: international market selection (IMS), entry mode selection (EMS) and go-to-market (GTM) strategy. The findings from this review are summarised in a market selection process that is used for the remainder of this research.

A framework for an internationalisation strategy

The international market entry strategy is a plan that "sets forth the objectives, goals, resources and policies that will guide a company's international business operations over a future period long enough to achieve sustainable growth in world markets" (Root, 1994, p. 2).

The development of the entry strategy entails five major decisions. The choice of the target market (IMS), objectives and goals in this target market, the choice of the entry mode for this target market, the marketing plan to execute the entry mode, and a control system to monitor the performance in the new market (Root, 1994; Douglas & Craig, 1992).

While often depicted as consecutive decisions (Andersen et al., 2001), literature suggests that these decisions are iterative and all influence each other (Chetty et al., 2015; Koch, 2001; Root, 1994; Douglas & Craig, 1982).

Internationalising entrepreneurs are faced with the problem of balancing planning and execution; how much analysis and planning should they do before they internationalise? (Chetty et al., 2015).
Literature agrees that the use of a clear conceptual framework (Kuemmerle, 2005), a decision making process (Marchi, 2014) or approaching the markets in a systematic way (Brouthers and Nakos, 2005) will greatly improve the chances of success of the internationalisation.

Foreign markets are namely more complex than domestic markets, as there can be variations in technological, economical, political, cultural, and societal factors. This complexity increases the need for rational market analysis (He & Wei, 2010)

The irrational choice however of markets based on "non-systematic criteria" (Papadopoulos and Denis, 1988, p. 44) such as personal beliefs, experiences or personal connections might be more impactful than the rational or even scientific approach to IMS (Alexander & Rhodes, 2007). This is especially predominant in smaller, startup companies that use an ad hoc, personalised and belief based approach (Alexander & Rhodes., 2007) due to a lack of resources and capabilities for extensive, rational market analysis (He & Wei, 2010).

Alexander & Rhodes (2007) however argue that elements within the analysis stage, such as, but not exclusively, culture, are revisited at a later stage in the process and are used to determine the final selection of markets in a more subjective manner, even in companies that do have the resources to stick to objective analysis. This also confirms the non-linear, iterative process of IMS and EMS as set out by Chetty et al. (2015), Koch (2001), Root (1994) and Douglas et al. (1982)

Chetty et al. (2015) also argue that strict adherence to business plans can cause the entrepreneur to be less sensitive to surprises and opportunities that allow their business to evolve. To counter this, Marchi (2014) suggests that an internationalising firm should adopt IMS decision processes *"that force the small firm's decision-maker to use more relevant information than usual, while preserving all the nuances and fuzziness of managerial judgements".*

The international market entry strategy should also match the firms resources and capabilities in order to perform optimally (He & Wei, 2010).

It thus seems that there is a delicate balance between planning, execution and iteration. To what extend this process should be focussed on analysis and planning (following causation logic) on one hand, and experimentation and execution (following effectuation logic) on the other hand will be discussed in the next section.

Balancing planning and execution

Causation logic is an approach that is based on a clear understanding of the problem, a predetermined plan, and a focus on the cause-and-effect relationship. It is a top-down, linear and predictable approach, where the firm sets a clear goal or objective and creates a plan to achieve it (Kotler, 1991). This logic is often associated with larger, established firms and is typically used in a stable and predictable environment. When using causation logic, the firm operates on the basis of risk avoidance (Frishammar and Andersson, 2009).

Effectuation logic, on the other hand, is an approach that is based on creating opportunities and leveraging available resources. It is a bottom-up, non-linear and adaptive approach, where the firm identifies and acts on opportunities as they arise (Sarasvathy, 2008). Firms that follow effectuation place more emphasis on their partners and network in developing an international market entry strategy. This logic is often associated with smaller, entrepreneurial firms and is typically used in an uncertain and unpredictable environment. When using effectuation logic, the firm ignores risk prediction and makes decisions on the basis of loss absorption to control uncertainty (Chetty, 2015).

When it comes to international market entry strategies, the use of causation logic would result in a more planned and structured approach, where the firm would conduct extensive market research, identify the target market and develop a detailed entry plan accordingly. This is in line with the Uppsala model (Johanson & Vahlne, 1977). This approach is less risky but more costly.

On the other hand, the use of effectuation logic would result in a more flexible and adaptive approach, where the firm would focus on leveraging existing resources and partnerships to enter the market. This approach is less costly but more risky.

Marchi (2014) proposes that a choice for either causation or effectuation will lead to underperformance; a highly systematic, rational approach will neglect a firm's internal and experiential dimensions (Gripsrud and Benito, 2005), leading to an international market entry strategy that is not aligned with the firms resources and goals.

On the other hand, a subjective, non-systematic approach will rely too much on gut-feeling and assumptions, posing the risk that the most promising markets are not identified (Kumar et al., 1994; Papadopoulos and Denis, 1988).

There is no consensus in literature on which logic leads to the best results in international market entry strategy (Chetty et al., 2015). Kuemmerle (2015) does argue that continually matching opportunities to resources is a key skill for managers and entrepreneurs, combining effectuation and causation logic.

Domurath (2020) argues that the choice is often dependent on the managers (i.e. the person responsible for the international market entry strategy) goal orientation profile. If the manager has a preference for learning they will predominantly follow effectuation logic in the formulation and execution of the strategy. If the manager has a preference for avoiding failure, they will follow causation logic as this is inherently based on risk avoidance.

↘ **To mitigate the extremities of choosing either one of the logics the author proposes to make two analyses following either effectuation or causation logic. This will result in a structured, rational analysis that ensures no promising markets are left out on one hand, and an analysis based on knowledge, capabilities, network and subjective judgement leading a market selection aligned with resources and capabilities on the other hand.**

Goals and objectives

Setting clear goals and objectives for the internationalisation, and clear communication of these goals and objectives within the firm is paramount for success (Kuemmerle, 2005). According Magnani et al. (2018) these goals and objectives strongly influence the approach to market selection and the selection itself since strategic objectives might mitigate the effect of underperforming market factors like psychic distance and economy. Besides communicating the goals and objectives it is imperative to also communicate the logic behind these goals (Vermeulen, 2021).
Because of the small size and lack of hierarchy in startup companies one would expect clear communication within such companies. However, given the quick adaptations and lack of certainty and structure this clear communication often is missing, while there is a need for clear messages to employees, investors and customers (Kuemmerle, 2005).

Market selection

A firm has to make a strategic decision on which market to enter based on its capabilities and resources, and allocate these resources accordingly. The chosen location significantly impacts firm performance, as it can influence strategic competitiveness, production costs, operations, management, transactions, and the ability to coordinate business activities. (He & Wei, 2010)

As discussed, small companies should use some sort of framework or decision making process. The factors included in this process should reflect the market condition, product specific- and perceptive factors (Marchi, 2015).

Market analysis

There is no consensus about the complete set of variables to be used to measure market attractiveness and accessibility (Sakarya *et al.*, 2007) and their relative weights within multi-criteria settings (Papadopoulos and Denis, 1988). There are however several suggestions on how to select these variables, and certain sets are provided in literature (Marchi, 2014; Koch, 2001)

Given the lack of resources of a small company, the selection of relevant factors is often based on "subjective judgement plus data availability" (Lockwood, 2004).

↘ **Given the size and experience of Revolt the author proposes to draw up a set of macro market analysis factors based on literature and internal analysis of Revolt. The factors will be discarded if data is not available and if possible a synergistic factor is selected.**

Psychic distance

Next to analysis of the market as is, it is essential to know how accessible this market is. A factor heavily influencing this is psychic distance; the *perceived* distance or difference between objects (Håkanson & Ambos, 2010; Alexander & Rhodes, 2007).

Related to IMS, the Uppsala internationalisation school defined psychic distance as *"the sum of factors preventing or disturbing the flows of information between firm and markets"* (Johanson and Wiedersheim-Paul, 1975). A greater psychic distance thus means less knowledge, or at least less access to knowledge about the foreign market. And since firm managers are more likely to enter markets that they can get to know easily, as opposed to markets that are difficult to get information about (Brewer, 2007), IMS tends to lean towards markets with a small psychic distance.

Psychic distance is especially influential in firms starting to expand internationally, and this influence will reduce once international activity increases (Benito and Gripsrud, 1992).

Often psychic distance is defined as (perceived) differences between countries, most often defined by cultural differences (Fletcher & Bohn, 1998). Brewer (2007) however points out that there are many other factors besides differences that affect the flow of knowledge between two players. Brewer includes, among others, commercial, political and informational ties to get a better understanding of the ease of information flows. He argues that the closer these ties are, the better the flow of information is, which equals to a smaller psychic distance (figure 4).

O'Grady & Lane (1996) however note that the notion of a small psychic distance might prevent entrepreneurs from uncovering and learning about the critical differences between markets. Since a firms performance in the market is affected by its ability to respond to market differences whether or not those differences are perceived or not at the time of market entry (Alexander & Rhodes, 2007), the notion of a small psychic distance may lead to underperformance.

↘ **In this research psychic distance is defined as the extent to which information is exchanged between two markets. A larger psychic distance means less knowledge and less access to knowledge about a market and with that less familiarity with the market (Brewer, 2007). As knowledge about a market is a decisive factor in market selection (He, 2010) and even more the perceived familiarity with this market (Alexander & Rhodes, 2007), psychic distance is therefore included in the international market selection.**

Figure 4 - the relation between familiarity, psychic distance and necessary knowledge

Market selection process

Drawing from literature on international market entry strategy, market selection, and causation and effectuation logic in business strategy, the author proposes a process for selecting target markets. Conducting objective, data-driven market analysis will ensure no promising markets are overlooked by eliminating subjective biases and preconceptions of both the author and Revolt.
Using a resource-based analysis, the results of the market-based analysis can be analyzed to verify that Revolt has the necessary resources and capabilities to enter the selected markets.

The market-based analysis consists of the following steps; 1) defining the scope of the analysis, i.e. which markets to include, 2) defining the analysis factors and their associated weight, 3) collecting the data on all factors, 4) analysing this data and finally 5) ranking the markets based on this analysis.

The resource-based analysis constists of; 1) internal analysis, 2) defining the scope of the market analysis, 3) defining the succes factors for these markets (i.e. which characteristics of a market align with internal resources, capabilities, knowledge, network etc.), 4) analysing the markets on these factors and again 5) ranking the markets based on this analysis.

Figure 5 summarises these processes.

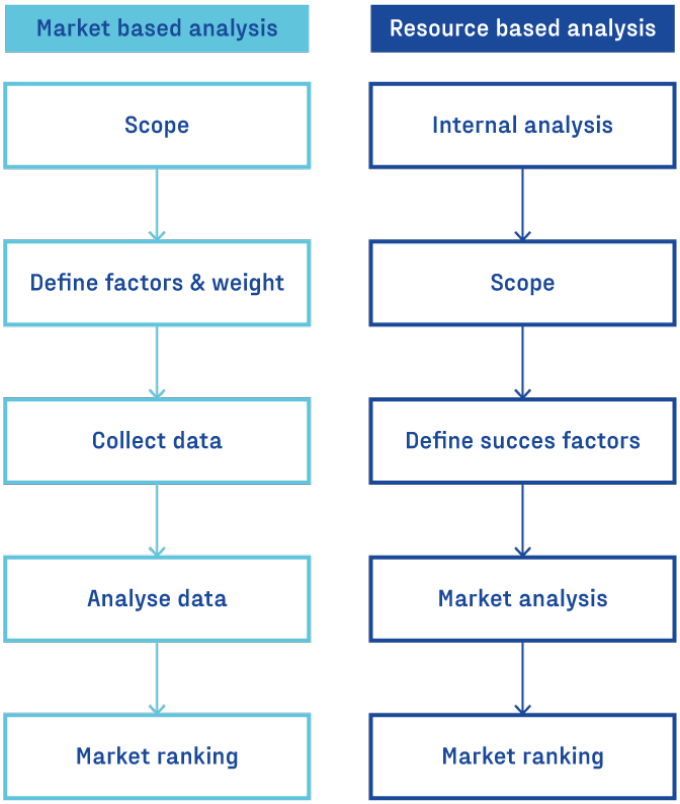


Figure 5 - the proposed processes for market-based and resource-based analysis

Entry mode

The form of operations in which companies enter international markets is known as the international market entry mode (Brouthers & Hennart, 2007).

According to Root (1994), it is "an institutional arrangement that makes possible the entry of a company's products, technology, human skills, management, or other resources into a foreign country."

Foreign market entry mode is one of the most critical decisions in international marketing since it determines how firms market their products abroad (Erramilli & Rao, 1990). And, once established, entry modes are difficult to adapt, with long-term consequences as a result (Pedersen & Welch, 2002).

Companies typically choose from two patterns when selecting international market entry modes: selection without a market entry strategy or selection that aligns with an existing market entry strategy (Koch, 2001)

Selection without a strategy is characterised by short-term goals, lack of criteria, minimal product adjustments, and no control over overseas distribution.
Selection that aligns with a strategy can include three different decision rules: the naive rule, which uses the same entry mode for all foreign markets; the pragmatic rule, which uses a workable entry mode for each target market; and the strategy rule, which uses the best fitting entry mode for each target market (Root, 1994).

In this case, the author has decided to use the pragmatic rule and develop an entry mode that can be used as a blueprint for several countries in Europe.

Types of entry modes

The literature on international market entry strategies categorises entry modes into two primary types: non-equity based and equity-based. Non-equity based modes include options such as exporting and partnering with local entities, while equity-based modes include joint ventures and wholly-owned subsidiaries (Pan & Tse, 2000; Root, 1994).

The distinction between non-equity and equity modes is based on the level of resource commitment and investment risk required in the foreign market (Pan & Tse, 2000). Equity-based modes, for instance, require actual investments to establish the operation. This increases the level of risk on one hand, and the level of control on the other hand.

When determining the appropriate entry mode, companies must consider a range of factors, including the degree of control, the level of investment risk and resource commitment, the required skills and capabilities, flexibility, ownership, the choice of location, the adaptation to local environments, and the strategic fit (Koch, 2001; Pan & Tse, 2000). Figure 6 illustrates the various types of entry modes and their respective levels of investment and risk versus ownership and control.

To effectively navigate the complexity of this decision-making process, companies can benefit from using analytical and systematic models to compare entry modes, similar to the approach used in the country selection process. The amount of knowledge about a market plays a crucial role in EMS, as it does in IMS. More knowledge about a market (and following that less uncertainty) will often lead to the

choice of entry mode which gives more ownership and control since the risk of losing investments is perceived as less eminent (Erramili, 1990).

Once a firm has established operations in the international arena it will gain more knowledge about this market. Following the same logic as with the initial market entry mode selection it will typically develop entry modes that offer greater control over operations. However, as shown in figure 6, gaining greater control often requires a higher level of resource investment, which will result in increased exposure to market and political risks (Root, 1994).

To get a better sense of the different entry modes and their respective level of ownership, control, investments and risk three modes are described here.

Exporting - This is the simplest form of international market entry, where a company sells its existing products or services to customers in another country, without establishing a physical presence there.

Partnering - This entry mode involves a company forming a partnership with a local company in the target market, such as through a joint venture, licensing agreement, or strategic alliance. This allows the company to enter the market with the help of a local partner who has existing relationships and knowledge of the market.

Greenfield venture - This entry mode involves a company building a new facility or subsidiary in the target market, from scratch. This allows the company to have full control over the operation and gain a strong presence in the market, but it also involves a significant investment and carries a high level of risk.

↘ **A companies choice for a certain entry mode is characterised by several factors like resources and knowledge about the new market. Once established, it it difficult to reduce investment and ownership. A pragmatic entry strategy allows the company to develop a workable entry mode for each market, balancing resource need and adaptation to the new market.**

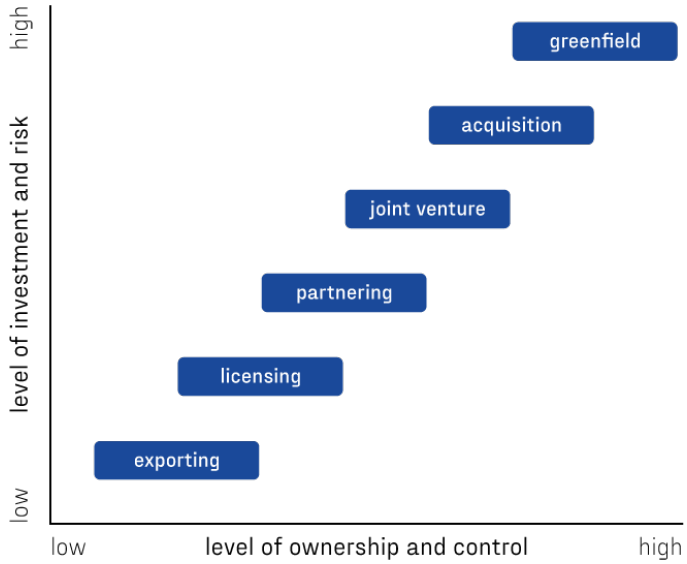


Figure 6 - different types of entry modes and their associated level of risk and control

Go to marktet strategy

The creation of an international sales strategy involves designing a market entry plan, commonly referred to as the go-to-market (GTM) strategy (McDonald & Dunbar, 2012). The development of a GTM strategy is typically divided into two phases (Srinivasan, 2010); 1) the segmentation of the market, the selection of the target market and the positioning of the product, and 2) the development of the marketing mix, better known as the four Ps - product, price, place and promotion. For this thesis the focus will be on the first part of the GTM strategy, including the segmentation, target selection and positioning.

Market segmentation

Market segmentation is the process of dividing the market (e.g. a country) into smaller subgroups. The goal of market segmentation is to create groups that differ significantly between eachother and are similar within the group, based on their characterisitics and needs (McDonald & Dunbar, 2012). According to Peltier & Schribrowsky (1997) here are two main methods of segmentation - needs-based segmentation and characteristics-based segmentation. Needs-based segmentation involves the process of dividing the market into distinct groups based on a comprehensive understanding of customer needs. This approach forms the foundation of product development and brand strategy, and is considered to be a strategic process that should precede all others.
On the other hand, characteristics-based segmentation is a process whereby customers are segmented based on their observable characteristics, attitudes or behavior. This approach is critical in the development and implementation of customer strategy and targeting, representing a more tactical process that follows needs-based segmentation. (Greengrove, 2002)

Target market selection

Target market selection refers to the process of determining which customer segments a company should prioritize in its marketing efforts (McDonald & Dunbar, 2012). Essentially, it involves analyzing the different market segments identified through market segmentation and selecting the most attractive ones to focus on. The chosen segments are typically those that offer the greatest potential for profitability and growth, based on factors such as size, growth potential, competition, and alignment with the company's resources and capabilities (Goyat, 2011). Target market selection is a critical aspect of effective marketing strategy, as it ensures that resources are allocated to the most promising opportunities, and enables companies to tailor their offerings and communication to the specific needs and preferences of their target customers (Goyat, 2011; McDonald & Dunbar, 2012; Simkin, 2008).

Positioning

Positioning refers to the process of defining the unique space or niche that a company occupies in the market, and how it differentiates itself from competitors. It involves identifying the target audience and the value proposition of the product or service, and forms the basis for key messaging that effectively communicates the company's strengths and advantages. The ultimate goal of positioning is to create a clear and compelling perception of the company in the minds of potential customers, or as how Dunford (2020) summarises it: *"Positioning defines how your product is a leader at delivering something that a well-defined set of customers cares a lot about".*

↘ **Developing a go-to-market strategy is the final phase the process of internationalisation, before actually entering the market. Effective execution of this strategies can enable companies to allocate their resources to the most promising opportunities, tailor their offerings to specific customer needs, and create a clear and compelling perception of their brand in the minds of potential customers.**
This thesis focusses on the first part of the go-to-market strategy, including the targmet market segmentation, target selection and the positioning for this target market.

Figure - the process and elements for go-to-market strategy development

Synthesis

To conclude the literature review the author borrows from multiple publications to synthesise a process for executing the international market- and entry mode selection.

Combining literature on structured versus experiential, causation versus effectuation approaches and qualitative and quantitative methods a structured approach is developed, see figure 7.

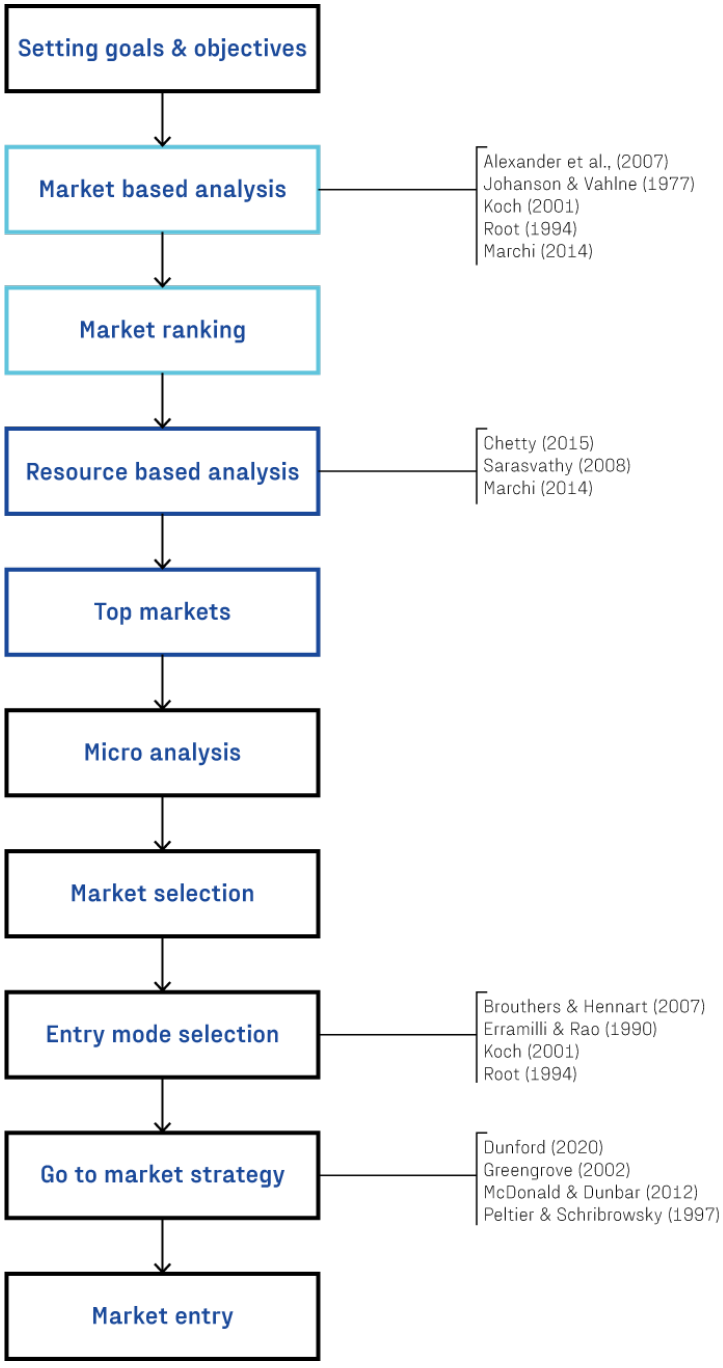


Figure 7 - the international market entry process as proposed by the author including sources

In traditional approaches to international expansion (Johanson & Vahlne, 1977; Koch, 2001; Root, 1994), the focus tends to be primarily on a structured, objective analysis of potential markets based on a set of predefined market factors (Alexander et al., 2007). This analysis provides an overview that allows potential markets to be compared and ranked. This external analysis helps ensure that no promising markets are excluded due to subjective judgments (Marchi, 2014). Therefore, the author has decided to include this market-based analysis in the international market selection process described in this paper.

The author has also decided to incorporate a resource-based analysis of markets into the market selection process. This approach follows effectuation logic (Sarasvathy, 2008) and leverages a company's resources, capabilities, and network as a starting point for analyzing and selecting markets (Chetty, 2015). Adopting this process helps ensure that a company is actually able to enter its selected market.

Combining a market-based analysis with a resource-based analysis will result in a balanced international market selection that optimizes opportunity and risk (Marchi, 2014). By comparing markets objectively based on predefined factors the author reduces the risk of excluding promising markets due to subjective judgement. Simultaneously analysing internationalisation based on Revolt's current capabilities, resources and network ensures that chosen markets do align with these capabilities and resources. This increases the probability that Revolt will be able to execute the chosen entry strategy.

Balancing objective and subjective analyses in this way helps mitigate the extremities of choosing either one of the logics. It results in a structured, rational analysis that ensures no promising markets are left out on one hand, and an analysis based on knowledge, capabilities, network and subjective judgement leading a market selection aligned with resources and capabilities on the other hand.

For the preliminary analysis 31 European countries (EU27, UK, Norway, Iceland, Switserland) will be analysed and selected based on market potential and psychic distance.

The market ranking from this analysis is then used as input for the resource based analysis. The top fifteen most promising markets are analysed on the succes factors defined through internal analysis.

From this analysis five most promising markets will emerge. These top five markets will then be analysed on micro factors: legislation, incentives to drive EV adoption, competition, ease of doing business and current and potential partners and customers. The author chooses this method because resource-based decision making processes are suitable for companies with little resources and leverage the strength of current relationships.

Since the mode of entry is heavily dependent on the target market, during the analysis of the top five countries possible entry modes for these markets will be evaluated. The suitability of these entry modes for Revolt's current resources will be included in the evaluation of the potential target markets.

Conclusion and takeaways

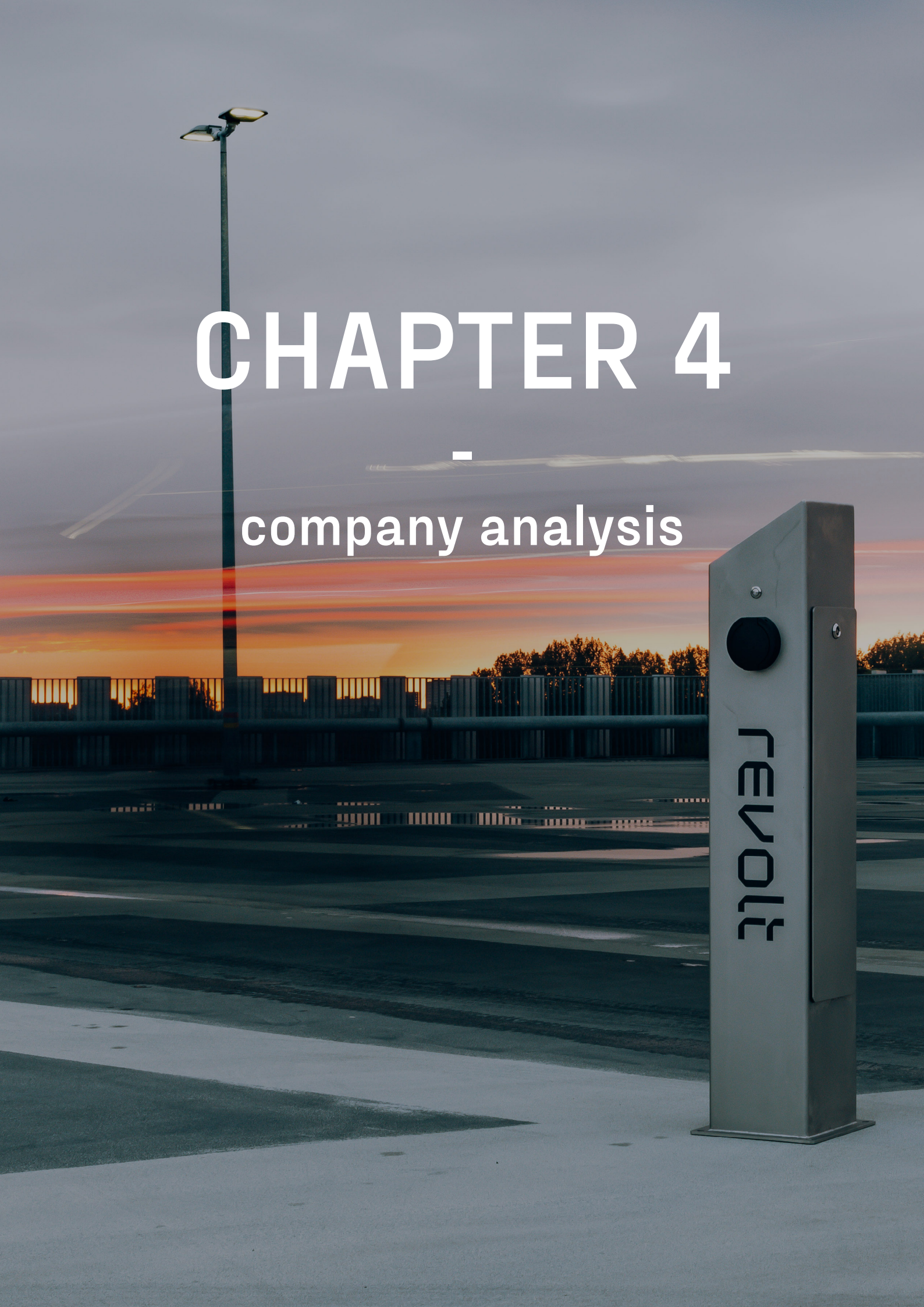
This chapter covers the literature review on the concepts of international expansion strategies and its most important components; international market selection, entry mode selection and go-to-market strategy.

First. the author determines the most widely used process of international expansion. This process entails five major steps: the choice of the target market (IMS), objectives and goals in this target market, the choice of the entry mode for this target market, the marketing plan to execute the entry mode, and a control system to monitor the performance in the new market.

To better tailor the internationalisation process to a startup with limited resources, the author has decided to include an internal analysis of the company, which will enable a resource-based analysis of the markets. This includes alignment between the companies resources, knowledge and capabilities and the market to enter, and the psychic distance between the Dutch and the new market. This will ensure the company is actually able to enter the selected market.

The chapter ends with a description of the distilled international market entry process. The following chapters will present the execution of this process.

The next chapter presents the results of the internal analysis that will serve as the basis for the resource-based market selection.



CHAPTER 4

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company analysis

4. Company analysis

This chapter sketches the current status quo of Revolt. The information is based on internal interviews and co-creation sessions, and analysis of documentation and external communication. From this analysis the strenghts and weaknesses of the company are identified. These provide ground for general recommendations for Revolt that are presented in chapter 9. Next to the strenghts and weaknesses this chapter identifies the necessary processes for delivering Revolts current service. These processes provide input for the market analysis factors and the market entry playbook. It also shorty sketches Revolts intended future. Ideally the international growth strategy aids in creating this future and thus provides a reference point for this strategy. The chapter concludes with the main takeaways from this analysis. These takeaways provide the starting point for international market selection and the creation of the market entry blueprint.

Revolt offers a product-service system for charging solutions for electric vehicles to small- and medium enterprises, and destination locations (e.g. cinemas, wellness centres, holiday parks). It was founded at the beginning of 2021. They currently have over 100 customers throughout the Netherlands.
Revolt offers charging points to businesses through a subscription model. Instead of needing to invest, customers have an all-in-one solution to charge their employees and visitors cars for a fixed monthly fee.

Origin

Revolt started out as a corporate venture within Pon (Pon, 2022). Pon had already identified the charging infrastructure for electric vehicles as a potential area for growth, combining their expertise in auto mobility and energy solutions. Together with Aimforthemoon, a corporate innovation studio (Aimforthemoon, 2022), they started this corporate innovation project.

After interviewing 46 EV drivers Revolt uncovered the need for more EV charging stations at company parking in the Netherlands, while only a small portion of these companies was able or willing to invest in the upfront costs of the stations. This led to the choice for a subscription-based model, reducing upfront costs and lowering barriers to entry.

At the start of 2021 Revolt received funding from Pon and was able to spin out, and is now an independent company. Pon is a mayor shareholder in Revolt, and the operational processes like IT, finance and legal are still managed through Pon.

Company structure and core activities

Revolt's team currently consists of 15 people. Revolt is rapidly expanding their team and client base. Their core activities are focussed on five areas:

- Sales - bringing the proposition to the market and realising commercial goals. Generating leads through outbound sales, wether direct or through partnerships.
- Operations - delivering the service. Realising technical feasibility, planning and executing installation.
- Media - developing the advertising network and selling the advertisement slots on the Hub.
- Marketing - Responsible for the on- and offline visibility, the brand and generating inbound leads through advertising, content marketing and website conversions.
- Finance - Responsible for all financial administration, budgeting and planning

Figure 8 shows an overview of the company structure. The focus in this thesis is on the sales, operations and marketing department. Since the development of the product and service portfolio is still in progress this research focusses on the current portfolio.

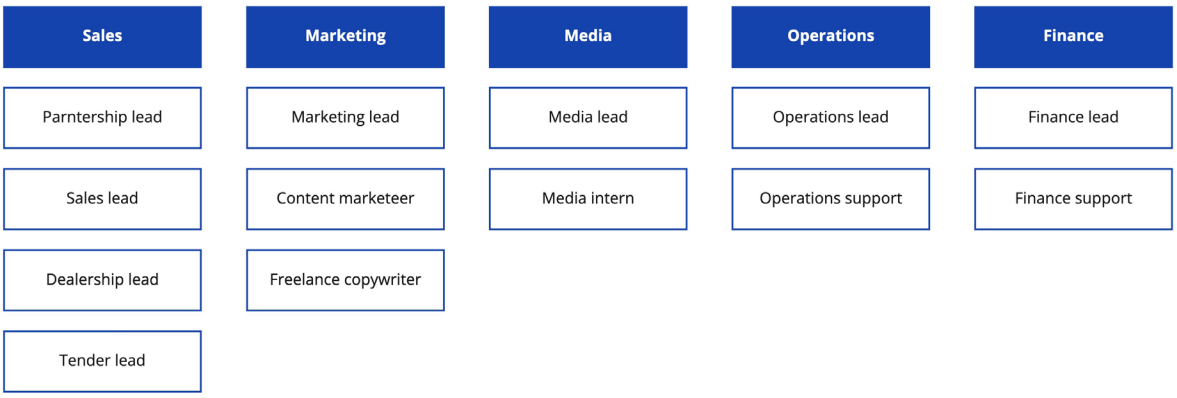


Figure 8 - The company structure per team

Value proposition

In their marketing and sales communication, Revolt summarises their value for the customers in the following three points:

1. Carefree charging solutions: charging stations-as-a-service, batteries and soon-to-be energy
2. A proactive partner on whose expertise and service you can rely
3. User-friendly and innovative products with a sleek design

Revolt offers charging points through a Business-to-business (B2B) subscription model. Revolt offers charging points through a monthly subscription fee, taking away the large investments costs - charge points cost €800 to €3000 on average (MKBBrandstof, 2022). In addition they offer their expertise in charging infrastructure, unburdening the customer. In this subscription fee the following is included:

- Technical review and planning
- The charging point(s)
- Call-out charges and labour
- Laying the base and installing the CP
- Connecting the CP to a power and data connection cable
- Testing the CP
- Instruction to user(s)
- Backoffice
- Maintenance

The costs for the installation of the required cabling, the related digging work and any adjustments and reinforcements to the fuse box are calculated on the basis of an additional charge and are not part of the installation.

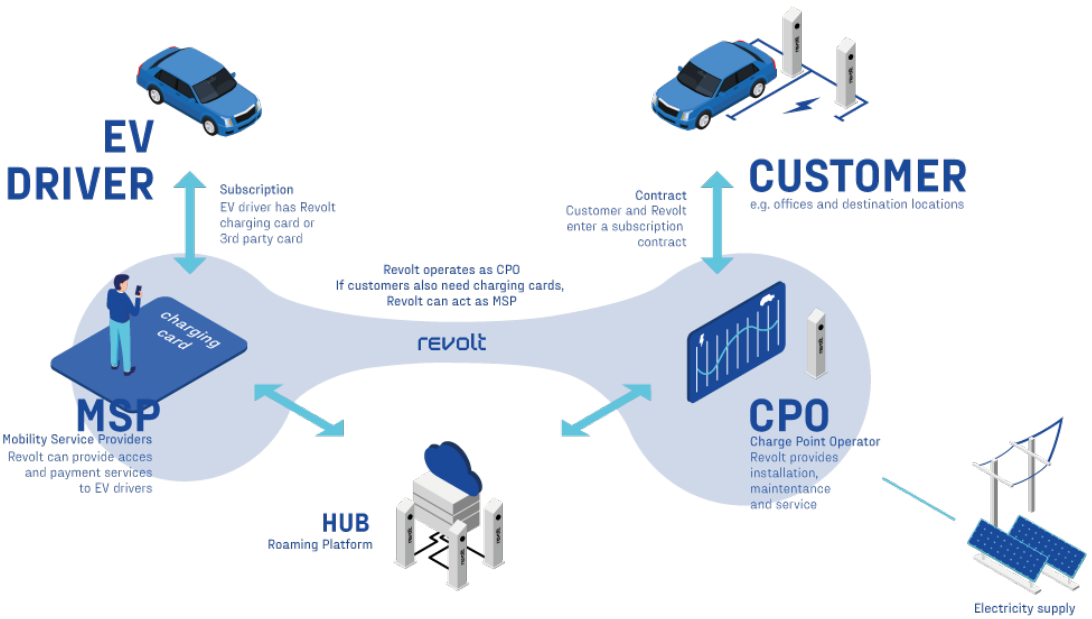


Figure 9 - Revolts position in the MSP and CPO network

Target market

Revolts main target locations are office buildings and destination sites. Their respective target clients are facility managers, business owners and commercial directors. They currently however lack a clear understanding of their actual customers and their goals, needs and pains.

Why do customers choose Revolt?

To get a better understanding of the reasons current customers have chosen Revolt over their competitors the author has conducted ten semi-structured interviews with these customers.

The three main value drivers the customers mentioned were:
- Price - the monthly fee is simply cheaper than what competitors offer
- Convenience - Revolt takes care of the technical feasibility, installation, maintenance and service.
- Easy to expand - real-time insights in the use of chargers. They can expand before it is absolutely necessary.

For the Hub, a charge point with integrated digital screens (see next section), the main value drivers are:
- The aesthetics of the Hub. It is “a real eye-catcher”
- For destination locations the Hub subscription is free of charge.

↘ **The price, convenience and aesthetics of the charging solutions are the main value drivers for customers that choose Revolt.**

Products

Hub

The Hub is the flagship product that really distinguishes Revolt from its local competition. By incorporating digital advertisement space in the charge point it is both beneficial to customers and advertisers. Customers can get this charge point at their location for €0 per month. The only costs involved are the adaptations to the fuse cabinet, cable- and groundwork.

Advertisers can use the Hub to target a specific group (EV drivers are on average people with a higher income and care more about sustainability (The Netherlands Enterprise Agency, 2021)) or location. Combining this with the fact that targeting the right customer through online advertising is becoming harder (IAB, 2020), the Hub is an interesting opportunity for advertisers to use DOOH.

The screens and ventilation within the Hub use around 3000 kWh per year. This is almost equivalent to a three-person household (Milieu Centraal, n.d.). This of course is not in line with Revolt’s mission to power sustainable mobility.

The Hub consists of a stainless steel frame with two integrated screens and two charger connections that can deliver an output between 11 and 22 kW.

One

The One is Revolts most sold product. It consists of one stainless steel column that is placed on the floor. It has one or two charger connections that can deliver an output between 11 and 22 kW.

Wallbox

The Wall-E is the charging point that can be mounted on a wall. Next to that it is similar to the One. The Wall-E is currently being redesigned as it does not fit the visual language of the other products.

Battery and mobile chargers

Next to the permanent charging points Revolt also offers a mobile battery and charging. These products are out of scope for this project since they are currently targeted towards different user groups (industry and events).

↘ **The Hub and the One are the most sold products in Revolts portfolio. The focus in this research will be on these two products.**

	One		Hub		Wallbox
location	Office	Destination	Office	Destination	Office
subscription costs	€49	€19	€19	€0	€29
subscription term	60 months				
installation & service	included				
energy reimbursement per kWh	€0.14	€0.16	€0.14	€0.19	€0.14
sales tariff per kWh	€0.25	€0.30	€0.25	€0.30	€0.25

Table 1 - Revolts charge points and associated subscription costs

product specs	One	Hub	Wallbox
costs	€3.295	€5.695	€1095
number of charging connections	2	2	1 or 2
power per connection	3.2 - 11 kW		
interaction	RFID reader		
smart charging capabilities	in development		
media	-	2x 55" screen	-

Table 2 - Revolts charge points and associated single-buy costs


revolt
P4.7


WE
CHARGE
THE
FUTURE
Visit
our
website
revolt
revolt

Business model

Revolt offers a subscription-based model. This shifts the investment needed for the charging point from the client to Revolt. This is beneficial to the customer, but puts Revolt in the position of financier. To be able to do so Revolt needs cash and new investments will be needed to grow the company further.

Revolt receives a fixed monthly fee from their clients. Next to this subscription fee, Revolt also receives a fee per charged kWh at their CPs.

The Hub contains two 55 inch screens that are connected to Revolt's media network. These screens are used for Digital out-of-home (DOOH) advertisement. Revolt sells these advertisement slots to advertisers through several platforms (direct, through agencies and through auction platforms).

The benefits of the advertisement incomes is threefold: 1) it allows Revolt to lower the subscription costs for the Hub 2) it makes the business model less dependent on outside factors like the charging behaviour of employees or the seasonality at destination locations and 3) it allows Revolt to offer the charging points in subscription terms of 60 months where competitors often offer terms up till 120 months (MKB Brandstof, 2022).

Revolt's clients may also choose to use the screens to display their own visuals. Currently they can do this for free if the advertisement slots are not sold. When the slots do sell out and clients want to display their own content they do have to pay a monthly fee for the Hub or buy the advertisement slots.

Generalising, the cost and income flow can be summarised in the following graph (see figure 10)

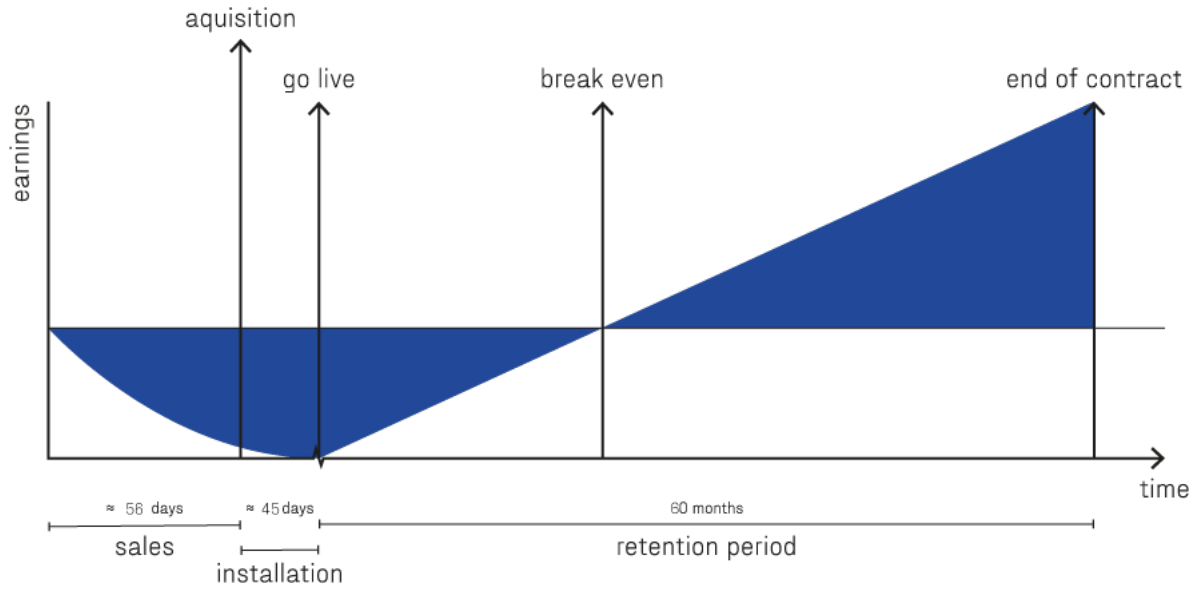


Figure 10 - Cashflow for Revolt and the associated phases in the sales cycle

The graph starts at the outreach point: the moment a potential customer comes into contact with Revolt and becomes a lead. At this point customer acquisition costs (CAC) have already been made and should be considered in the calculation of the break-even point. From this moment the efforts are focussed on turning the lead into a customer. The operations team makes sure that the installation of the CP is possible and develops an installation plan. In tandem the account lead negotiates the details of the deal with the customer.

The acquisition point is the moment the lead signs the contract and has been converted into a customer. Once the CP is installed, able to charge and the customer starts paying the subscription fee the go-live point is reached. The break even point is the moment where a net profit has been achieved.

The length and intensity of the acquisition period determines the value of the CAC; the longer and costlier, the higher the CAC. The customer lifetime value (CLV) depends on the type and amount of CPs and the utility rate of these CPs; the length of the subscription period is predetermined and thus does not have an influence.

↘ **The resilience of Revolts business model is influenced by their scale, reach and utilisation rate of their chargers. For the advertisement network to be interesting to larger advertisers they need a certain scale, after which Revolt is less dependent on the utilisation of the chargers. This is one of the main drivers behind the need for international expansion - growing the network and becoming less dependent on their current customers.**

Marketing

The marketing department is responsible for promoting the Revolts services to potential customers. Revolt is a relatively new brand. Therefore the focus of the marketing department is on building brand awareness and brand authority.

Currently Revolt is relying on paid ad campaigns on social media and search engine advertising. These do generate leads but are quite expensive and lead to a high customer aqcuisition costs.

To lower these costs Revolt has recently hired a marketing lead and a content marketeer. By generating relevant content for customers about EV charging, e.g. explainers about different types of charging solutions, Revolt aims to grow organically.

By building a following on LinkedIn, content in this channel should reach a large group of potential customers. Blogs and whitepapers about EV charging posted on the website will also make Revolt easier to find on search engines.
Both these channels do not directly cost money but will still generate leads, thus lowering the customer acquisition costs.

Another channel Revolt is developing is external brand mentions. An external brand mention is when another brand with authority (wether it is a newspaper, company or influencer) mentions Revolt on one of their channels. This also increases brand awareness, authority and organic reach.

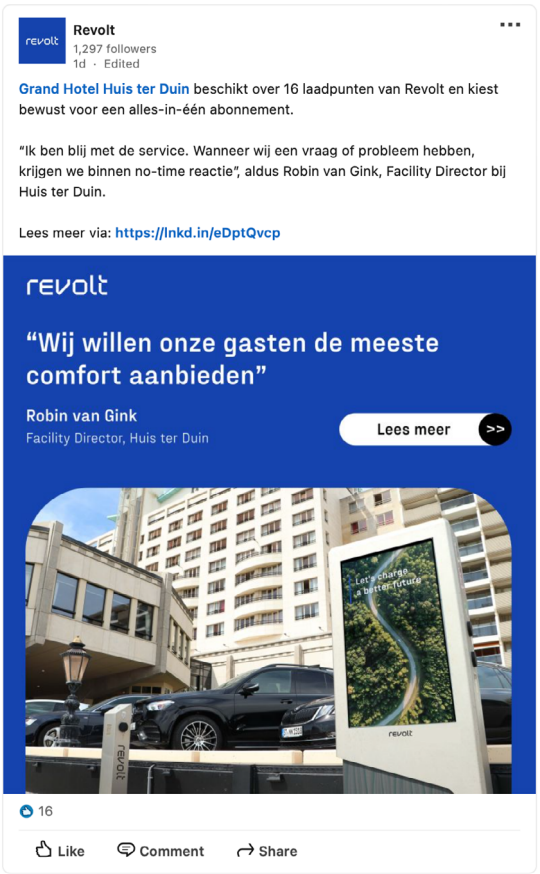


Figure 11 - LinkedIn content

Figure 12 - External brand mention

Sales process

The sales process at Revolt can be summarised in four steps:

1. Lead generation
   Outbound lead generation through social media messaging, mail or phone
   Inbound lead generation through website conversion, PR and partnerships

2. Lead qualification
   Once the sales team is in contact with the prospect, this phase is about qualifying the opportunity for Revolt. To structure this process the sales team uses the BANT-framework. They need to identify budget (how much is the prospect able and willing to spend?), authority (who are the key decision makers?), need (does the prospect have a true need for Revolt's solution) and time (how much time will the prospect need).

3. Deal shaping
   In this phase the deal is shaped. Together with operations the sales team and the client decide on how many CP are needed, how many can be installed with the current energy capacity, and what additional work needs to be done in order to install the CPs.

4. Deal closing
   Approval from client. Handover to operations

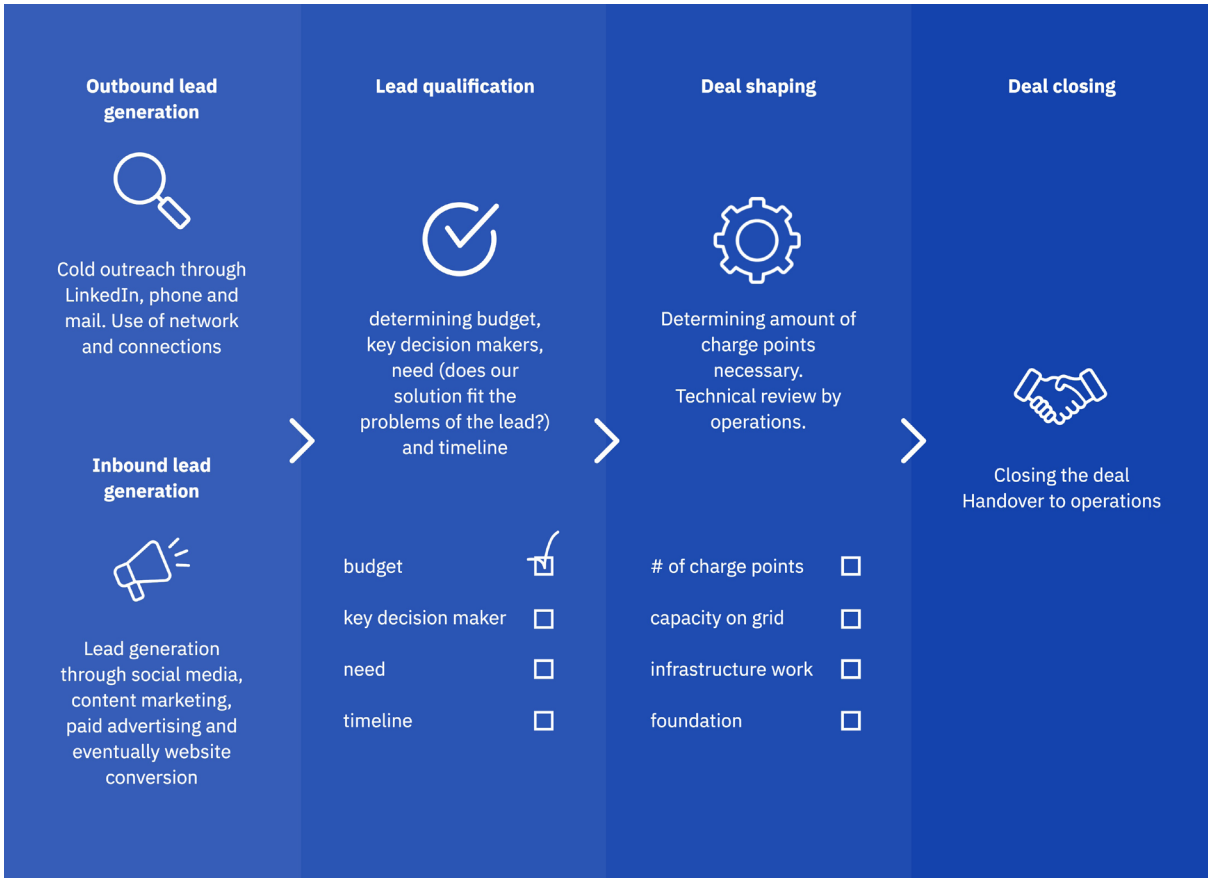


Figure 13 - Revolt's sales process summarised in four phases

Analysis of sales process

The author has analysed all entries in Revolts CRM system to get a better understanding of the current performance of the sales process. The insights help to shape the sales strategy in new markets and set attainable goals for these markets.

From this analysis the author was able to determine the conversion rate between the phases in the sales process and the average lead times for each process. The results are summarised in figure 14 and 15.

The results show an average conversion to outbound leads contacted to a closed deal of 2%. These conversion rates will be used as a benchmark for setting KPIs in the international market expansion.

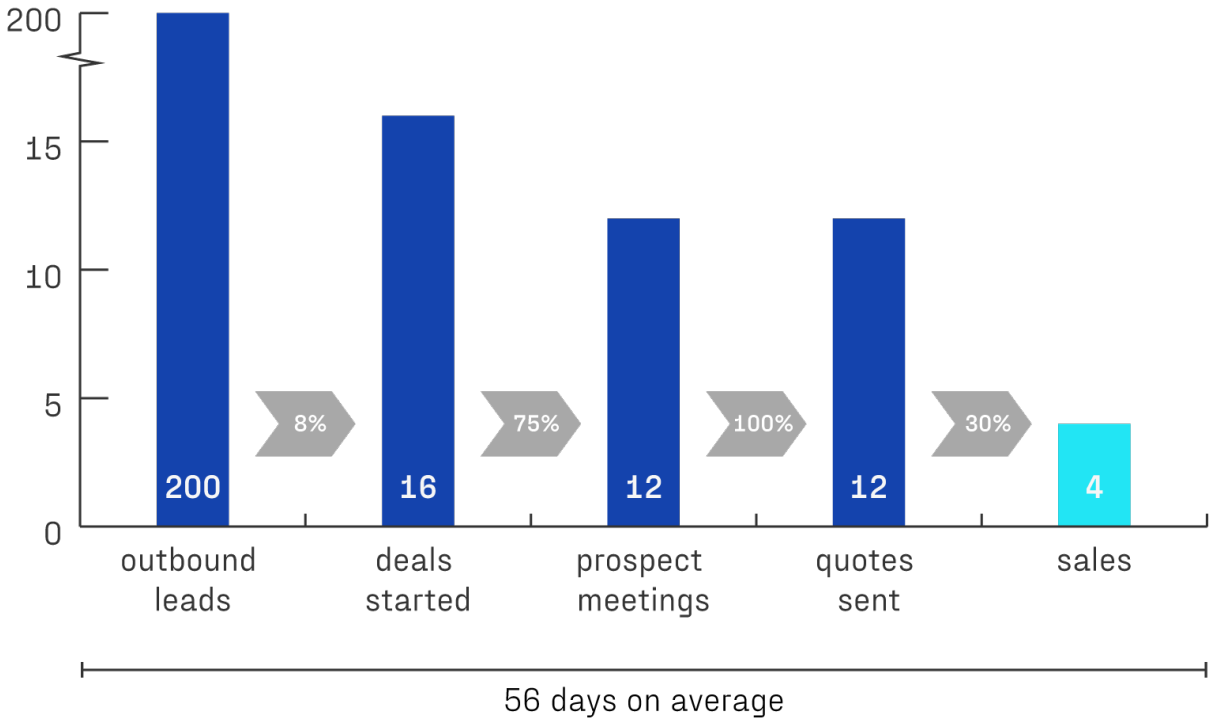


Figure 14 - The conversion between the different sales phases

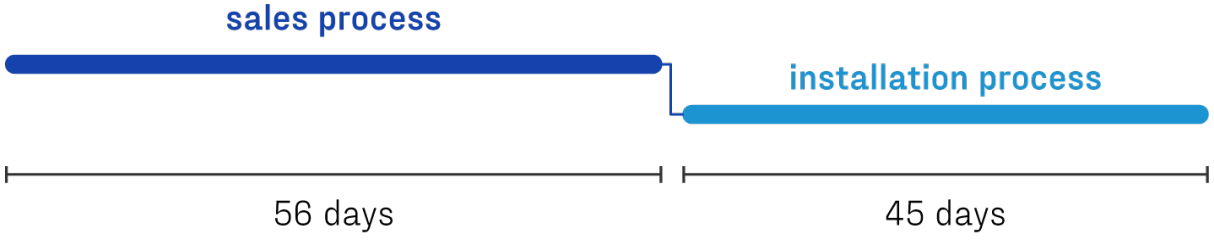


Figure 15 - Average lead times of the sales and installation process

Partnerships

Revolt is working together with partners to increase reach and sales. revolt engages in two types of partnerships - commercial and strategic.

Commercial partnerships

These partnerships include companies like car dealers and lease companies. When business customers of these partners buy or lease an EV, these partners refer Revolt if these customers are in need of charging infrastructure.
This increases Revolt's brand awareness while also generating leads. These partners receive a kickback fee for every lead they supply.

Strategic partnerships

Revolt has recently acquired their first strategic partnership. Revolt has become a partner of the KNVB, the Dutch Football Association. For a fixed fee Revolt gets access to the local football clubs who are members of the KNVB and Revolt can use the KNVB in their marketing efforts.
This partnership adds credibility to Revolt's brand and allows them to approach all Dutch football clubs to sell them their service.

Figure 16 - The Revolt One in combination with a Volkswagen cargo van (Volkswagen, 2022)

Service blueprint

Together with the operations, sales and management team the service blueprint for Revolt is developed. The service blueprint visualises the relationships between the different service components - the customer interactions, front-of-stage activities, backstage activities and supporting processes and partners. Figure 17 shows a simplified version of this service blueprint. See appendix A for a larger version.
This service blueprint is used to determine the preconditions for delivering Revolts service. These preconditions are determining factors in the market selection.

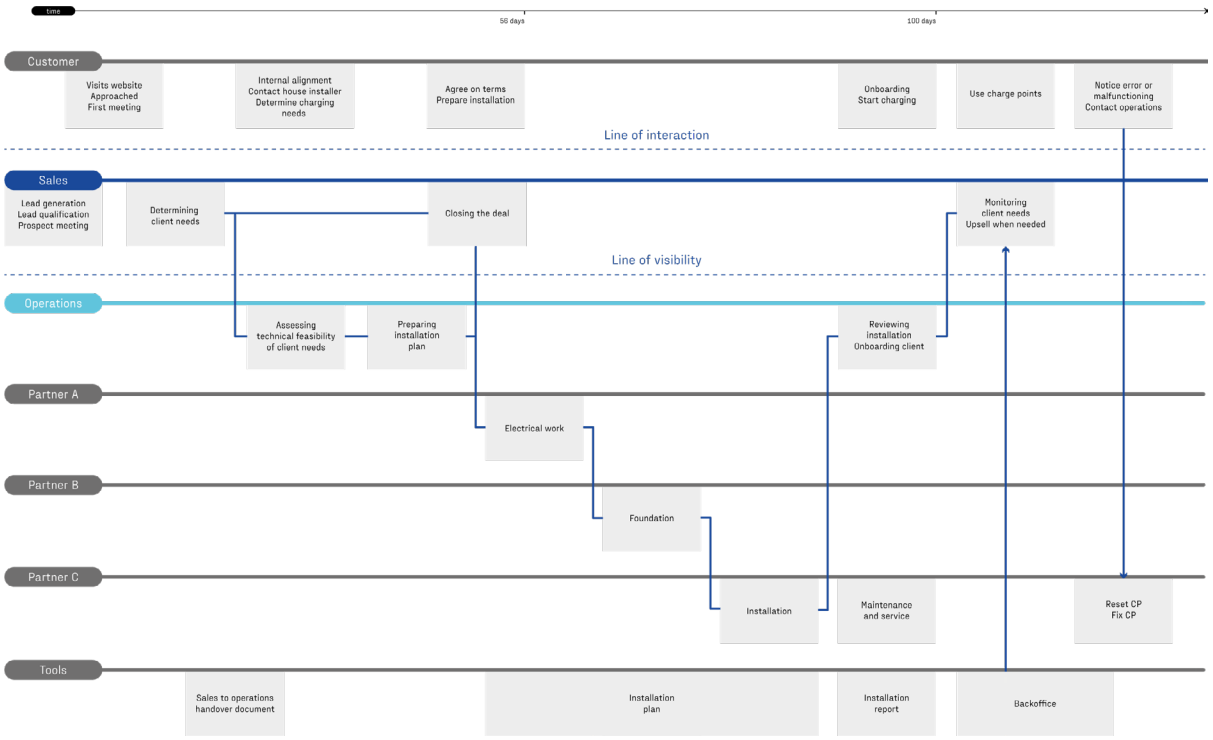


Figure 17 - Revolt's service blueprint, including customer actions

↘ **The service blueprint uncovers all the visible and invisible processes that are needed to deliver the charging-as-a-service proposition. For the infrastructure, installation, maintentance and service, Revolt is dependent on partners.**
In order to enter a new market Revolt has to set up these processes or find partners that can do this in the new market. These processes thus form building blocks for the market entry strategy.

Vision and roadmap

Every company needs a vision. It has a positive impact on venture growth, both direct and through its communication efforts (Baum et al., 1998). In this section Revolts vision is dissected.

Vision

> By 2030, Revolt's ecosystem will charge all forms of sustainable mobility, making clean energy available anytime, anywhere and to everyone

Future value propositions

To be able to reach this vision, Revolt is planning on developing three axis:

1. The Revolt ecosystem
   By continuously expanding their suite of energy services, Revolt aims to ensure their customers can use clean energy anytime, anywhere.
2. Future-forward technology
   By investing in tech innovations such as load balancing, smart charging and bi-directional charging, Revolt ensure that their customers have the best charging solution for their business in the future.
3. Self-sufficient fleets
   By generating clean energy and deploying smart energy storage, Revolt helps businesses to eventually become self-sufficient in the energy needs of all their electric vehicles.

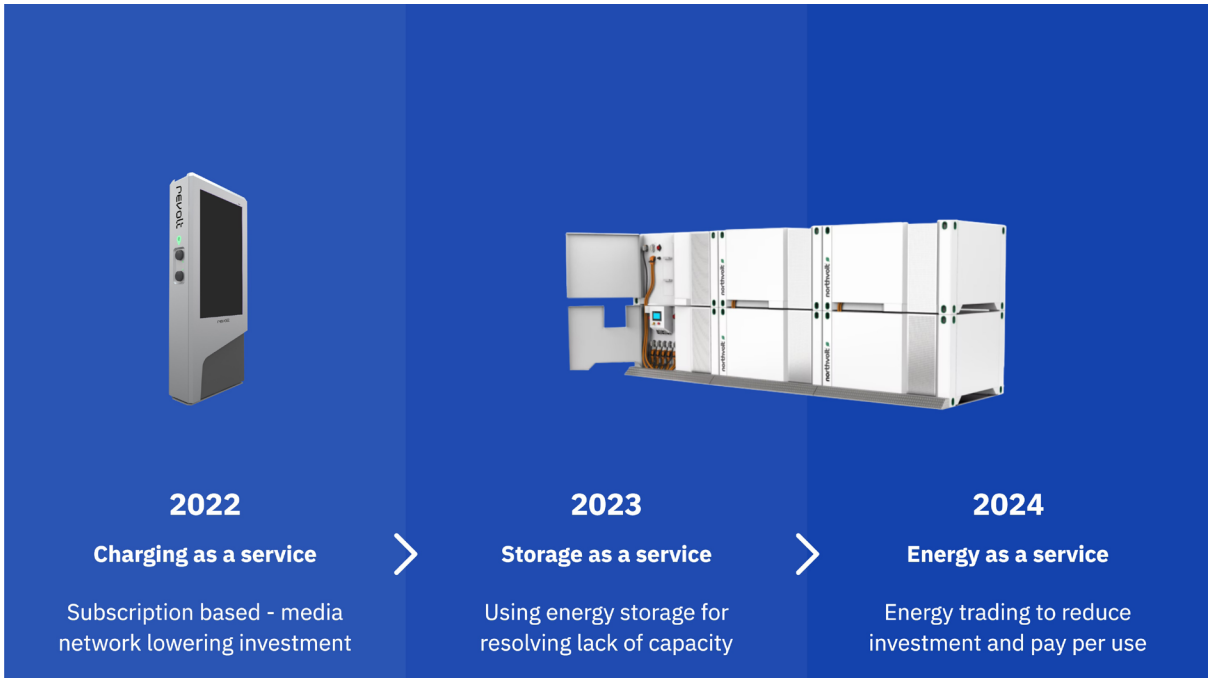


Figure 18 - Revolt's current product roadmap

Conclusions and takeaways

With its service, Revolt aims to lower the barrier for businesses to have EV charging at their locations. They are positioned as a premium supplier that takes away the hassle and investment of purchasing and installing charge points.

Currently, the SMBs and destination locations are the biggest target groups. Within the companies, the buyers are mainly owners, facility managers and commercial directors.

This thesis will focus on Revolts charge points. Even though the Hub is the most promising product for Revolt when looking at unit economics, this research will include the entire CP portfolio.

From the business model and the service blueprint the preconditions for delivering Revolts service are distilled. These preconditions will be used as input for the market analysis and will be decisive in market choice.

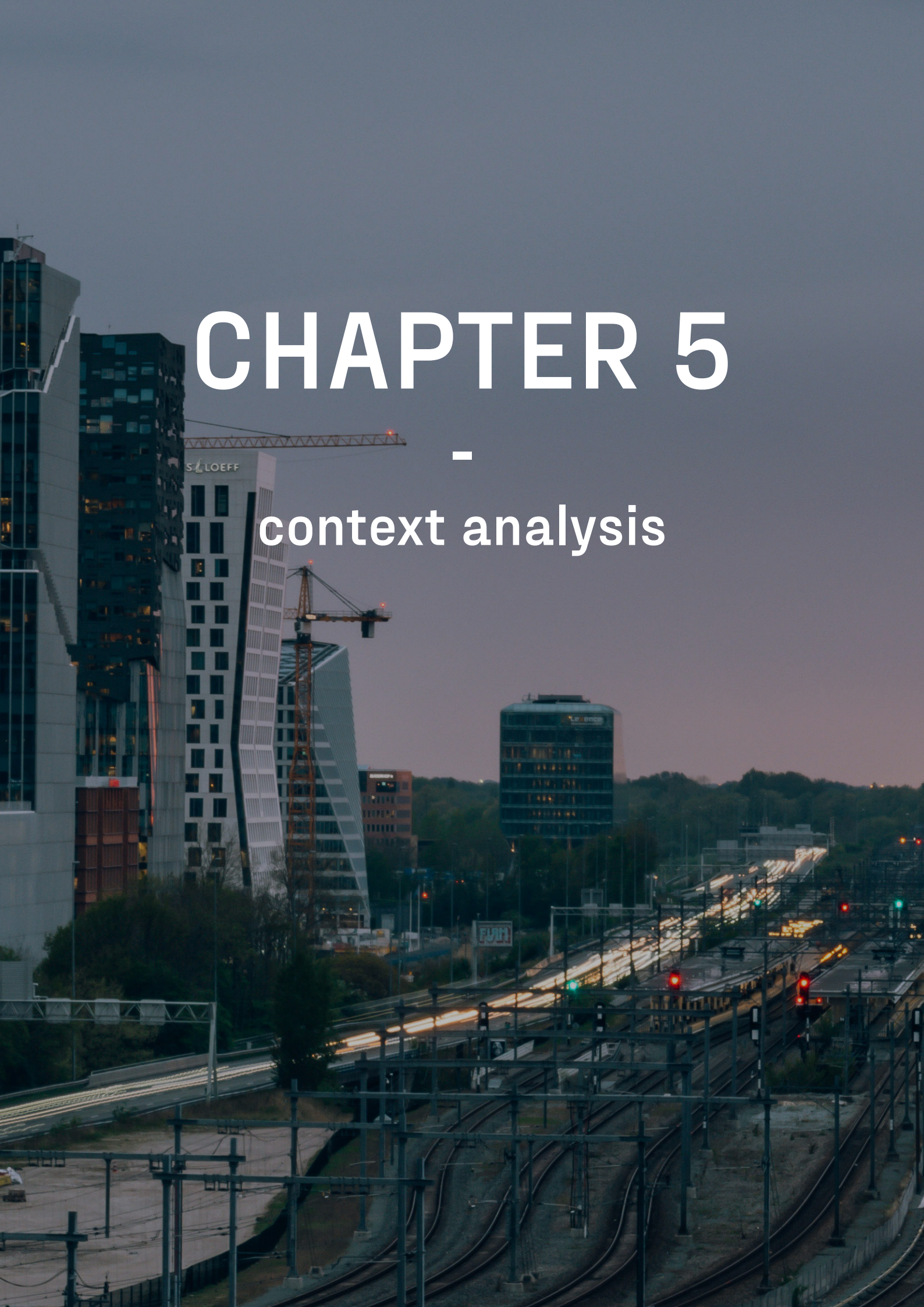
From the internal analysis the author concludes that Revolt has found product-market fit in the Netherlands. Revolt also has the capabilities, resources and knowledge to expand to international markets, although they would need to hire new employees and acquire new partners.

In figure 19 the strenghts and weaknesses of Revolt are summarised. These strengths and weaknesses are used in the resource-based market analysis

The next chapter presents the context analysis which forms the basis for the market-based analyis of potential markets.

strengths	**weaknesses**
- premium, high quality products - full service solution - distinctive proposition with Hub - no investment needed for customers - backed by Pon, largest mobility focussed holding in the Netherlands - strong strategic & commercial partnerships - focus on an underserved market - Hub is a unique product, the first in Netherlands	- low brand awareness - dependent on supplier for product development - use of CP is limited by roaming agreements backoffice - advertising network has not reached critical scale (yet) - Customer still needs to invest in electricity infrastructure - profitability of business model is dependent on charging behaviour

Figure 19 - Strenghts and weaknesses of Revolt



CHAPTER 5

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context analysis

5. Context analysis

In order to reach European climate goals like Fit for 55 and climate neutrality in 2030 (European Union, 2021) the transport sector needs to undergo a transformation to cut down at least 90% of greenhouse gas emissions. This however should not be at the expense of available, affordable solutions to citizens.
This chapter outlines the dynamics and developments of this transformation, focussed on EV and its charging infrastructure, through seven context drivers. These developments are translated into opportunities and threats for Revolt. Moreover, it discusses the implications for the international growth strategy.

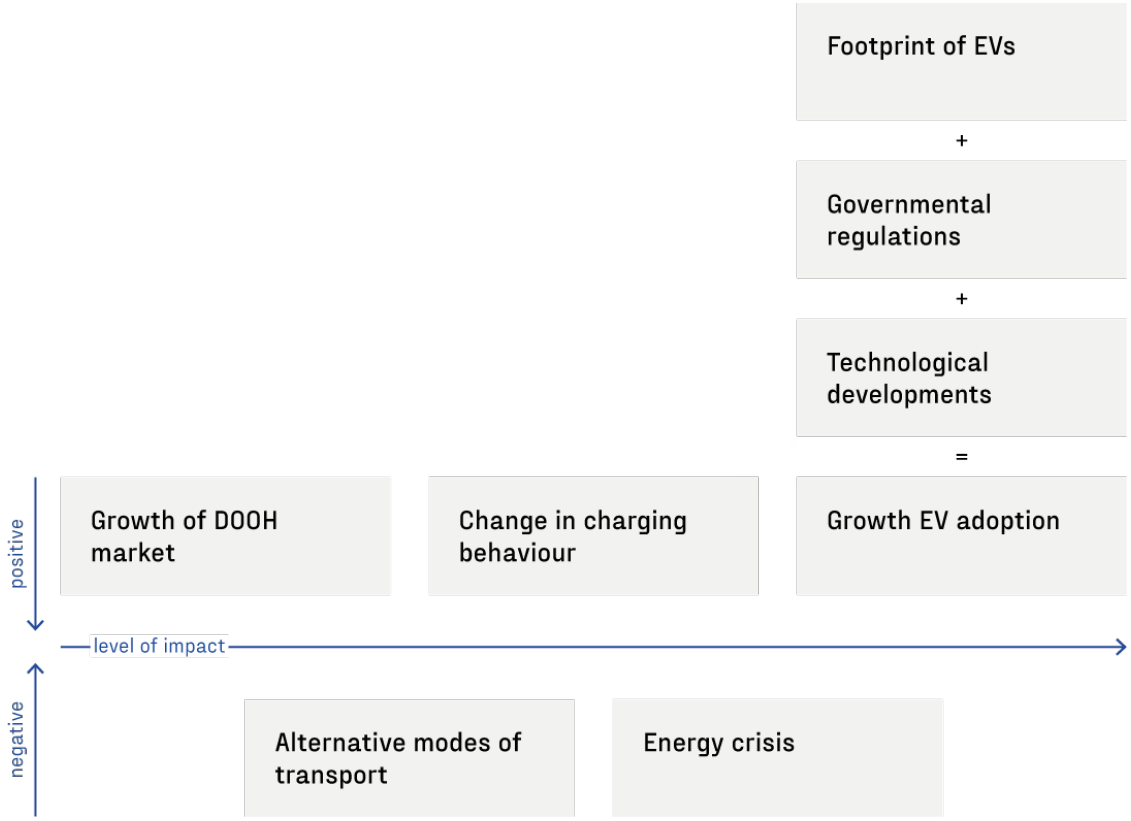

Figure 20 - The seven context factors and their nature and level of impact

Footprint of EVs

Before diving into the positive and negative context drivers in the EV market it is necessary to understand benefits and downsides of widespread EV adoption since all drivers are dependent on these factors.

Critique on EVs often points towards the environmental impact of the battery, it's manufacturing and the end of life. But even though the initial carbon footprint of the car manufacturing is higher than for ICE cars (IEA, 2022b), it takes a typical EV about one year to achieve carbon parity with an ICE vehicle, considering the current electricity mix. This means that an EV has a lower footprint than an ICE car if it is used for longer than a year.

If the grid is powered by for example carbon-free wind energy this parity is reached within six months (source). Thus, over the average lifetime of an EV car it is has a smaller CO2 equivalent footprint compared to an ICE car (see figure 21)

What about hybrid electric vehicles?

Recent ICCT study (2020) found that the fuel consumption and tailpipe carbon dioxide (CO2) emissions of PHEV company cars are about three to four times higher than the official figures. Therefore PHEVs are not a suitable alternative to ICE cars when considering sustainability.
We can thus conclude that only battery and hydrogen fuel cell electric vehicles have the potential to achieve greenhouse gas emission reductions needed to meet the Paris Agreement goals. (ICCT, 2020).

↘ **+ EVs are necessary in the transition to sustainable mobility. Only fully BEV will make enough impact, which means a more extensive charging infrastructure is needed**
- Impact is larger when batteries are charged with 100% green energy. But how can Revolt ensure that the energy in their network is 100% green?

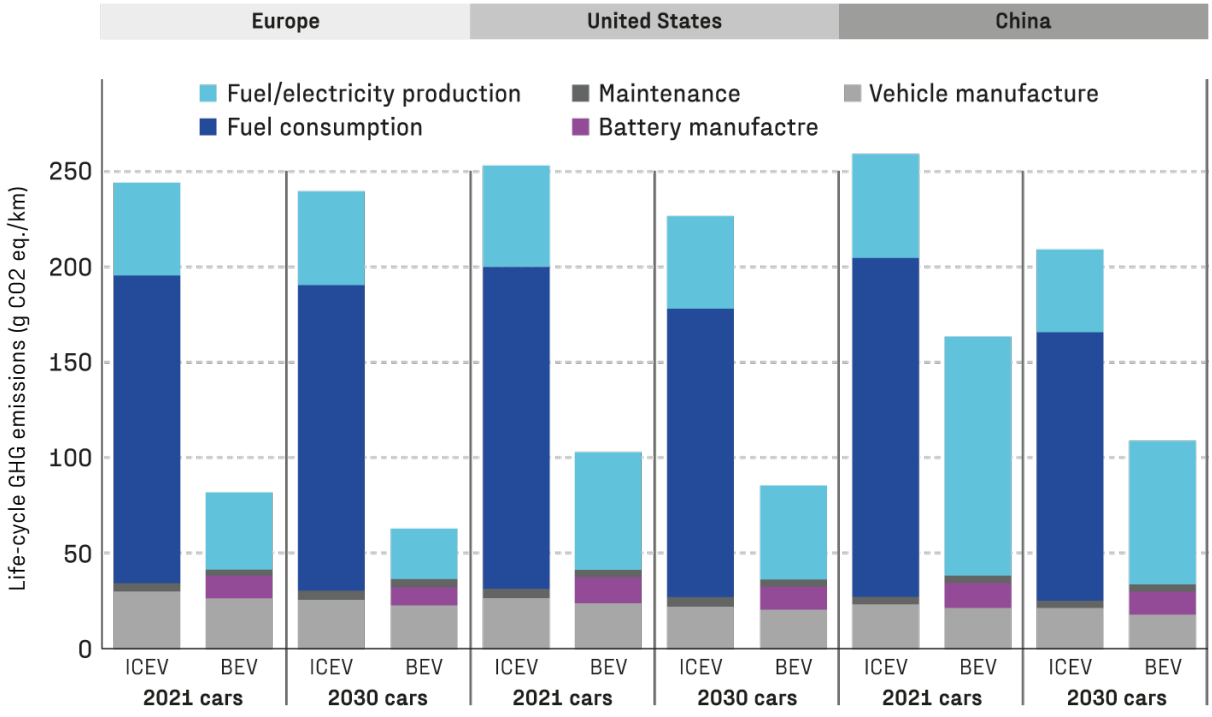

Figure 21 - Life-cycle GHG emissions of medium-size ICE and BEVs, adapted from ICCT (2020)

Governmental incentives and regulations

To reach the EU climate goals of 55% cut in CO2 emissions by 2030, from 2035 the sale of petrol and diesel cars will be banned in the EU (Reuters, 2022). As we have seen in the previous section, EVs prove to be a more sustainable alternative to ICE cars.

To ensure a fast and smooth transition from a fully ICE to mostly EV car fleet, authorities in Europe, from the EU to local municipalities, are introducing regulations to push the adoption of EV.

Sustained policy support is making it more affordable to buy, lease and drive an EV. **Until now this has proven to be the most important driver for EV adoption**; high subsidies lead to high adoption, a lack of subsidies lead to lower or even declining adoption (IEA, 2022).

In addition to positive reinforcements as subsidies and tax reductions, governments are also establishing regulations that make driving an ICE car less attractive. An example is introducing environmental zones in urban areas, where ICE cars are prohibited (*Green-Zones.eu*, n.d.).

Furthermore, several directives aim to prepare the current infrastructure for widespread charging needs.

The EU's Energy Performance of Buildings directive (2020) mandates the installation of pre-cabling and smart charging points in new and renovated buildings, as well as existing buildings with a certain number of parking spots. Specifically, non-residential buildings with more than five parking spots must have at least one smart charging point, and existing buildings with more than 20 parking spots must have one smart charging point per 10 parking spots and pre-cabling for all parking spots by 2027.

However, small and medium-sized enterprises (SMEs) are exempt from these provisions. These SMEs make up 99.8% of all enterprises in Europe (source), thus severely weakening the impact of this directive. Among these SMEs are most supermarkets and shopping malls, locations that prove to be attractive locations for EV charging (source).

Additionally, the directive includes the "right to plug," which aims to make it easier for individuals to charge their electric vehicles by eliminating the need for approval from multiple parties.

To ensure interoperability, many initiatives are pushing additional standards to become mandatory. One of these is the OCPP (Open Charge Point Protocol). This is a global open communication protocol between charge stations and the back-end systems of charge station operators. This protocol handles the exchange of charging data and can trade information between EVs and the electricity grid. The use of this protocol ensures seamless integration, flexibility in the choice for software and hardware, and easy scaling.

↘ **+ Governmental incentives drive EV adoption through reducing cost of ownership, restricting sales and use of ICE cars and preparing new buildings for charging infrastructure**

- Subsidies and grants might impose a threat to Revolt's subscription-based model. The buildings in the largest target market are exempt from preparing infrastructure.

Technological developments

The technological development that has most influence on EV adoption is increase in battery capacity. A bigger battery capacity leads a larger range (assuming the weight and efficiency of the EV are constant), thus reducing the need for frequent recharging. This eases range anxiety, which is currently still one of the biggest barriers for EV adoption (ANWB, 2020).

Another major driver is the development of smart charging. Smart charging refers to the use of advanced algorithms and communication technologies to optimise the charging of EVs in order to minimise the impact on the electrical grid, optimise the use of sustainable energy sources and reduce costs for EV owners. For a comprehensive explanation of smart charging technologies, see Appendix B.

These technological developments make it more attractive to drive an EV and will therefore further increase the adoption of EVs. In addition smart charging eases stress on the grid from the concurrency in charging behaviour and thus reduces an important limit to the widespread installation of the charging infrastructure.

↘ **+ Bigger batteries reduce range anxiety and thereby drive EV adoption. Smart charging technologies allow charging at locations where grid capacity is limited.**

- Bigger batteries lead to less frequent charging and thus a less dense charging network is needed.

Growth of EV adoption

Governmental regulations and technological developments both make it more attractive to buy, lease and drive electric vehicles. This has a huge impact on the adoption of EVs, and that shows.

The EV market is booming. According to the ICCT (2020), global sales of EVs has doubled in 2021 compared to 2020, to a new record of 6.6 million, even when car sales in total are declining (ICCT, 2023). This equals to 10% of global car sales, which is four times the market share in 2019. This trend keeps rising in 2022, with up to 75% more EVs sold compared to the same period in 2020.

The electrification of Europe's passenger car fleet is largely driven by companies. Of the EV sales in 2020, 54% were made by companies (EAFO, 2022).

The EV fleet is expected to grow 34% a year until at least 2030. Even though this growth is impressive, it is still short of the 60% share needed by 2030 to align with a trajectory that would reach net zero CO2 emissions by 2050 (EAFO, 2022).

Furthermore, this growth needs to be supported by the widespread implementation of charging infrastructure (ICCT, 2020) and the growth of a currently fragile EV supply chain (IEA, 2021).

Both governmental regulations & incentives, and technological developments speed up the adoption of electric vehicles. The EV market is rapidly growing and expected to grow until at least 2030. This growing market leads to a growing need for charging infrastructure, which proves the relevance of Revolt and provides a huge opportunity for business growth.

But while the EV market is booming, the charging infrastructure growth is lagging behind. Currently there are not enough chargers to support the growing EV market (ICCT, 2020).

Even though more vehicles can be supplied per charger, the amount of public infrastructure announced will not be enough to power the projected EV market. (ICCT, 2020). The current growth of EV sales can only be sustained when the vast majority of population has access to both public and private chargers. For the European Union, this would mean an increase of more than 1900% in public chargers in 2030, compared to 2019.

> **"The suitable number of chargers per EV will depend on local specificities such as housing stock, typical travel distances, population density and reliance on home charging. Charging at home and workplace are likely to supply much of the demand overall, but the number of public chargers still needs to expand ninefold and reach over 15 million units in 2030 to meet the levels envisaged in the APS and provide consumers with adequate and convenient coverage."**
>
> **- IEA, 2022**

↘ **+ The EV market is growing and will grow until at least 2030. There is a growing gap between charging needs and installed charging infrastructure.**

- Huge growth is attracting new competitors. Market is becoming more crowded and competitive. This can lead to price-based competition

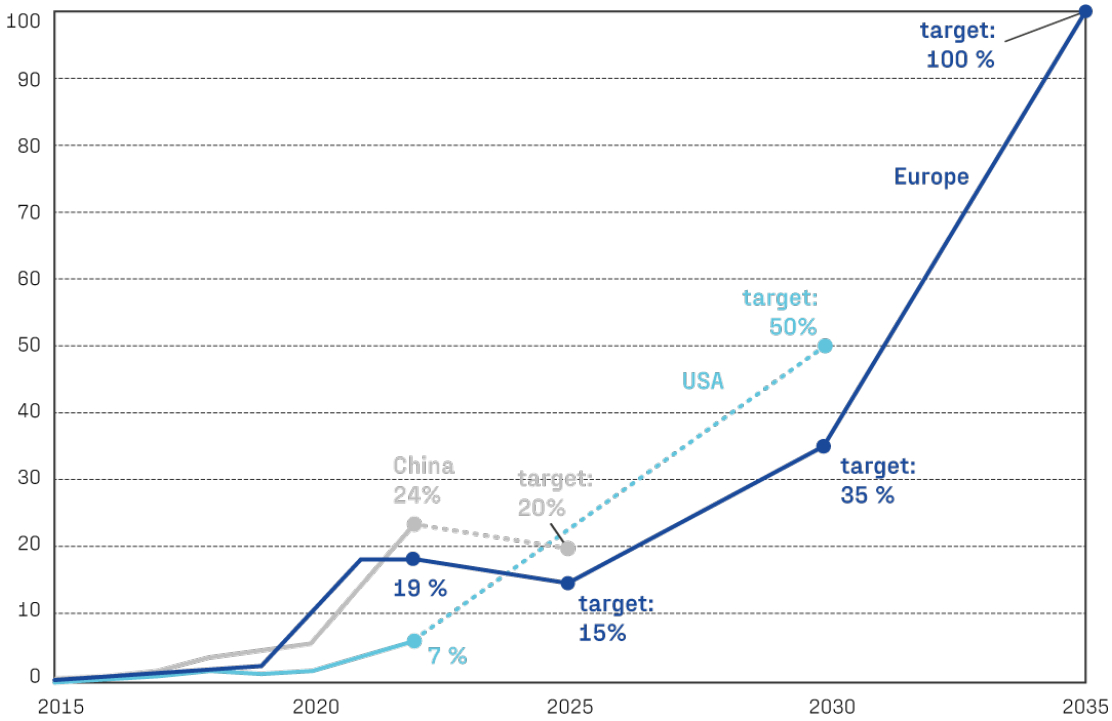

Figure 22 - Market share of the sale of battery electric vehicles (adapted from ICCT, 2020)

Charging behaviour

When diving into the lack of charging infrastructure in general it is important to take a closer look at the developments of charging behaviour since this behaviour will dictate the lay-out of the charging infrastructure.

When looking at the EV charging infrastructure a distinction is often made between public fast charging, public slow charging and private charging.

Public fast chargers use 50 to 250 kW and thus charge EVs in a relatively short amount of time. They can therefore often be found along highways and at locations where drivers do not spend more than one hour, like supermarkets. Companies deploying these fast chargers are Fastned, Ionity and Shell recharge.

Public slow chargers use up to 22 kW and are most often found in residential areas, provided by energy companies and municipalities. They are meant for people who drive an EV but do not have the possibility to install a CP at their own house.

The last category is private chargers. These are found at private property, like driveways and office parking spots. These are often AC chargers since they are cheaper and do not require expensive grid connections.
When looking at the charging behaviour of European EV drivers, see figure 23, we see that the majority of charging is done at home. Work comes second, after which respectively semi-fast, fast, slow and ultra fast public charging.

Grid capacity

Majority of grids in EU are nearing capacity (Brinkel et al., 2022). Currently, peak grid load occurs in the morning and in the early evening. Distribution system operators (DSOs) are looking into methods to shift part of the load to off-peak hours, reducing stress on the grid.

To achieve this, according to Powell et al. (2022), policymakers should consider utility rates that encourage day charging and incentivise investment in charging infrastructure to shift drivers from home to work for charging. If, for example, people charge their car at work instead of when they come home this will spread the local energy use throughout the day. This will eliminate increasing the peak load in the evening, easing pressure on the grid.

As well as easing pressure on the grid, Powell et al. (2022) found that daytime charging would also reduce greenhouse gas emissions. Many regions are investing heavily in solar energy. I.e. un Europe the EU's new solar energy strategy envisions solar panels on all residential roofs throughout Europe as of 2029, according to the REPowerEU plan (European Commission, 2022). Using this solar energy to charge EVs will reduce the well-to-wheel emissions to zero (source).

Impact

After analysing several industry reports (Transport & environment, 2020; Roland Berger, 2020; McKinsey, 2021) the author concludes the following:

- Private AC charging will remain the dominant mode of charging. They will account for 90% of installed charging points, but only 60% of the charging capacity due to lower power levels.
- Charging at work will almost double over the next 10 years
- Public DC charging will increase, with ultra fast (+ 150kW) charging overtaking normal fast charging (50 - 150 kW). It will however not take over public AC charging, nor charging at home or at work.
- EV sales currently keeps outpacing EV infrastructure outroll.
- Efforts should be made to even further stimulate charging at work to ease pressure on the grid, cut costs and reduce greenhouse gas emissions.

↘ **+ Expected and necessary charging behaviour asks for more at work charging. Smart technologies can reduce grid stress, costs for consumers and greenhouse gas emissions.**

- Grid congestion can slow the rollout of charging infrastructure. Smart charging technologies can negatively impact the utilisation rate of charge points

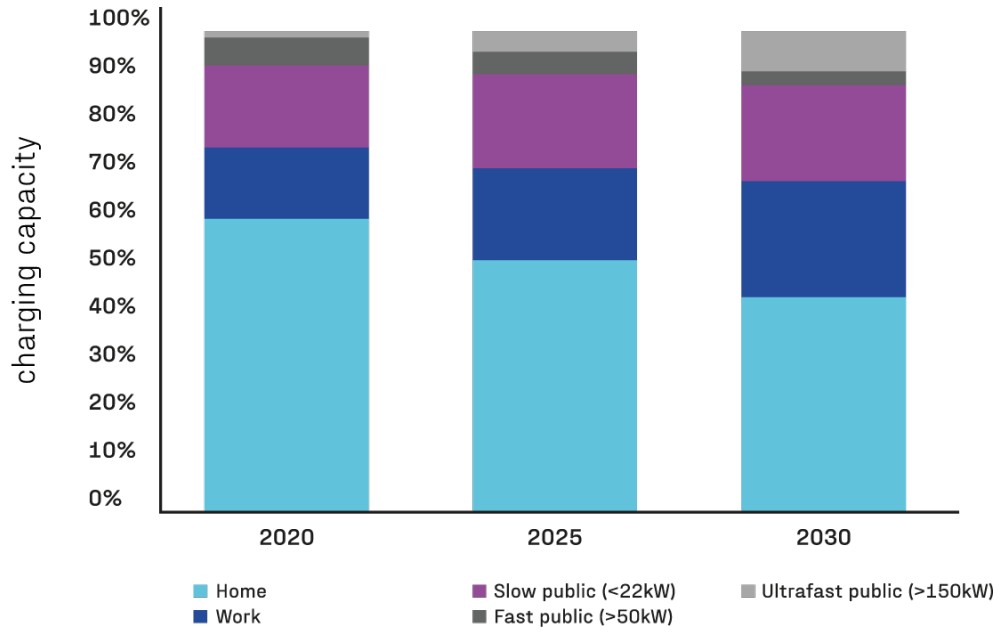

Figure 23 - Charging capacity per charging mode in 2020, 2025 and 2030

Alternative modes of transport

Even though the car still plays an important role in the way people get around in Europe, this is expected to change in the coming years. The World Economic Forum is expecting car use in Europe to decrease with 12% until 2025 (Buchholz, 2021). There are several factors driving this reduction in car use. The three most important drivers are set out:

15 minute cities

The concept of 15-minute cities refers to urban areas in which residents have access to all necessary amenities and services within a 15-minute walk or bike ride. This approach to urban planning is intended to reduce dependence on cars and promote sustainable modes of transportation, such as walking, cycling, and public transportation.

In Europe, the implementation of 15-minute cities is expected to have a significant impact on car use. Studies have shown that increasing walkability and access to public transportation can reduce car usage by as much as 30% (source). Additionally, the proximity of amenities and services to residential areas can also reduce the need for long commutes and suburban sprawl, which can further decrease car usage.

Hydrogen electric cars

Hydrogen fuel cell technology offers several benefits over traditional battery-electric vehicles (BEVs), such as longer driving ranges, faster refueling times, and the ability to be refueled at existing gas stations (Turoń, 2020). This will negatively impact the use of BEV.

Micromobility

Micromobility refers to small, lightweight vehicles such as electric bikes and scooters that are used for short distance transportation. These vehicles are becoming increasingly popular in as a way to commute to work, as they offer a convenient, efficient and cost-effective alternative to cars and public transportation (McKinsey, 2022). Micromobility also has the potential to reduce traffic congestion, pollution and the carbon footprint of urban areas. Many cities in Europe are encouraging the use of micromobility vehicles by implementing dedicated lanes, shared bike and scooter schemes and other supportive measures.

↘ **The increase of 15-minute cities, hydrogen electric cars and micromobility all reduce the need for battery electric vehicles. This reduces the market size Revolt (and its competition) can service.**

Digital out of home advertising

With the introduction of the Hub, Revolt is now also managing and advertisement network. It is therefore important to research the developments in digital out of home advertising.

Due to new consumer privacy rules and the restriction on tracking through cookies by Apple, targeted marketing is becoming increasingly difficult. This is boosting the use (digital) out of home marketing. It has seen a 30.5% increase in 2021 compared to 2019, of which 48% is digital out of home advertising. (IAB, 2022)

But why is DOOH interesting for advertisers? Next to having a broad reach and exposure, it is still possible to target specific customers through selection of locations. (IAB, 2022)
It is a growing market, but a network of digital displays only becomes interesting for advertisers when the reach of this network is big enough. This means a certain amount of, preferably well visited locations. (Internal interview, 2022)

↘ **+ The growth of DOOH spend provides an opportunity for the rollout of Revolt's advertising network**

- A maturing DOOH market means that the expectations for reach and impressions grow as well.

Impact of energy crisis

The ongoing Russian war in Ukraine has a direct impact on the EV market. Russia is a big player in the Energy market, its in the top three of crude oil producers, and the second-largest producer of natural gas (EU, 2022).

Due to the sanctions on Russia, energy prices, but above all, gas prices in Europe have soared. This has the result that SMEs are now accelerating their transition from gas to electricity powered. An example is a wellness centre transforming all gas-heated saunas to electric heated saunas. This has a significant impact on their energy, reducing the capacity for charging points with 90%.

In addition, the Covid-19 pandemic and Russia's war in Ukraine have disrupted global supply chains, and the car industry has been heavily impacted. In the near future, EV delivery delays to customers may reduce sales growth in some markets. (IEA, 2022)

↘ **- Customers are prioritising other electrification projects. High energy prices limit EV adoption and charging behaviour**

Footprint of EVs

+ BEVs have a smaller footprint than ICEVs, making them a suitable alternative in the transition to more sustainable mobility

- Difficult to promise and deliver 100% green energy through charge points

Governmental incentives

+ Incentives lower costs of aquisition and use, making EVs more attractive

- Subsidies and grants for charging infrastructure conflict with Revolts subscription model

Tecnological developments

+ Increased range lowers barrier to driving EV

+ Smart charging makes charging cheaper and more sustainable

- Larger batteries require a less dense charging network

Charging behaviour

+ Increase in EV charging requires a shift to day-time charging. e.g. at offices during working times

- Grid congestion slows down the rollout of charging infrastructure

revolt

Uptake of EV adoption

+ EV adoption is growing and with that the charger gap. Increasing market potential in all of Europe.

- High growth attracts competition, which can lead to price wars

Alternative modes of transport

+ Alternative electric modes of transport require charging as well

- Alternative modes of transport decrease the need for electric vehicles

Digital out-of-home advertising

+ Growth of DOOH market provides an opportunity for the rollout of Revolts advertising network

- Maturing market increases the expectations about reach and impressions, making the market more competitive

Impact of energy crisis

- Prioritisation of electrification of core business activities

Conclusion and takeaways

This chapter describes the eight most important context drivers in the EV charging market.

There are three main context factors that all drive the increase in EV adoption. The lifetime CO_2-equivalent footprint of electric vehicles is significantly lower than the footprint of ICE vehicles. Because of this, EVs play a vital role in governmental ambitions in the transition to zero-emmision mobility in order to reduce their climate impact in order to reach goals set in the Paris Agreement (European Commission, 2022b).

Because EVs play a vital role in EU-wide and national plans, governments are trying to boost the EV adoption. They do this by establishing legislation subsidies that makes it more attractive to buy, lease and use an EV compared to an ICE vehicle. Financial incentives have proven to be the most impactful factor driving EV adoption. In addition, governments and municipalities are increasingly banning ICE vehicles from city centers.

The third factor driving EV adoption are technological advancements, like the increase in battery capacity. By increasing the capacity EVs have a larger range. This takes away range anxiety, the second biggest barrier preventing people from switching to EVs.

These three factors drive increase of EV adoption. An increase in EVs asks for a widespread increase of installed charge points. This is where Revolt's right to exist is established.

A context driver that is relevant specifically to Revolt is the change in charging behaviour. Both projected and necessary charging behaviour require more charging at work. This is in line with Revolt's value proposition and will continue to increase the demand for it's service.

The two context drivers that are inhibiting Revolt's growth are the increase in alternative modes of transport and the 2022 energy crisis.
The increase in use of alternative modes of transport will reduce the need for EVs and thus for Revolt's proposition.
The 2022 energy crisis has shifted some companies' priorities from electrifying fleets to electrifying key operations, limiting budget and grid connection capacity for chargers.

Figure 24 summarises the results of the internal and external analysis. The strenghts and weaknesses are used as input for the resource-based analysis. The opportunities and threats will serve as input for the market factor selection used in the market-based analysis.

The next chapter describes the process of the international market selection. Here the results of the internal and external analysis are used to analyse, rank and select the most promising market for Revolt to enter in the coming two years.

strengths	weaknesses
- Premium product - Full service solution - No investment needed for customers - Backed by Pon, largest mobility focussed holding in the Netherlands - Strong strategic & commercial partnerships - Focus on an underserved market - Hub is a unique product, the first in Netherlands	- Dependent on supplier for product development - Use of CP is limited by roaming agreements backoffice - Advertising network has not reached critical scale (yet) - Customer still needs to invest in electricity infrastructure
opportunities	**threats**
- EV adoption is necessary to reach climate goals - There is a lack of sufficient charging infrastructure in Europe - To efficiently use electricity grid capacity, charging at work needs to grow. - Government incentives for purchase of EV and charging infrastructure - Smart charging provides opportunity to sustainable and financial impact - DOOH market is a growing market with the ability to target customers due to the specific locations and profile of EV drivers.	- Growth of other modes of transport. Cars are still an inefficient way of transporting people. - The EV battery supply chain is a limiting factor in the adoption of EVs. - Energy crisis will slow the outroll of EV charging infrastructure - EU regulations will require expensive product adaptations - Technological advancements outpacing Revolts product development - Highly competitive market - Price is a value driver in the market

Figure 24 - Strengths, weaknesses, opportunities and threats relevant to Revolt

CHAPTER 6

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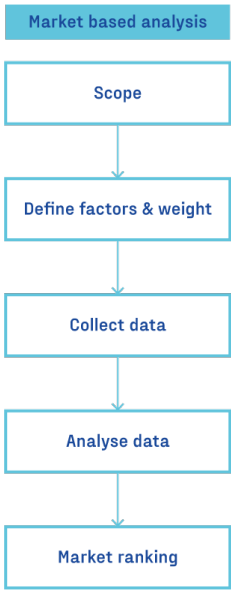
international market selection

6. International market selection

Revolt is steadily gaining market share in the Dutch market. But in order to reach the desired scale and network effects Revolt needs to expand beyond the Dutch market. Here the need to internationalise arises. This chapter describes the process of the international market selection. After outlining the process the author describes the goals and objectives of internationalisation and the current efforts concerning internationalisation. We will then explain the selection criteria and how these form a market analysis model that serves as an input for IMS. Finally the limitations and implications of using this model are discussed.

Process

As discussed in the literature review (see chapter 3) the initial market selection consists of a market analysis based on several factors. But first it is important to clearly define the goals and objectives of the internationalisation efforts. These will scope the selection and give focus in both selecting the markets and the factors to score the markets on (Magnani et al., 2018).



After defining the goals and objectives together with the co-founders, the author put together a list of factors to score the initial markets on, based on literature and input from the Revolt team.

This list is then filtered based on the availability, accessibility and reliability of data. After gathering data on the remaining factors, the weights of these factors were established together with the Revolt team. Using the weighted model the author then develops a ranking of attractiveness of all markets. With this model markets can be selected on different criteria and threshold values.

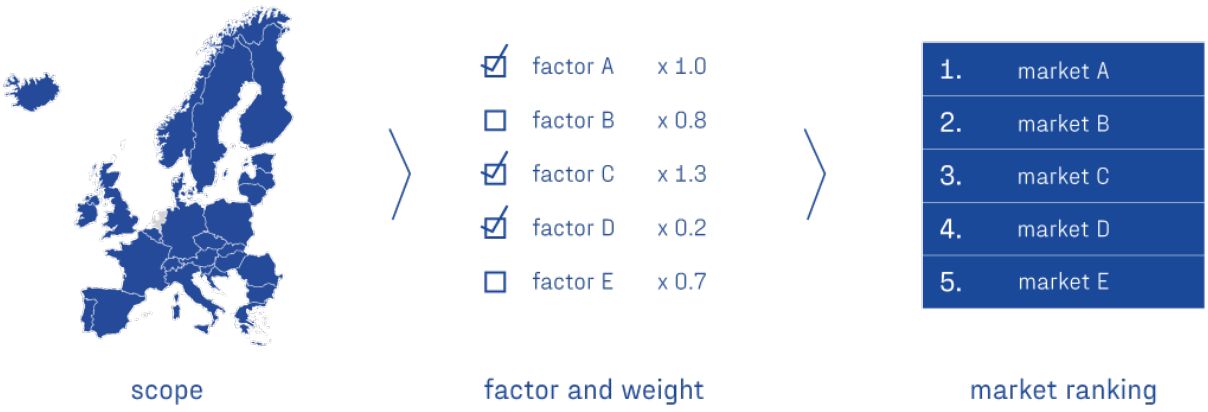


Figure 25 - A simplified overview of the market-based analysis with its results

Goals and objectives

In a future visioning workshop the author has defined the goals for internationalisation together with Revolt's founders.

For Revolt to be able to achieve their vision they need to reach economy of scale and network effects. According to Revolt (2022) the Dutch market will quickly become too saturated and therefore too small for this to happen. This is why Revolt needs to internationalise, and their goal can be summarised as:

↘ **Expand the pool of potential customers to increase 1) sales, 2) the amount of charge points installed and 3) the amount of kWh charged through Revolts network, i.e. to grow.**

The cofounders do have a differing views on how this should happen:

- "Using existing partners and clients to slowly expand internationally. Clients like Danone have offices in for example Belgium. We expand to Belgium; they speak the same language and the market is a bit lagging the Netherlands in terms of EV adoption." - Founder A

- "Using a framework to make substantiated choices. Making sure we do not miss out on promising markets." - Founder B

These different views have parallels with the differences between causal and effectuation decision modes. As discussed in the literature review a combination of these two approaches can deliver a great result and takes into account both the goals and the resources of a startup company. Therefore the author does not see these contrasting views as a problem for internationalisation but as good input for constantly evaluating the internationalisation strategy.

Current internationalisation efforts

Revolt currently does not have the resources to thoroughly go through the process of IMS and EMS. Nevertheless, it does happen that international growth happens organically. An example of this is the following:

Revolt has recently sold an amount of 'Ones' to an Italian startup. This startup has discovered a growing need for charging solutions in certain areas in northern Italy. This company has a network of installation partners but they currently lack the EV charging hardware and therefore reached out to Revolt. This company does not provide the charging points in a subscription-based model, nor do they provide the full service proposition. They currently only focus on selling and installing the charge points.

The sale of products to an installation partner is not in line with the current business model of Revolt. But, it is a way to quickly generate some cash and it is an effort to test the acceptance of their product and gain knowledge of the Italian market.
If and when successful and the need for a subscription-based or full-service model arises, Revolt and the startup will further research intensifying their partnership in order to deliver the full service model. Eventually the Hub and the DOOH network can be introduced.

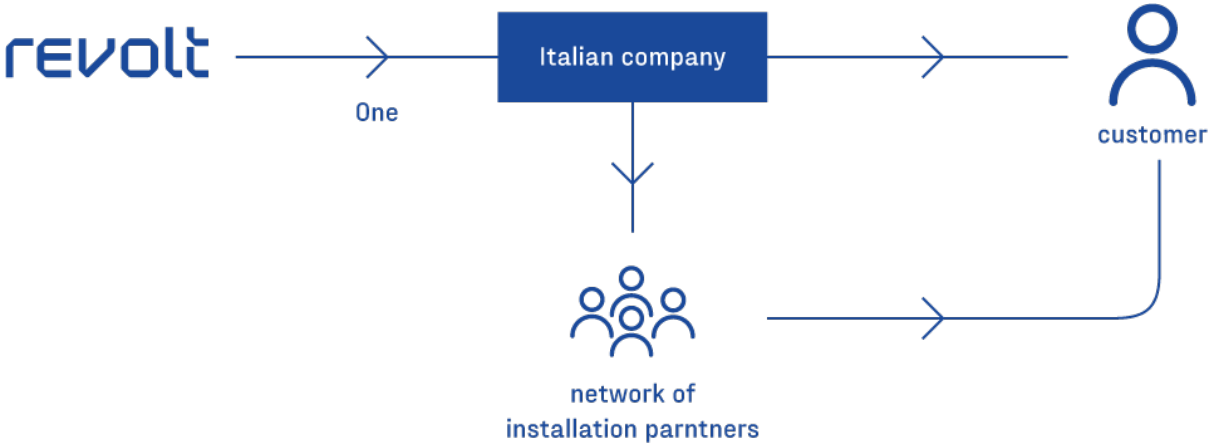


Figure 26 - the structure of the deal with the first Italian customer

Scope

The scope of the market analysis is based on geographical distance and trade agreements; in consultation with Revolt the author has limited the scope of the internationalisation research to 31 countries: the EU-27, Iceland, Norway, Switzerland and the United Kingdom.
These countries all allow free trade of goods and Dutch residents do not need a visa to travel to and from these countries (EU, 2022)

Selection criteria

The initial factors are derived from three sources; factors from Revolts business model and the service blueprint are product/service focussed, factors from literature are focussed on general market analysis. These factors were then filtered based on the availability, accessibility and reliability of data. The full list of factors and its sources can be found in Appendix C.

Some factors, like level of competition and availability of installation partners (derived from the service blueprint and business model) were not included in this analysis because quantifying these factors for all 31 markets is not achievable in the scope of this research. They are however essential to market selection and will be therefore included in the secondary analysis.

The factors used for the analysis all have different units and scales. For example, the GDP per capita of a country is often expressed in thousands of Euros, while the share of electric vehicle sales is expressed in percentages. If we assume these factors are given the same weight, the GDP per capita factor will always dominate the share of electric vehicle sales factor, since their values differ with a factor of 1000. To prevent this problem the data has to be standardised, e.g. given the same scale. One simple yet effective way of doing this is rescaling using min-max normalisation. This performs a linear transformation on the original data, giving all factors the same scale of 0 to 1. This preserves the original relationships between the data points. The formula for min-max normalisation is the following:

$$x_{scaled} = \frac{x - x_{min}}{x_{max} - x_{min}}$$

Where x_{scaled} is the new value, x is the current value, x_{min} and x_{max} are the minimum and maximum value of the data range. The result is systematically shown in figure 27.

Figure 27 - The effect of normalisation on data points with different scales

Market factors	
GDP per capita	Indicates spending power of consumers. There is a correlation between GDP per capita and EV adoption
Employment rate	Percentage of people employed against the total population eligible to work
Technology investments	Amount of € invested in technology developments
Total addressable market	Amount of EVs in expected 2030
Serviceable addressable market	Amount of company EVs in 2030
Car penetration	Amount of ICE cars
Ease of doing business	Summary of several processes for setting up a business in a country
PRODUCT SERVICE FACTORS	
EV share of sales	Amount of EVs sold in 2021 compared to the total amount of cars sold in 2021
EV market growth	Increase in amount of EVs
Charge points per EV	Amount of charge points per EVs
Commute by car	Percentage of people that commute to work by car
Public transport use	Share of public transport use in total inland passenger transport
Energy grid stability	Percentage of uptime of energy grid
Available energy	Capacity of energy network currently not used
DOOH spending	Amount of € spent on DOOH in 2021
PSYCHIC DISTANCE	
Stock of foreign investment	Amount of money invested from home to new market
Ease of trade	Index number on ease of trade
Geographic proximity	Distance between markets
Cultural similarities	Measurement of cultural similarities using Hofstede model
Language similarities	Overlap in language use
Secondary information availability	Amount of entries in library about new market
Immigration numbers	Amount of people migrating between markets
Level of development	Human development index
Level of corruption	Corruption index

Table 3 - Market factors used for macro analysis

Macro-level market analysis

Based on the selected factors and associated weights (defined by the team of Revolt), the selected markets are analysed.

The result of analysing the markets is a ranking, from most promising to least promising (for results, see appendix D). After discussing the results with te Revolt team, from this ranking and the associated market factors three groups of interesting target markets emerge. These groups are classified by current maturity of the EV charging market, the predicted market growth and the ease of entry. To further validate this segmentation the author has read several industry reports about the state of the EV market and its charging infrastructure for each market. In additon the author interviewed at least one EV market expert from each segment.
The other fifteen countries are not promising enough based on this market analysis and therefore disregarded for the remainder of this research.

Mature markets

The Nordics (Iceland, Norway, Sweden, Finland and Denmark) rank highest in the market analysis. The main factors influencing this high rank are GDP per capita and EV share of sales.
Competition in these markets is high - most customers are already acquainted with EVs and its charging infrastructure. Urban areas have sufficient charging points to provide the current EV fleet (ICCT, 2021). EV charging infrastructure expansion is now mainly focussed on rural areas, especially along highways. At these locations smart charging is necessary. As discovered in the expert interview (Interview with business development manager Nordics @Northvolt, 2022) there might be opportunities in charging solutions for residential areas.
To summarise, the mature markets are similar to the Netherlands in terms of EV adoption, charging infrastructure outroll and predicted growth. The competition is high and new business is focussed on smart charging.

"The charging infrastructure in these countries is quite sufficient, at least in urban areas. (...) The focus now is on charging between cities, along highways. The distances between urban areas in these countries is quite big, so the need for charging when on the road is there. The main barrier is the availability of enough electricity in these rural areas"

- Business development manager Nordics, Northvolt.

Easy to enter markets

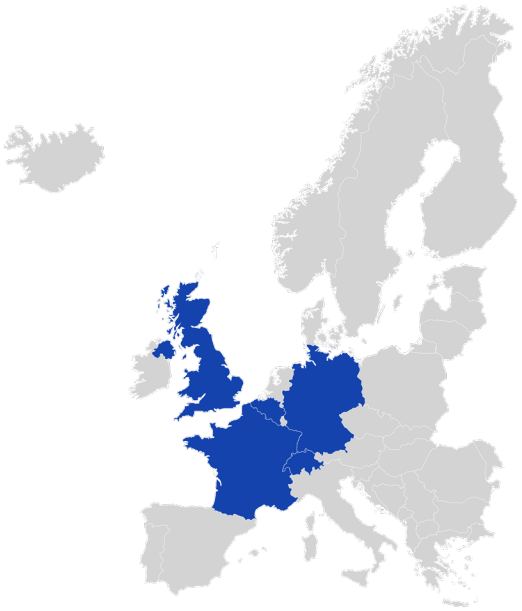
Ranked from 5 up to and including 15 are five countries that rank high on the ease of entry and low on psychic distance - Belgium, Germany, France, the UK and Switzerland. These markets are similar in EV adoption and predicted growth; they are lagging behind the Netherlands by one to three years and are predicted to follow the same, albeit slightly slower, growth as the Netherlands.

Advantage of these markets is that Revolt currently already has relations in these markets, whether through personal connections or current customers. Next to that the barriers to entry are low. The ease of doing business is high in these countries (World Bank, 2020). This index descirbes factors as the time and amount of processes for registering a legal entitity, the ease of getting electricity and the ease of enforcing contracts.
Next to the ease of doing business being favourable the cultural differences are small, although they should not be neglected as this can lead to misalignment and underperformance (O'Grady and Lane, 1996). For example, even though Belgium and the Netherlands are neighbouring countries, the ways of doing business are quite different. Where Dutch people are direct and want to get to business quickly, in Belgium it is imperative to build trust, and decision processes are formal and slow (RVO, 2023).

To summarise, the easy to enter markets have favourable business practices, small(er) cultural differences and are geographically close. Revolt already has connections in this market, enabling easier market exploration.

"People want to drive electric, but if the closest charging station is a few kilometers from your house, you are simply not going to. (...) The city of Brussels has ambitious plans for installing sufficient public charge points, but the electricity network simply cannot handle it. That is the first problem that needs to be tackled."

- Sales manager Belgium, Streetplug

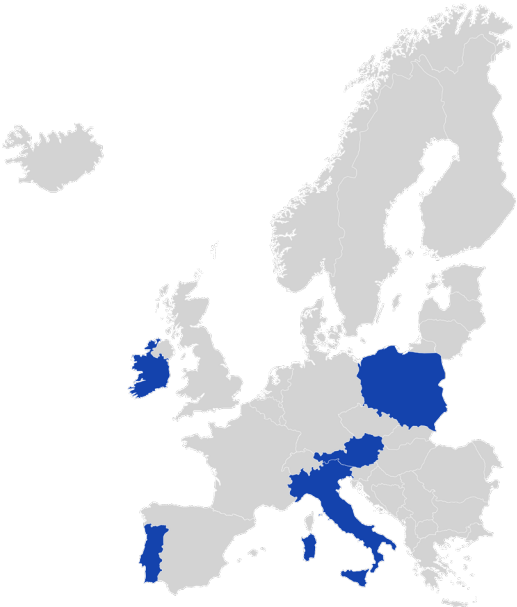


High growth market

The third segment is chararcterised by a lagging EV adoption but a high predicted growth - Austria, Ireland, Italy, Poland and Portugal. These countries are currenlty two to four years behind the Netherlands regarding EV adoption and the charging infrastructure.
Due to the high amount of cars (Eurostat, 2021a), the high rate of car commutes (Eurostat, 2021b) and the high expected EV market growth (Statista, 2022), the potential for these countries is considerable.

Timing is this more essential in this segment than it will be in other markets (Li et al., 2014). Revolt has a first-mover advantage, which can both be a good and bad thing (Suarez and Lanzolla, 2005). There is little competition and thus an opportunity to quickly gain market share - if Revolt is able to scale quickly enough. However when entering a market too early Revolt might face resistance from customers and competitors might benefit from second-mover advantage: the customer base is already sensitised and sales and marketing strategies are already proven to be succesful and therefore easy to copy (Kopel & Löffler, 2008; Dunford, 2020). History suggests that firms that establish new market segments frequently end up losing out in the long run to companies that were able to gain a strong position in the market after the difficult work of developing the segment had already been completed (Dunford, 2021)

To summarise, high growth markets hold a considerable potential. However, the immaturity of the market might lead to resistance from customers and poses a risk of immitation by competitors.



"The Italian market is lagging behind in EV driving. (...) The problem until now has been the lack of government incentives. (...) It is starting to gain interest, but you now have to wait more than a year for a public charge point to be installed. That is hindering the EV adoption. But the potential is huge"

- Start-up advisor in Italy, 5+ years experience

Mature markets	Easy to enter market	High growth market
		
• Saturating market • High competition • Large distances need fast charging	• Growth not extremely promising • More saturated than high growth markets • Competition already offering subscription model	• Energy grid instabilities and congestion • EV adoption lagging behind due to lack of incentives
• EV driving widely adopted • Opportunities in residential and office charging • First generation chargers in need of replacement	• Low market entry barriers • Well known market, established network • Easiest to experiment and validate	• Higher barrier to entry • Little competition • Large addressable market • First-mover advantage

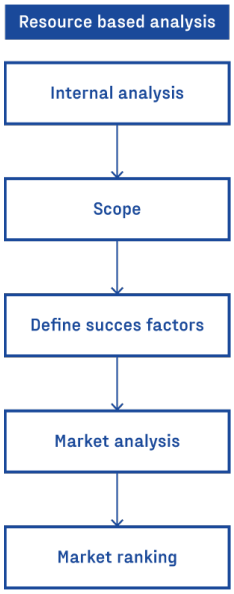
Figure 28 - Summary of the market segmentation

Resource-based market selection

Using the top-down market analysis model the author has analysed, ranked and segmented 30 potential new markets. From this analysis, fifteen markets emerge as most promising. Fifteen markets are however still too many to thorougly research and analyse on a micro scale within the scope of this project.
To further narrow down this selection the author facilitated a creative session with four team members (two co-founders, partnership lead, business development trainee). The goal of this session was to select the five most promising markets from the perspective of Revolts capabilities. In addition the author and the team uncovered assumptions that need to be validated before the internationalisation efforts can begin.

The most important conclusions regarding the selection of the five most promising markets were:

- High growth markets have the biggest potential to quickly gain scale. It is however necessary to have experience in internationalisation since mistakes in these promising markets can become costly.
- It is therefore crucial that first internationalisation efforts are made in an easy accessible market.
- Considering unit economics, the Hub is Revolts most profitable product. The destination market is therefore the most promising, and the size of this market should be taken into consideration when choosing a market.
- The charging behaviour (at home, work, destination, public) is another factor that should be taken into consideration when choosing a market to enter.
- The charging behaviour should be analysed using a compensatory decision strategy. This means that there is no threshold value for either the charging at work or charging at destination: if the destination market is small but the charging-at-work market is big, or the other way around, then the market should be evaluated as promising.
- From the perspective of existing interpersonal and customer connections, the Belgian, German and Italian market are most promising.
- To come to the best result in the scope of this project, the accessibility in terms of research is decisive in the selection of markets for further analysis.



To further narrow down the scope of the research the team decided to choose two easy to enter markets and three high growth potential markets for further analysis. This allows the author to explore and research both market segments which will lead to insights about the similarities and differences between these segments. The choice is based on either lowest entry barrier or highest growth potential.

Based on these lowest entry barrier, **Belgium** and **Germany** are selected. Based on the highest growth potential, **Austria**, **Italy** and **Poland** are selected.

Micro-level market selection

The markets that the author has analysed on a micro level are **Belgium, Germany, Austria, Italy** and **Poland.**
To be able to choose the right markets to enter and to develop the entry strategy for these markets it is essential to get a deeper and more qualitative insight into these markets. From the resource-based market selection several crucial factors are defined that still need to be researched before market entry. These factors were not included in the first macro-level selection since the research and quantitifying of these factors was not possible within the scope of this research.

To be able to make a rigid comparison the remaining markets are researched on these factors, combining quantitative and qualitative research methods:

- EV incentives and legislation (desk research, expert interviews)
- Charging infrastructure incentives and legislation (desk research, expert interviews)
- Charging mix (desk research)
- Charging points needed to service 2030 supply of EVs, per country or metropolitan area if possible (desk research, expert interviews)
- Processes for setting up a business (desk research, expert interviews)
- Competition (desk research, expert interviews)
- Growth of DOOH market (desk research)

The factors are all quantified and scored on a scale from 0 to 10 to be able to make a structured comparison. The weight of these factors is kept the same.

Table 5 shows a summary of the results of this research. Figures 29, 30 and 31 show the accompanying graphs. The full results can be found in appendix E.

From this analysis **Germany** and **Italy** emerge as most promising markets. The scores however do not differ significantly and therefore the author has decided to supplement the micro-analysis with expert interviews in Germany and Italy.

	Austria	Belgium	Germany	Italy	Poland
EV share of sales	19.0%	19.6%	20.2%	8.3%	4.7%
EV CAGR till 2027	25.0%	19.0%	22.8%	24.4%	21.8%
CAGR # CP till 2025	88.4%	109.5%	123.0%	156.0%	136.4%
CAGR # CP till 2030	39.8%	45.7%	50.0%	59.0%	53.6%
Ease of doing business	75	75	79.7	72.9	76.4
Level of competition	low	medium	medium	low	high

Table 4 - Market factors of Austria, Belgium, Germany, Italy and Poland

	Austria	Belgium	Germany	Italy	Poland
Growth of charge points	0	3	5	10	7
Ease of entry	3	5	10	1	5
Level of competition	8	4	4	9	1
Incentives	0	3	4	1	2
Legislation	2	2	1	0	4
Charging behaviour	0	4	0	7	8
DOOH market	10	6	7	1	0
TOTAL	23	27	31	29	27

Table 5 - Results of micro analysis

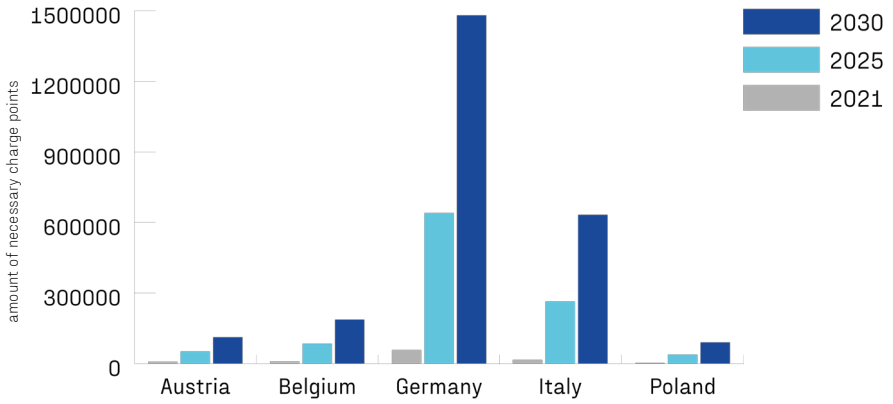


Figure 29 - the amount of necessary charge points for the predicted amount of EVs per country

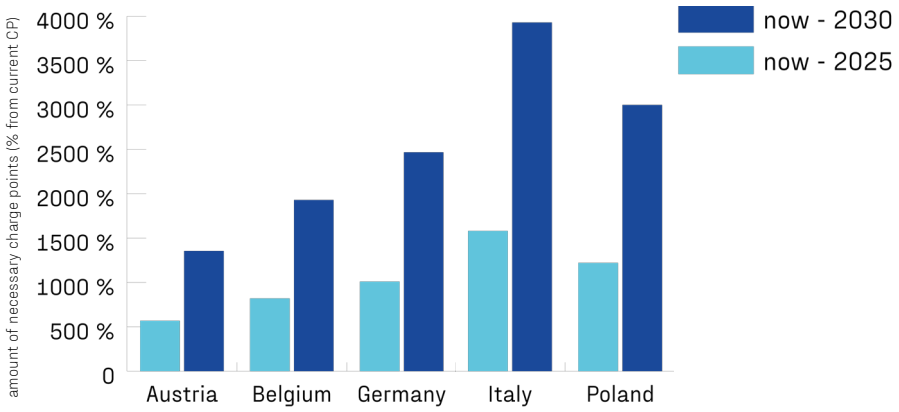


Figure 30 - the amount of necessary charge points for the predicted amount of EVs per country (% from current CP)

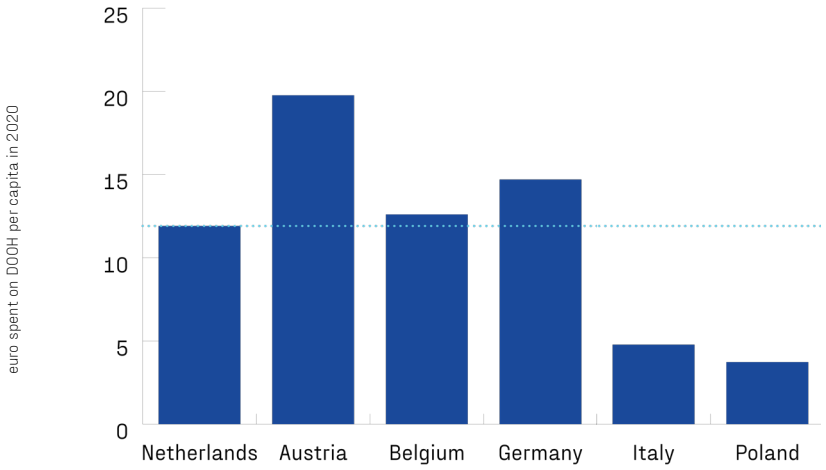


Figure 31 - the size of the DOOH market per capita per country

Expert interviews

To get a better understanding of the German and Italian markets the author has interviewed six industry experts. The goals of these interviews were to 1) get an insider view on the EV charging market in Germany and Italy, and 2) understand how setting up a business in Germany and Italy works.

From the secondary market analysis and insights from these expert interviews the author has concluded that **the German market is more interesting for Revolt in the short term**. The market is mature enough to understand the product and service while being far from saturated. Companies want to switch to electric vehicles but lack the knowledge and expertise about the charging infrastructre. The value chain is still very segmented and the experts currently do not know about a full service company covering the whole process.
In comparison, the Italian market is only starting to accept EVs. Legislation and grid capacity are severly slowing down the rollout of charging infrastructure, which is in turn limiting the EV adoption. Related to doing business, B2B business is very dependent on having a local network. This makes it difficult and costly to enter this market since a company has to rely on either existing connections, or hire sales representatives to form connections and relationships.

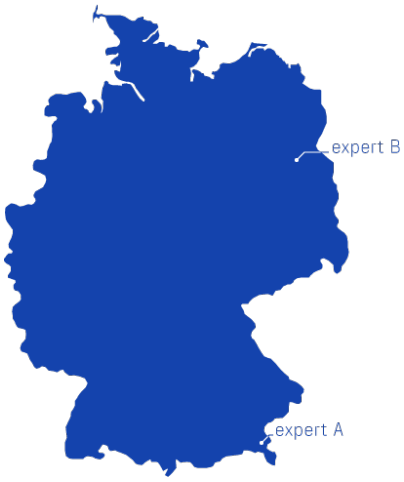
Because size of Germany and the large differences between states the author advices to focus on a specific region within Germany for first market entry.

Insights in the German market

The author has interviewed two experts in the German market; a business development manager for a B2B mobility solution and an EV mobility consultant. The author conducted a one hour semi-structured interview with each expert to uncover the developments in the EV market, the needs of customers regarding EV infrastructure and insights in the way of doing business in Germany.
This section describes the most relevant insights from these interviews

Expert A: Business development manager B2B mobility solution
Dutch**,** 3+ years of experience in German market

Expert B: EV mobility consultant
German, 5+ years of experience as consultant in logistics and mobility @ GP Joule Connect



"Germans trust experts. It is important to know all the details about your product and the things it is interacting with"

- Business development manager

"There is a huge gap between how many charge points there are, and how many EVs. If we really want to switch to a fully electric fleet, we need more charge points"

- EV mobility consultant

"Germany is a real 'Messe' (business fair) country, especially in the technology sector"

- Business development manager

"Well, lease cars are quite new in Germany but I expect it will take up fast in the coming years."

- EV mobility consultant

"I mean, people are not against electric driving but most of them first would like to see proof that it is just as convenient as driving a fuel car"

- EV mobility consultant

"A lot of smaller companies lack either the knowledge or the time to get this knowledge about how EV charging works and what they would need. So they just leave it, until it might become obligatory"

- EV mobility consultant

Insights in the Italian market

The author has interviewed four experts in the Italian market; the founder of an electrical installation network, an EV charge point reseller, a business development manager for a B2C mobility network and the business development manager for a B2B mobility solution. The author conducted a one hour semi-structured interview with each expert to uncover the developments in the EV market, the needs of customers regarding EV infrastructure and insights in the way of doing business in Italy.
This section describes the most relevant insights from these interviews.

Expert A: Founder of electrical installation network
Italian, 15+ years of experience as an entrepreneur in the Italian market.

Expert B: EV charge point reseller
Dutch, 2+ years of experience as EV charge point reseller, 15+ years of experience as entrepreneur in Italy

Expert C: Business development manager B2C mobility network
Dutch, 2+ years of experience as business development manager in Italy, 5+ years experience as international growth manager

Expert D: Business development manager B2B mobility solution
Dutch, 1+ years of experience as business development manager in Italy

"We don't really know yet which customer segment is most promising. We are currently talking with municipalities, some smaller business and individual EV drivers that want to charge at home"

"Currenlty people are just buying the cheapest charge point they can find. They are not willing to invest in a high quality charging station, buying an EV is already expensive enough"

- Founder electrical installation network

"The government has just begun with incentives to drive EV adoption. But now the electricity grid will become a problem, which will take at least a few years to fix. We just began with exploring the market and we already had to alter our expectations. It is not taking off as we expected it would"

- EV charge point reseller

"Having a company car is not really a thing in Italy as it is in the Netherlands. Most people just own their own car"

- Business development manager B2C mobility network

"You need to work through sales partners with a local network. Otherwise it is impossible to get in touch with the right people. But after you are acquainted and had lunch or dinner with them, the relationship is set."

- Business development manager B2B mobility solution

Conclusion and takeaways

This chapter presents the result of the international market selection for Revolt, following the process developed in chapter 3. The author has analysed all countries within the scope in multiple steps.

Based on a quantitative market analysis the author has made a segmentation of the fifteen most promising markets based on the maturity, expected growth and ease of entry.

The author then qualitatively analysed these fifteen countries based on alignment with Revolts capabilities, resources and network connections. From this analysis **Austria, Belgium, Germany, Italy** and **Poland** emerge as most promising.

After performing a quantitative and qualitative micro-level analysis of these five countries, **Germany** and **Italy** rank as most promising countries. To be able to choose the first market to enter, the author has carried out several interviews with experts in both countries. Based on the insights of these expert interviews the author selects **Germany** as the first market to enter.

The research in this chapter shows that the market potential in Germany is sizeable. The total EV market size in 2023 is expected to be at least six times as big as in the Netherlands. Adoption rates, regulations customer behaviour are one to two years behind on the Dutch market, making **Germany an ideal market to enter in the coming year**.

The next chapter covers the validation of the product-market fit in Germany. After the fit is validated, chapter 8 describes the development of the market entry playbook.

CHAPTER 7

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validation of product market fit

7. Validation of product-market fit

From the secondary analysis, Germany emerges as the most promising market for the first internationalisation efforts of Revolt. The next step is to validate product-market fit (PMF) in this market. In other words, the author needs to test if Revolts current value propositions align with the customer needs in Germany. To validate this product market fit the author uses two methods; qualitative interviews and quantitative A/B tests. The result is a quantitative validation of PMF in Germany.

To be able to reach the right people the author has developed three buyer personas together with the sales lead and the marketing lead. Input for the creation of these personas are customer interviews, the analysis of all entries in Revolts CRM system and the experience of the sales and marketing leads. The buyer personas, company profile and target market are set out in the next section.

Target market

The author advices to target small and medium companies, ranging from 10 to 500 employees for office locations. The company should own their parking spots or have a >5 year lease of these parking spots.

Large corporates require a lot of due diligence before accepting a new contractor. Therefore focus should be on SMEs. Larger corporates can become more interesting as soon as Revolt acquires large enough reference projects.

Company profile

The ideal customer has a sizeable car fleet that is steadily transforming towards a fully electric fleet. It wants a future proof solution because the share of EVs will increase in the future. Employees are switching to EVs because they are more sustainable and cheaper to own or lease than ICE cars. The company does not have the knowledge or expertise to roll out the EV charging infrastructure themselves and are looking for a reliable partner to support them with this transition.

Buyer persona

The three most common customers are the SMB owner, the facility manager and the commercial director. The SMB owner wants to provide EV charging as a service for his visitors and customers. The facility manager is more company focussed and want a solution that works for him and his employees and does not give him extra work. The commercial director has a more strategic objective; by providing EV charging they want to differentiate themselves from their competition.

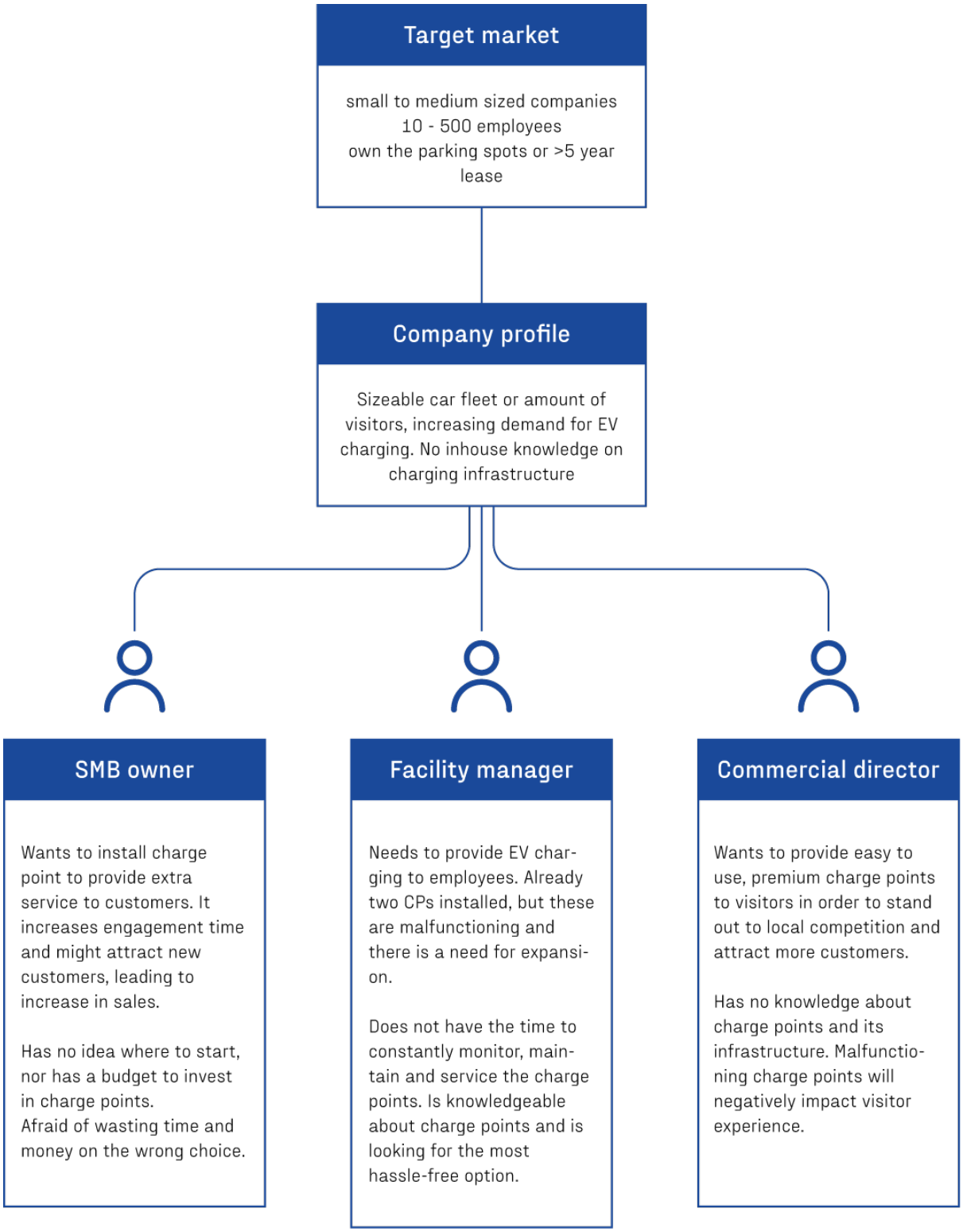
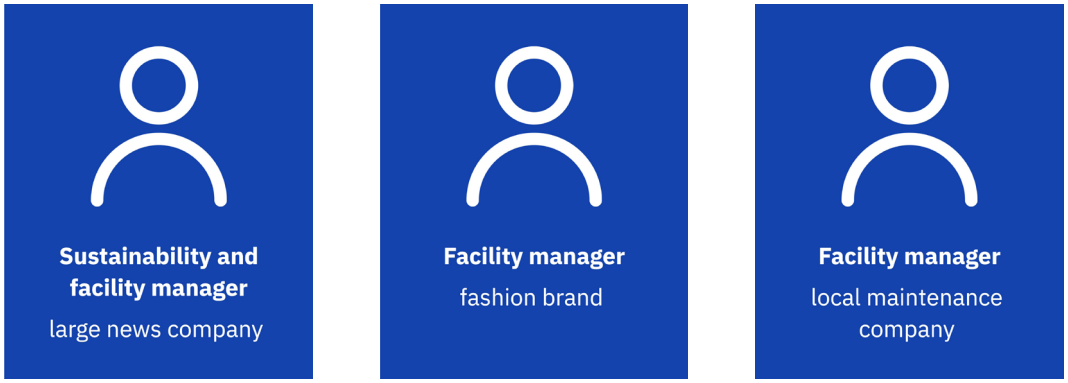


Figure 32 - The target market, company profile and associated target customers

Customer research

In order to get an insight into local customer needs, the author has conducted three semi-structured interviews with potential Revolt customers:



Insights in German market

- The demand for EV charging is mainly coming from employees that are switching to an EV
- The main issue in the rollout of charging infrastructure is the capacity of the grid connection in the office building. These are currently not sufficiently dimensioned for EV charging
- Company A wants to expand their EV charging infrastructure but it would require alterations to the electricity network in their building, which they do not own.
- Companies do not want to invest in a solution that might be outdated within a few years.
- If employees can only charge at home they would rather have an ICE car. Battery capacity of EVs is still not enough for some employees to drive to and from work. The need for charging at work is there.
- Large impact can be made in electrifying distribution fleets. These are however often located in temporary locations, requiring mobile or temporary EV charging solutions.

Limitations to qualitative customer research

The author was only able to speak to three potential customers in Germany. This does not provide enough data for PMF (in)validation due to the small sample size of potential customers.

Quantitative validation

Because of the limited sample size in the qualitative research, the PMF validation is supplemented with a quantitative test.

In this test the author researches which value proposition (all-in-one subscription model or buy plus optional subscriptions) aligns best with the needs of potential customers in the target market. The author has designed online advertisement campaigns, one for each value proposition.

To research which value proposition aligns best with the target market, the author set up an A/B test. In an A/B test, the target group is randomly divided into two groups, each of which receives one of the two value proposition advertisements. When they click this advertisement they are forwarded to a landing page where they can leave their details in case they want to receive more information about the value proposition.

By measuring the impressions, click rate, sign-ups and corresponding conversion rates and comparing these between the two value propositions, the author can conclude which value proposition aligns best with the target market.

Design

To measure which value proposition works better it is important that all other aspects of the advertisements and landing pages are similar; only the expression of the value proposition can differ. Here, we differentiate between the subscription model and the buy model.

Subscription	Buy
Monthly fee	Single fee
Installation included	Installation for additional fee
Maintenance included	Maintenance for additional fee
Service included	Service for additional fee
Revolt owns CP	Customer owns CP

Table 6 - Subscription versus buy proposition

Target group

The advertisements are targeted towards the same customers as in the Netherlands (see appendix F). The main criteria are their function, the company size and the company location.
An example of someone within the target group:

Channel

For this experiment the author has decided, in consult with the marketing lead, to use the platform LinkedIn. LinkedIn is a business-focused social media platform and according to 40% of B2B marketeers considered as the most efficient tool for generating high-quality leads (Gartner, 2021). It is relatively easy to target the right people and reach decision makers within companies.
It is also the platform Revolt is currently using for their social media marketing efforts.

Method

The campaign runs for two weeks, after which the results are collected. The A and B advertisements are distributed equally among the targeted group. The amount of impressions and clicks are recorded per advertisement per day.

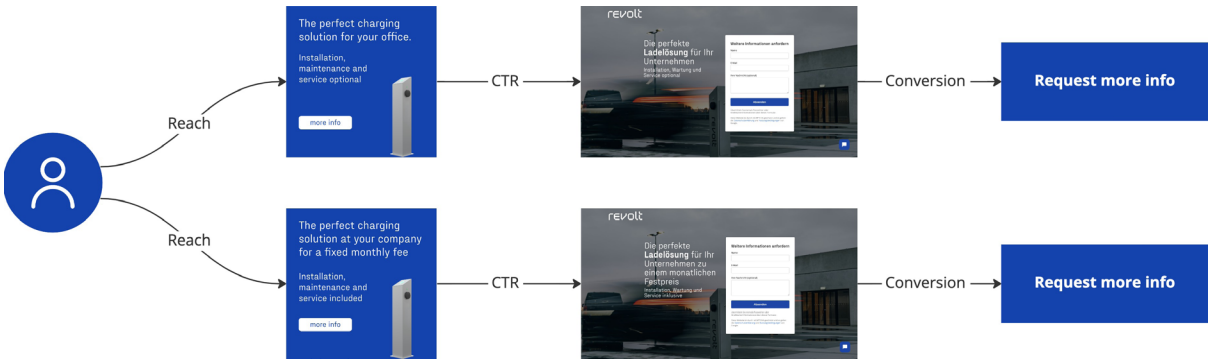


Figure 33 - Flow of the AB test and relevant measurements

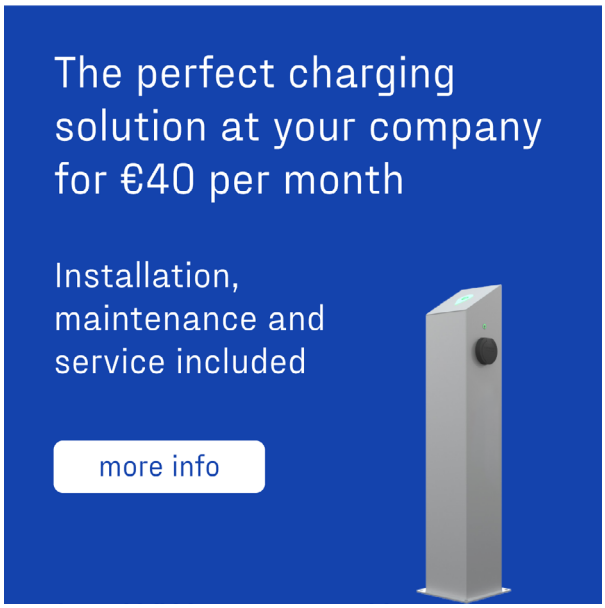


Figure 34 - Ad A, subscription proposition

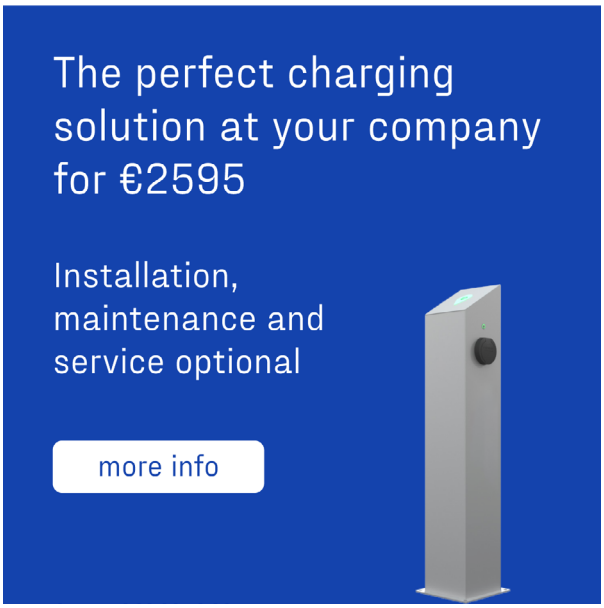


Figure 35 - Ad B, buy proposition

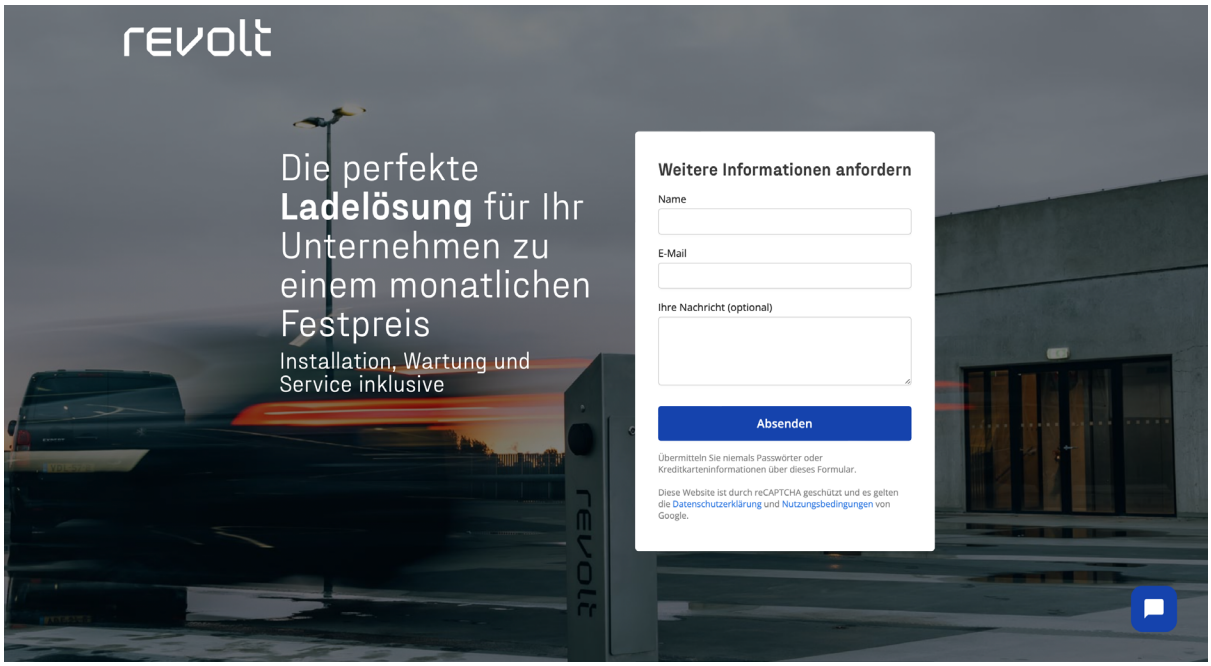


Figure 36 - Landing page of the subscription proposition in German

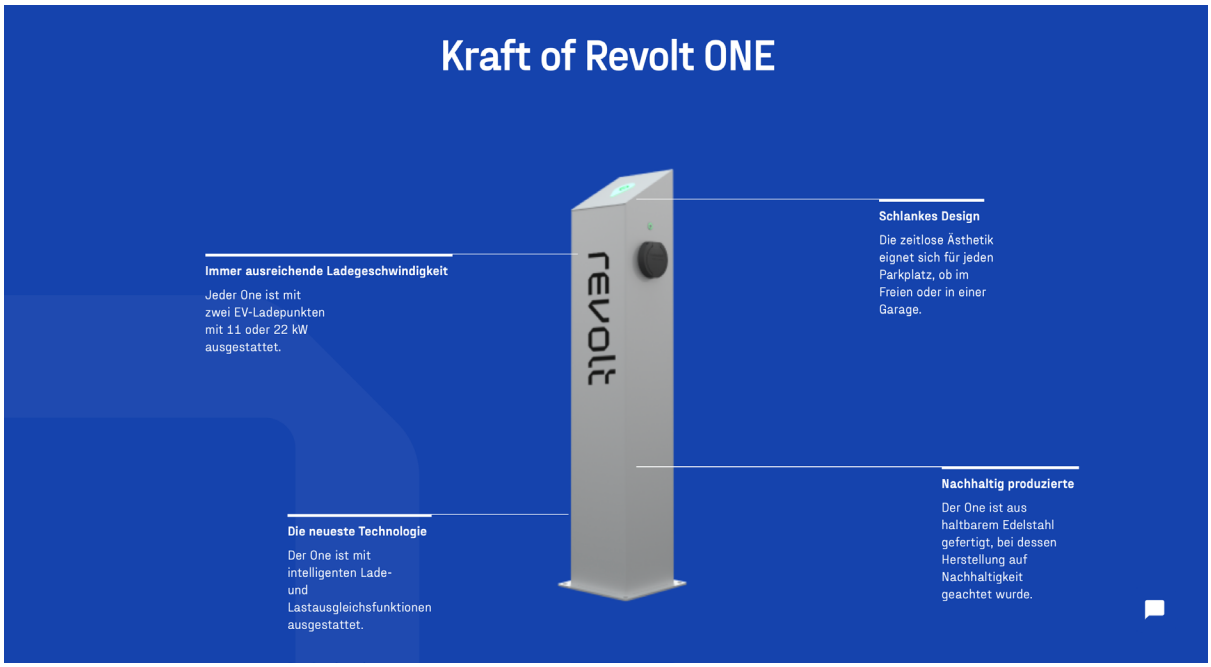


Figure 37 - Additional info on the landig page about the One

Results

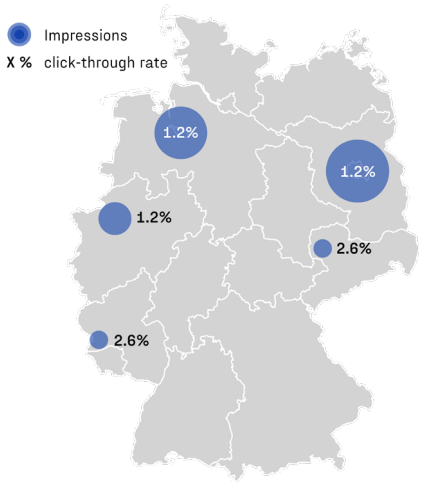
After running the campaign for 15 days the results are collected and analysed. The ads reached 11.618 and 8.978 people leading to 101 and 79 landing page visits respectively. People did not leave their contact details for both advertisements resulting in a conversion of 0%.

There is no significant difference in the click through rate between these two advertisements (p = 0.4678). Therefore no conclusion can be made about whether one of the two value propositions is a better fit for the German market.

Since the landing page visitors did not leave any contact details it is not possible to get in touch with these visitors to interview them about their reasons for engaging with the advertisments.

The click through rate however is well above the LinkedIn CTR benchmark of 0.44% (other sources report values ranging from 0.22% to 0.65%) on average. This is a significant difference. Without qualitative insights it is however hard to draw conclusions on the product-market fit from this result.

The author therefore assumes product-market fit for both Revolts propositions for the remainder of this project.



Company Industry Segment
1. Advertising and advertising services
2. Media and telecommunication
3. Retail
4. Research services
5. Government administration

Job Title Segment
1. Business development manager
2. Project manager
3. Manager
4. Business Analyst
5. Office manager

Job Function Segment
1. Real estate
2. Social work and welfare services
3. Program and project management
4. Education
5. Information Technology

Figure 38 - Results of ad campaign per demographics, highest CTR

	A: subscription	B: buy
Impressions	11.618	8.978
Clicks	101	79
Click through rate	0.87%	0.88%
Conversions	0	0

Table 7 - Results of A/B test between subscription and buy proposition

Conclusion and takeaways

This chapter presents the results of the validation of the product-market fit of Revolts proposition in the German market.

The author cannot draw a conclusion on this aspect because of the following limitations in this research:
- It is hard to reach potential customers in Germany through cold outreach. From the 100 people the author reached out to, only 7 responded.
- From the 7 that responded, only 3 spoke English well enough to answer the questions

What the author was able to deduce from these conversations is the following:
- EVs are hot topic, people and companies are willing to switch to electric vehicles
- Charging infrastructure is one of the limiting factors, next to the price.
- There are big differences, both in culture and regulations, between different states.

From the quantitative A/B test the author was able to validate the product market fit. The interaction with the advertismenets were well above the benchmark for succesful ad campagins.

The demographic insights from the A/B test are used to select the first region to enter in the German market and provide a basis for the market segmentation and target segment selection.

CHAPTER 8

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Go to market tools

8. Go to market tools

To further aid Revolt in their international expansion efforts the author has developed a market analysis dashboard and an entry playbook together with the Revolt team. A market entry playbook is a set of guidelines that a company follows when entering a new market. It includes a list of steps that Revolt needs to take in order to successfully enter the market, from conducting market research to establishing distribution channels. The goal of a market entry playbook is to help Revolt make informed decisions about how to enter a new market and to increase the chances of success in that market.

In several co-creation sessions with the sales lead, partnership lead and one of the co-founders the author has developed the structure and elements of the playbook. Based on the previous research in this project the author has developed the content of the playbook elements.

A market entry playbook is a document that outlines the steps and best practices for entering a new market. It is typically used by companies looking to expand into new geographic regions, industries, or product lines. The market entry playbook includes information on market research, target customer identification, competitive analysis, value proposition development, marketing and sales strategies and the operational blueprint for Revolt.

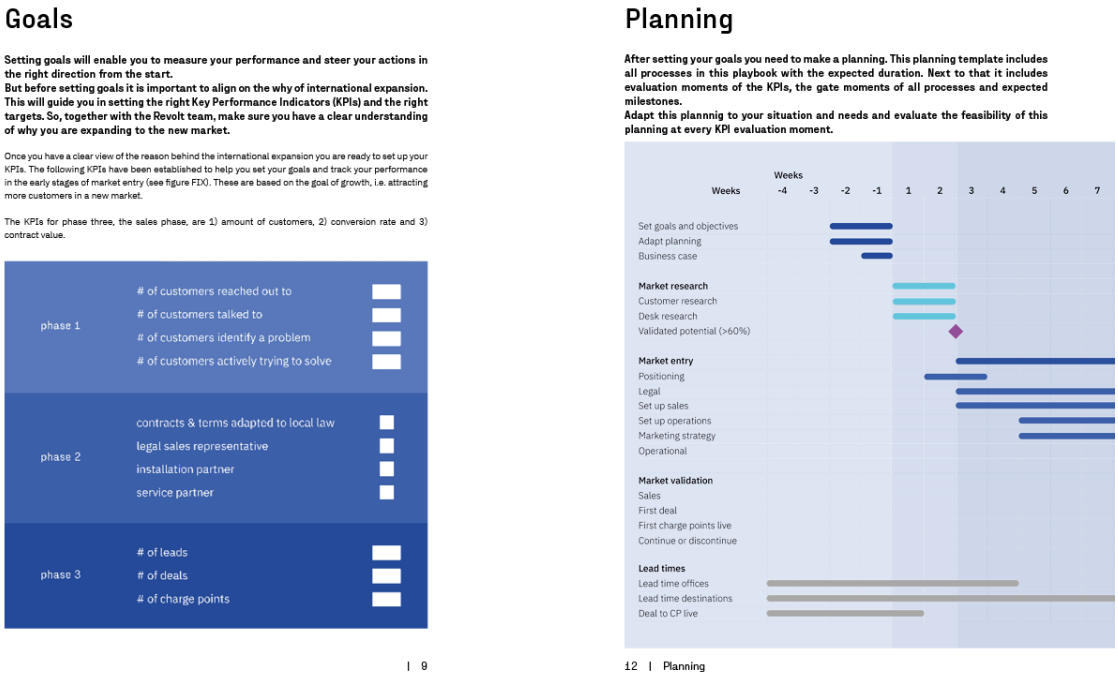


Figure 39 - Example of playbook content

Design of the playbook

The goal of this playbook is to provide a blueprint that can be used to enter most markets researched in the project scope (EU27 + Iceland, Norway, Switzerland and the UK). The author has used the results and insights from the internal and external research as input for the playbook.

After multiple conversations with the cofounders it became clear that next to providing information on all the processes and how to set these up, the playbook should also guide Revolt in the decision making processes after entering the market. To achieve this, the playbook is divided in three phases (see next section). Each phase corresponds to a different entry mode, with the investment and risk increasing with each phase (see chapter 3 for the literature review on entry modes, investment and risk).

Each phase ends with an evaluation moment. Here, the playbook provides a template for structrurally evaluating the goals and corresponding results of the phase. By filling in the template the decision can be grounded in actual results instead of a subjective 'gut-feeling' and the risk of sunk cost fallacy[1] is reduced.

The Revolt team should however not completely ignore their gut-feeling when making a go/no-go decision since the provided templates might not cover subtleties in the market like upcoming legistlation or promising conversations with potential customers.

The playbook therefore positions itself as a guide, not as a set of rules that should strictly be followed, no matter the context.

Where do the tools fit in international expansion efforts?

To give structure and guidance to the internationalisation process, this process is divided into five phases. With each phase the amount of validation and investment grows. At the end of each phase is a decision moment on wether to continue in the current market or not.
The phases and its corresponding activities, goals and tools are shown in figure 40.

To select a market in phase 0, Revolt can use the data dashboard to structurally and objectively analyse, compare and select promising markets based on selected market factors like GDP, car commute and growth of the EV market.

Once a market is selected the person responsible for growth can use the market entry playbook for the next three phases. The market playbook covers phase 1, 2 and the start of phase 3.

1 The sunken cost fallacy is a cognitive bias in which actors irrationally escalate their commitment to a previously made decision, despite new information indicating that the decision is no longer in their best interest. This occurs because the actors perceive that the resources they have already invested in the decision are irretrievable and therefore should be protected. Consequently, individuals continue to invest in the decision, even when the rational decision would be to cut losses and move on. (Haita-Falah, 2017)

Phase 1 | market research | 10 days

Phase 1 is all about customer research. In this phase Revolt needs to validate the need for their solution. Through interviews they need to find out the current problems, barriers, needs and solutions in EV charging for companies. This will allow them to find the first signs of product-market fit and to tailor the positioning to this new market. This phase also covers desk research on incentives, legislation and cultural differences that may impact Revolts business model.

Phase 2 | market entry | 10 weeks

In phase 2 Revolt is entering the new market. The sales strategy, operations and marketing need to be developed and all contracts and legal terms need to be adapted to the local legislation. During this phase the goals for phase 3 are set.
Once this phase is completed, Revolt can make its first sales in the new market.

Phase 3 | market validation | 10 months

Phase 3 is about validating the new market through sales. By using cold outreach and referals through the existing network Revolt can make its first sales in the market. By monitoring the crucial KPIs 1) amount of customers, 2) the conversion rate and 3) the contract value, the sales and marketing strategy can be adapted to reach the best results.
At the end of this phase the targets set in phase 2 are evaluated. This allows Revolt to make a substantiated decision about wether to continue in this market or not. If so, the next and final phase of the market entry process begins.

Phase 4 | establishing local entity

In the final phase a local legal entity is set up and all business operations willl flow through this entity. Revolt is now fully operational and committed to the new market.

Figure 40 - The five phases of foreign market entry and where the tools fit in these phases

Who will use the playbook?

The author advises Revolt to either hire or appoint an employee that will be responsible for the international market entry. The international market entry is a full-time responsibility and the current team is already fully occupied.
The selection of the new market can still be done by the current team or be appointed to the international market entry lead. This phase 0 is done from the current Dutch office.
Once the market is selected, the international market entry lead will start full-time with the market entry. This is also where the playbook comes into play.
From phase 1, the person responsible has to visit the new market frequently, as for phase 2. From phase 3 onwards a full time presence is required. Once the market is validated, Revolt can either choose to appoint the international market entry lead as the country manager for this market or hire an additional employee to be the manager in this new market.
The international market entry lead can then either start with the entry of a new market or get appointed to another role in the Revolt team.

Validation of the playbook

The author has validated the playbook internally. He pitched the idea to the cofounders, the partnership lead and an account lead. They believe that the playbook covers all necessary processes and the steps to set up and monitor these processes.
Actual validation of the whole playbook is only possible when Revolt is making its first internationalisation efforts. The playbook will then be used and tested against real market conditions, internal processes and individual capabilities. The feedback and results from this experience will lead to input for a new version of the playbook. This way, the playbook will be a living document, growing with each internationalisation effort.

Market analysis dashboard

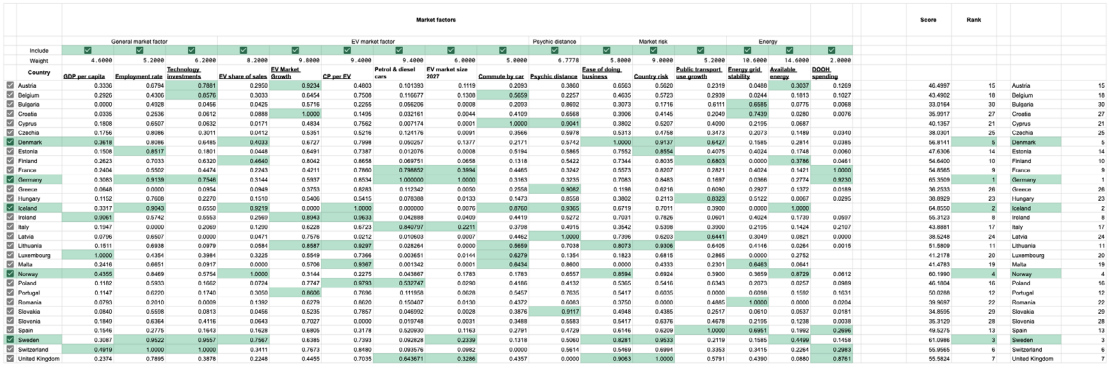
To aid Revolt in international market selection, and to choose the markets to further research in this these the author has developed a market analysis dashboard.
Using the market factors as defined by Marchi (2014), Brewer (2007) and the Revolt team this dashboard can be used to make a ranking of markets based on these factors.
The weights of these factors can be adapted and factors can be left out all together to create custom rankings based on the specific goals.

Currently most data points need to be updated manually. Most of these can be connected to an API to automatically update the values when new data is available. This is one of the recommendations for further development.

Another recommendation is visualising the data to be able to get a quick overview of how different countries perform on certain factors.

Validation of market analysis dashboard

The author has tested the market analysis dashboard with three team members. They all value the result of the tool and the adaptability (in-/excluding facors and markets, assigning different weights to the factors). The team does feel the results are clear and insightful.
They however found the dashboard a little overwhelming. To tackle this problem the author suggests to design and develop a clean and intuitive interface, either within the current spreadsheet application or in a new web-based application.
Visualising the (intermediate) results will also help in communicating these results more clearly and effectively, especially to people that are not directly involved in the internationalisation efforts.



	Market factors																	Score	Rank		
	General market factor					EV market factor					Psychic distance			Market risk			Energy				
Include	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Weight	4.6000	5.2000	6.2000	8.2000	9.8000	9.4000	9.6000	6.8000	5.8000	6.7778	5.8000	9.0000	5.2000	10.6000	14.6000	2.0000					
Country	GDP per capita	Employment rate	Technology investments	EV share of sales	EV Market Growth	CP per EV	Petrol & diesel cars	EV market size 2027	Commute by car	Psychic distance	Ease of doing business	Country risk	Public transport use growth	Energy grid stability	Available energy	DOOH spending					
Austria	0.3306	0.6794	0.7881	0.2950	0.9234	0.4603	0.101393	0.1119	0.2093	0.3860	0.6563	0.5620	0.2319	0.0468	0.3037	0.1269		46.4997	15	Austria	15
Belgium	0.2926	0.4306	0.6576	0.3033	0.6454	0.7506	0.116677	0.1308	0.2659	0.2257	0.4635	0.5723	0.2939	0.0244	0.1813	0.1027		43.4902	18	Belgium	18
Bulgaria	0.0000	0.4928	0.0456	0.0425	0.5716	0.2295	0.056206	0.0008	0.2093	0.8602	0.3073	0.1716	0.6111	0.6935	0.0775	0.0068		33.0164	30	Bulgaria	30
Croatia	0.0335	0.2536	0.0612	0.0888	1.0000	0.1405	0.032161	0.0044	0.4103	0.6568	0.3906	0.4145	0.2049	0.7439	0.0280	0.0076		35.9917	27	Croatia	27
Cyprus	0.1808	0.6507	0.0632	0.0171	0.4834	0.7562	0.007174	0.0001	1.0000	0.9041	0.3802	0.5207	0.4090	0.2105	0.0687			40.1357	21	Cyprus	21
Czechia	0.1756	0.8086	0.3011	0.0112	0.6351	0.5278	0.124176	0.0091	0.2666	0.5978	0.5313	0.4758	0.3473	0.2073	0.1489	0.0310		38.0301	25	Czechia	25
Denmark	0.3618	0.9286	0.6485	0.4033	0.6727	0.7998	0.050257	0.1377	0.2171	0.5742	1.0000	0.9137	0.6427	0.1585	0.2814	0.0385		56.8141	5	Denmark	5
Estonia	0.1508	0.8517	0.1801	0.0448	0.6491	0.7387	0.012076	0.0008	0.5194	0.5865	0.7552	0.8556	0.4075	0.4024	0.1748	0.0060		47.6306	14	Estonia	14
Finland	0.2623	0.7033	0.6320	0.4640	0.8042	0.8658	0.069751	0.0658	0.1318	0.5422	0.7344	0.8035	0.6803	0.0000	0.3786	0.0461		54.6400	10	Finland	10
France	0.2404	0.5502	0.4474	0.2243	0.4211	0.7860	0.786852	0.1894	0.4465	0.5342	0.5575	0.8207	0.2821	0.4024	0.1421	1.0000		54.8565	9	France	9
Germany	0.3083	0.9139	0.7546	0.3144	0.5937	0.8534	1.000000	1.0000	0.3163	0.3235	0.7083	0.8485	0.1697	0.0366	0.3774	0.9230		65.1509	1	Germany	1
Greece	0.0645	0.0000	0.0954	0.0948	0.5783	0.8283	0.112342	0.0050	0.2558	0.9262	0.1198	0.6216	0.6040	0.2927	0.1372	0.0188		36.2533	26	Greece	26
Hungary	0.1152	0.7008	0.2270	0.1510	0.5406	0.5415	0.078388	0.0133	0.1473	0.8558	0.3802	0.2113	0.8323	0.5122	0.0067	0.0295		38.8929	23	Hungary	23
Iceland	0.3317	0.9043	0.6550	0.9219	0.0000	1.0000	0.000000	0.0076	0.8700	0.3365	0.6719	0.7011	0.3900	0.0000	1.0000			64.6550	2	Iceland	2
Ireland	0.3061	0.9742	0.5553	0.2969	0.6943	0.8633	0.042898	0.0400	0.4419	0.9272	0.7031	0.7826	0.0901	0.4024	0.1720	0.0997		59.3123	8	Ireland	8
Italy	0.1047	0.0000	0.2069	0.1290	0.6228	0.8723	0.840797	0.2211	0.3798	0.4915	0.3642	0.5308	0.3900	0.2105	0.1424	0.2107		43.8881	17	Italy	17
Latvia	0.0796	0.6507	0.0000	0.0471	0.7576	0.9212	0.010603	0.0007	0.4462	1.0000	0.7306	0.9200	0.6441	0.3049	0.0821	0.0000		38.5248	24	Latvia	24
Lithuania	0.1811	0.6938	0.0979	0.0594	0.6587	0.9297	0.028264	0.0000	0.5659	0.7038	0.8073	0.9306	0.6408	0.4146	0.0284	0.0015		51.5809	11	Lithuania	11
Luxembourg	1.0000	0.4364	0.3984	0.3225	0.5549	0.7366	0.003651	0.0144	0.6279	0.1364	0.1823	0.6815	0.2865	0.0000	0.2752			41.2178	20	Luxembourg	20
Malta	0.2416	0.6651	0.0917	0.0000	0.5706	0.9367	0.001342	0.0001	0.8434	0.8650	0.0000	0.4333	0.2301	0.6463	0.0641			41.4783	19	Malta	19
Norway	0.4355	0.8469	0.5754	1.0000	0.3144	0.2275	0.043867	0.1783	0.1783	0.6557	0.8594	0.8824	0.3900	0.5659	0.8729	0.0812		60.1960	4	Norway	4
Poland	0.1182	0.5935	0.1662	0.0724	0.7747	0.9793	0.537747	0.0290	0.4166	0.4132	0.5365	0.5416	0.6343	0.2073	0.0257	0.0969		46.1804	16	Poland	16
Portugal	0.1147	0.6220	0.1740	0.3050	0.6002	0.7696	0.111958	0.0626	0.5457	0.7635	0.5417	0.6035	0.0000	0.0366	0.1550	0.1631		50.0288	12	Portugal	12
Romania	0.0761	0.5510	0.0509	0.1392	0.6778	0.8626	0.150407	0.0130	0.4372	0.6063	0.3750	0.0000	0.4885	1.0000	0.0000	0.0354		39.9087	22	Romania	22
Slovakia	0.0840	0.5556	0.0813	0.0456	0.5235	0.7857	0.046092	0.0028	0.3876	0.9117	0.4948	0.4385	0.2517	0.0610	0.0537	0.0181		34.8505	29	Slovakia	29
Slovenia	0.1840	0.6364	0.4116	0.0643	0.7027	0.0000	0.015748	0.0031	0.3488	0.5583	0.5417	0.6376	0.4678	0.2105	0.1238	0.0038		35.3129	28	Slovenia	28
Spain	0.1546	0.2775	0.1643	0.1626	0.6805	0.2178	0.529930	0.1763	0.2791	0.6729	0.6146	0.6209	1.0000	0.6951	0.1992	0.2696		49.5273	13	Spain	13
Sweden	0.3087	0.9522	0.9557	0.7567	0.6385	0.7393	0.092828	0.2339	0.1318	0.5060	0.8281	0.9533	0.2119	0.1585	0.4199	0.1458		61.0986	3	Sweden	3
Switzerland	0.4919	1.0000	1.0000	0.3411	0.7673	0.8480	0.093578	0.0982	0.0000	0.9614	0.5469	0.6994	0.3353	0.3415	0.2264	0.2983		55.9565	6	Switzerland	6
United Kingdom	0.2374	0.7895	0.3878	0.2248	0.4455	0.7035	0.643671	0.3296	0.4357	0.0000	0.9063	1.0000	0.5791	0.4390	0.0860	0.8761		55.5924	7	United Kingdom	7

Figure 41 - Market data dashboard, result page in its current form

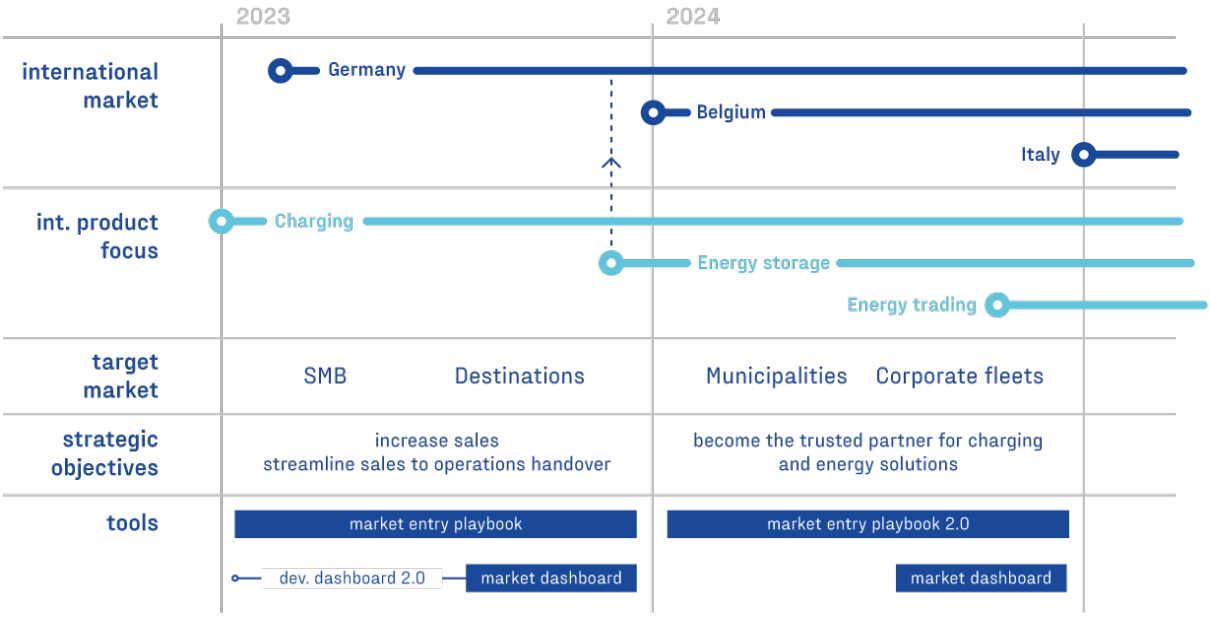
Roadmap for international expansion

Revolt has a clear idea where the company should be in the next two years to stay relevant and competitive in the Dutch market. This thesis adds the international perspective to the future of Revolt. To arrive at this future state it is necessary for Revolt to carefully balance day-to-day operations, proposition development and growth efforts without compromising on new and current customer's experience. This section presents a strategic roadmap that will guide Revolt in the first efforts towards internationalisation and proposition development.

The roadmap covers five domains; which international market to enter, which product-focus Revolt should have in these new markets, the companies Revolt should target, the general strategic objectives of Revolt, and finally the supporting tools. The scope is limited to two years due to the maturity of the company and the rate of developments of the context.

The author advices to enter Germany first, then Belgium and then Italy. Even though Italy emerged as the second most promising markets, from the expert interviews the author concluded that the Italian market needs to mature more before Revolt can take advantage of the predicted growth.

Once the charging proposition is succesful in a market, Revolt can roll out the energy storage proposition as well, thereby preparing the roll-out of the full energy ecosystem proposition.



Recommended beachhead market in Germany

Since Germany is a huge market and the differences between geographical areas and states is significant (*How Varied Is Germany?*, 2022; *Do's-and-don'ts in Duitsland*, 2019) the author advices to subdivide the German market per state and focus on one state as new market for international expansion.

The federal states in Germany have a great freedom of decision and therefore regulations and incentives surrounding EVs and it's charging infrastructure differ between states. This leads to a difference between adoption and infrastructure needs, as researched by ICCT (2020b).

Using the results from the A/B test and insights from ICCT (2020) and Nationale Leitstelle Ladeinfrastruktur (2020) research, North Rhine-Westphalia emerges as a promising market. EV adoption is quickly growing and there is a large gap between current and necessary charging infrastructure.

In addition North Rhine-Westphalia is the most populous German state and the largest industrial area in Germany. It generates around a fifth of Germany's GDP (*Federal States of Germany*, 2022).

Especially the Ruhr area, a highly industrialised area has a large charging infrastructure gap. According to the ICCT (2020b) the Ruhr area currently has 8% of the charging infrastructure that will be needed in 2025, and only 3% of the necessary infrastructure for 2030. For the non-metropolitan area of North Rhine-Westphalia this is 15% and 5% respectively.
The wealth of NRW combined with the huge gap in necessary and existing infrastructure make NRW a good market to start with internationalisation efforts.

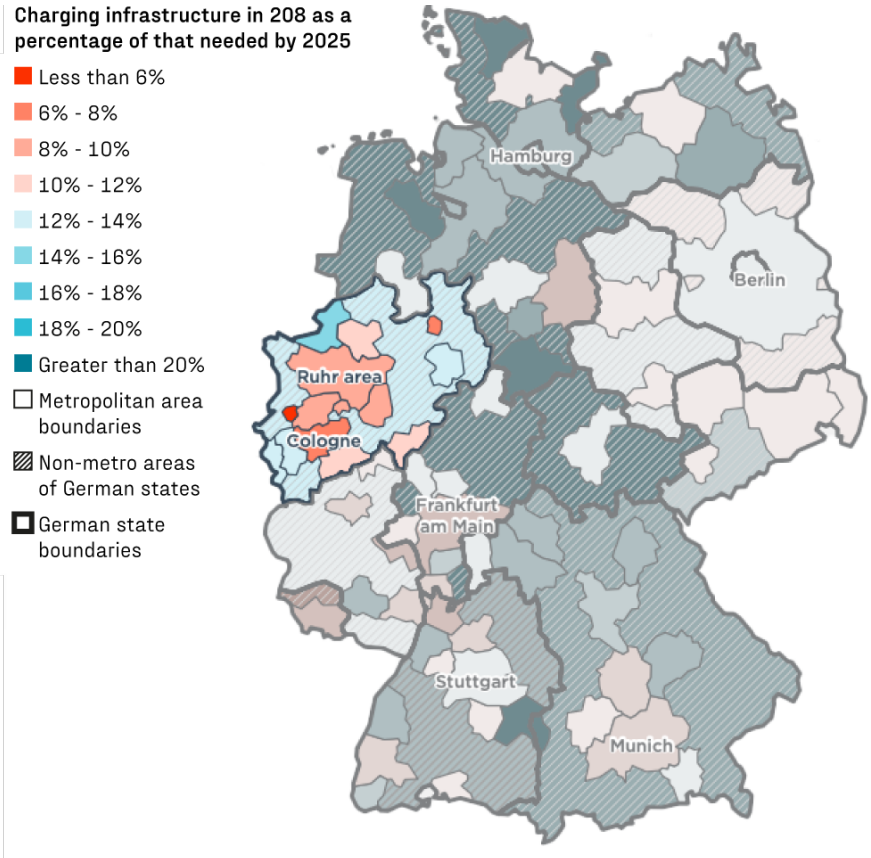


Figure 42 - Current charging infrastructure as a percentage of necessary infrastructure by 2025 (adapted from ICCT, 2020b)

Recommendations for entering the German market

As set out in the previous section it is necessary to subdivide the German market. The recommendations in this section however hold for the entire German market.

Market analysis

In Germany the government provides a €900 grant for the purchase and installation of charge points (KfW, 2020).

The grants for installing charge points make the subscription model less interesting for potential customers. This can be mitigated by invoicing the maximum grant amount at once, then the company does not have any costs for the first few months.

The current charge points do meet the needed certifications. The location of the publicly accessible charge points need to be shared, which is possible with the current back office system.
The charge points are not yet equiped with payment terminals. For now that is not a problem but this will become an issue in the near future for **public** charge points. Charge points on private (office) sites are exempt and this should therefore be the main target customer for Revolt.

Doing business

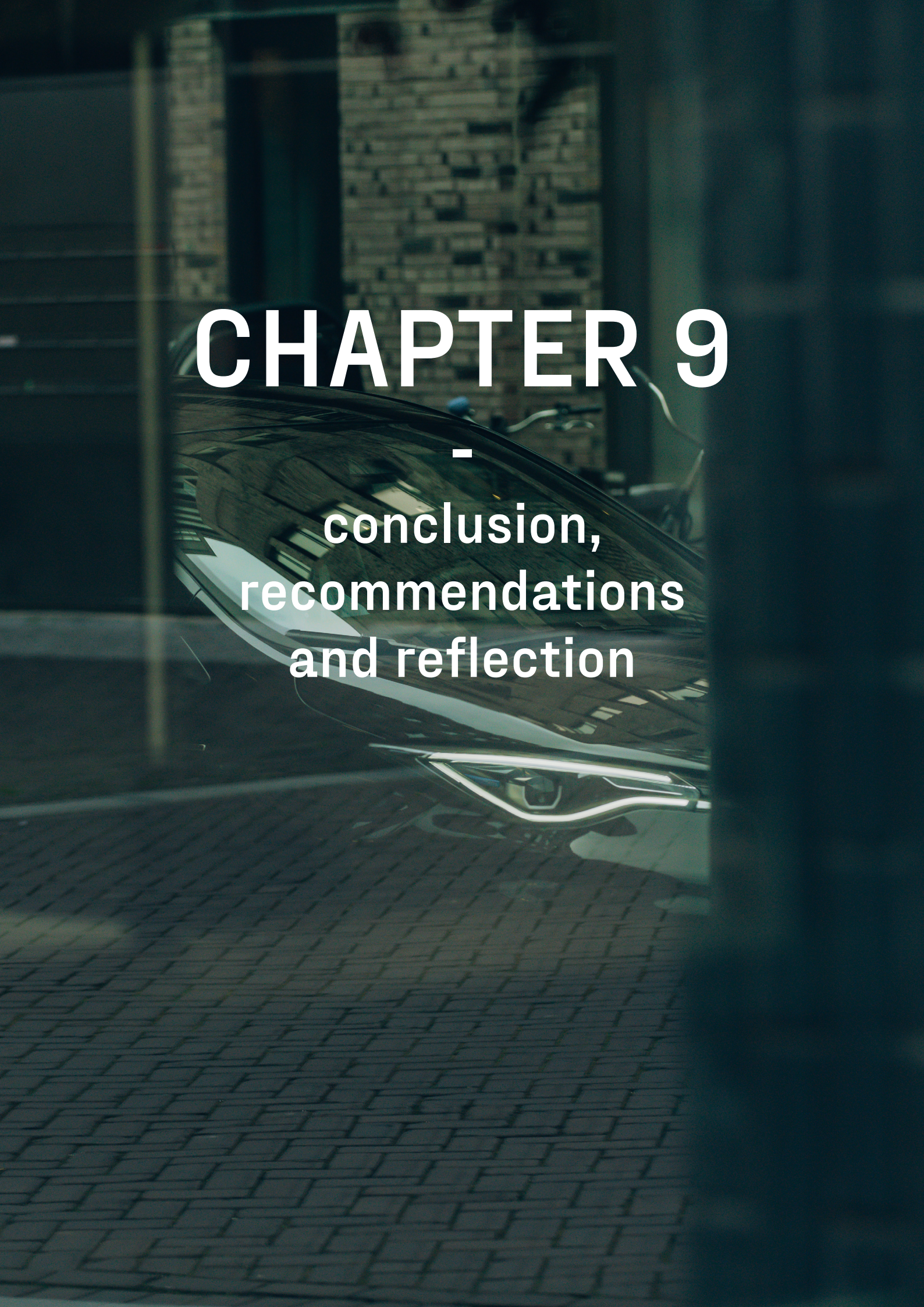
When doing business in Germany it is imperative that the people in direct contact with customers speak the local language. In the contact with potential customers it is important to use formal language and get down to business quickly.

For the sales representatives, a strong local network essential. German business relations are formed through in-person meetings. Presence at business fairs (‘Messes’) is a good way to build brand awareness, expertise and a strong network.

Customer research

When trying to reach out to customers the author ran into the problem of not being able to carry out the interviews in English. This proved the point discussed in the previous section that it is imperative to speak German when reaching out to customers in Germany.

In addition, leveraging Revolt’s and it’s team personal network will accelerate customer research. The network map (see appendix G) is a helpful tool in this.



CHAPTER 9

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conclusion, recommendations and reflection

Recommendations

Recommendations for international expansion

Use the market data dashboard to make an initial selection of interesting markets. This allows Revolt to narrow down the scope of market analysis while making sure no promising markets are prematurely excluded. The alignment with internal resources and capabilities is however imperative and is an essential step in the eventual market selection.

Start small. For a company with limited resources it will be more succesful to focus on entering one new market and establishing business there before moving to another market. This waterfall strategy allows Revolt to learn from the foreign market entry and use this knowledge in the next market entry, greatly reducing risk.

When exploring, selecting and entering a new market, Revolt should **leverage it's existing network.** Using it's connections in these markets will greatly improve the chances of speaking with the right people and will reduce lead time in all processes of the international market entry.

This thesis has limited the scope to the charge points in the product portfolio. The author advices to **enter a market with only the charging-as-a-service proposition.** This will allow Revolt to focus on the roll-out of this proposition and improves the chance of a succesfull market entry.
During the rollout of the charging proposition, the team can probe the new market for interest for the battery proposition. Especially in markets where energy grid capacity is a problem, the battery can help in the transition towards an electric fleet.

Over time Revolt will build more knowledge, capabilities and connections. This will also include knowledge about internationalisation and foreign markets, especially after the first international market entry efforts. This will allow Revolt to enter more distant and less known markets which might have a huge untapped potential. It is therefore crucial to **build the right structures and processes for capturing and storing knowledge in the company.**

Recommendations go-to-market tools

Market data dashboard

As discussed in the validation of the dashboard there are two main recommendations for further development; the current interface is overwhelming, and results are difficult to communitcate.
Making the dashboard easier to use will require the development and design of a less clutered and more intuitive interface.
The current results require interpretation and explanation to people that are not involved in the process. Visualising (intermediate) results will make these results easier to interpret and will make them easier to communicate to other stakeholders. This will increase the value of the dashboard.
The data in the dashboard is currenlty coming from static data sources. Some of these data sources can be accessed through an API, which enables automatic updates of the data points. Integrating these APIs in the dashboard will create an always up-to-date dashboard, increasing the reliability and actionability of the results and in turn increasing the value for Revolt. The auhtor therefore recommends to explore the possibilities for integrating this.

Market entry playbook
The market entry playbook should be treated as a living document. The current content is based on thorough research but experience is at least as valuable in this field. The playbook should therefore be used as a place where all knowledge concerning international expansion can be captured.

General recommendations

Since Revolt is currently growing rapidly and transitioning from the phase of start-up to a more established company, many processes will need to be structured and formalised.
What the author recommends is to build structures and processes for customer input and feedback. Currently, customer input and feedback is collected randomly and ad hoc, resulting in an inconsistent view of the experience and satisfaction of the customer.
The same holds for the capture, storage and handover of knowledge. Everyone within Revolt has its own expertise and is learning a lot on the job. Currently this knowledge is not stored anywhere besides the memory of this person. When new hires start, they can only uncover this knowledge by talking to this expert, and when this expert would leave the knowledge is lost for Revolt. It is therefore imperative to build a process for capturing and storing this knowledge.

Considering Revolts proposition the author has three main recommendations.

1. Develop smart charging capabilities
Revolts charge points currently do not have smart charging capabilities. If the charge points are capable of measuring the electricity use of the building and the connected EVs it can better distribute the load across the cars, and the cars and the building. This will reduce stress on the electricity grid, will maximise charging efficiency and will maximise the grid capacity of the building without overloading it.

2. Transparency
The CPO and MSP market is currently like the wild west. CPOs can set the price for the kWh that is going through their charge point. On top of that, MSPs can charge a fee for the use of their card, which can also include a starting fee. All CPOs and MSPs use a different model, with different fees, rules and . This has as a result that the EV driver has no way of knowing how much they will need to pay to charge their car. Since Revolt is located at the interface between CPOs and MSPs, or acting like both, they have the opportunity to become the first fully transparent EV charging provider. Where EV drivers can see what they will pay for their charging session at any time. This is a unique and hard to copy property and will make Revolt stand out from its competition

3. Dynamic pricing
This is something that is already being explored within Revolt. Nevertheless the author wants to express the benefits of adopting a dynamic pricing model. A dynamic pricing model bases the price per kWh on the supply and demand of electricity in a region. By making charging more expensive when the demand on the electricity grid is high, and on the other hand making charging cheaper when supply is high, dynamic pricing has the potential to reduce costs for end users and reduce stress on the electricity grid. If the local electricity grid make use of sustainable energy sources, the dynamic pricing will ensure that charging becomes cheaper when there is a lot of sustainable energy available. This further reduces the footprint of the charging session.

Conclusion

The aim of this thesis was to explore the rapidly developing context of EVs and its charging infrastructure. With the increasing pressure to reduce climate impact, by governments, companies and individuals, EVs prove to be necessary in the transition to emission-free mobility. And even though the adoption of EVs has grown significanlty over the last five years, there is still a long way to go.

The two factors inhibiting the widespread adoption of EVs are the price of EVs and the range anxiety. This range anxiety is due to the limited battery capacity and the lack of sufficient charging infrastructure.

Revolt has the capabilities to solve that last challenge. As employees are transitioning to electric vehicles and visitors are demanding charging at their destination, companies struggle to install the necessary charging infrastructure. Companies, whether it is a small local business or a nationwide network of offices, lack the expertise, knowledge and budget to provide charging to their employees and customers.

Revolts all-in-one service provides a solution to this challenge. Revolt is steadily gaining market share in the Dutch market, but in order to reach scale and network effects they need to look beyond the border. To aid the client in this challenge the author answers the following question in this thesis:

“How can Revolt grow its business within the European EV charging infrastructure market in the next three years?”

Based on a literature review the author first set out what an internationalisation strategy comprises and developed a process for international market selection. From this review it became evident that a solid overview of the company itself and the context it is operating in is crucial in formulating an international market entry strategy.
Based on semi-structured interviews and co-creation sessions with people from Revolt’s team, analysis of internal documents and customer interviews the author defines the status quo of the company. This results in an overview of the current strenghts and weaknesses of Revolt.
A context analysis based on desk-research revealed eight context drivers directly impacting Revolt’s business. The author then translated these into opportunities and threats.

The results of the internal and external analysis provided the starting ground for the international market analysis. The author combined an objective market analysis with an internal, resource-based analysis. Market factors defined in collaboration with Revolt’s team led to a market ranking and segmentation. The fifteen most promising markets were then analysed on Revolt’s ability to enter these markets. From this analysis the five most promising markets were selected for micro-level analysis. In this micro-level analysis the markets were compared on factors directly related to the business model, like charging behaviour and the use of Digital Out Of Home advertising.
From this micro-analysis, Germany and Italy emerged as most promising. They were however so close to eachother that the author decided to supplement this analysis with semi-structured expert interviews in these markets.

It follows from this analysis, supplemented by expert insights, that Germany is the most promising market for Revolt to enter at this moment in time.

To further aid Revolt in it’s internationalisation efforts the author has developed a market entry playbook. This playbook is a manual, or blueprint, for entering new international markets. It covers the necessary

steps for researching, entering and validating a market. It also covers setting the right KPIs, how to monitor these and how to make the right decisions based on these numbers.
It is divided into three phases, with a gate moment at the end of each stage.

Futhermore, the author has developed a market data dashboard that Revolt can use to analyse markets on a macro level. This dashboard is also used in the market selection in this thesis.

Lastly, the author provides recommendations for Revolt, both in general and related specifically to the internationalisation efforts. The general recommendations are based on the internal and external analysis and provide pointers on how to capitalise on strengts and opportunities, and mitigate weaknesses and threats. The recommendations specific to internationalisation follow from the desk research and interviews carried out by the author and provide insights on the process of market analysis, selection and entry.

Limitations and further research

The context- and market analysis executed in this research is company- and context specific and therefore not directly applicable outside the scope of this thesis. The ability to use the market data dashboard and the market entry playbook in a different context has to be researched.

For the market analysis the author was dependent on third party data sources, some of them which are updated infrequently. Since the EV market is developing rapidly the accuracy of these data points is not proven.

While the drafting of the market selection factors is based on throough desk research, the selection of market factors is partly based on choices of Revolt. These decisions might be influenced by personal beliefs and biases which impacts the objectivity of the market analysis.

The validation of the product-market fit is limited to three qualitative interviews supplemented to a quantitative research. This limited sample size and the resulting lack of qualitative insights makes it difficult to say anything meaningful about the product-market fit in the German market.

Due to the difficulties in reaching potential customers and partners in the German market, the validation of the market entry playbook is based on assumptions. Actually executing the market entry using the playbook will give valuable insights in the assumptions behind the playbook and will (in)validate it’s value.

Reflection

Personal ambitions

At the start of this graduation project I formulated two areas in which I wanted to improve myself. These were managing a multi-stakeholder project and designing in a business-to-business (B2B) context.

The second learning area is researching and designing for a B2B company. The intricacy of B2B is that, in addition to the end user there is a whole organisation in between you and the end user that is responsible for buying the product. In this organisation there are indiviudals with individual needs, problems and barriers that may or may not conflict with the needs and problems of the organisation or the end user.
During this project I have seen how the conflicts between these needs and problems can lead to lost sales, delays and unhappy customers or end users. Especially in a model where the service Revolt provides is dependent on several logistical partners, the extra communication needed amplifies these problems.
But I have also seen that if you are able to align these needs and problems you can create synergies that will do exactly the opposite; increase sales, shorten lead times and exceed expectations. The challenge we face as designers is in uncovering and aligning these needs and finding actionable solutions that will meet these.

Learning objectives that I did not formulate at the start of this project, but where I did learn a lot were the following; introducing business sense into creative methods, using quantitative data in a design process and how to deal with the rapid development of a start-up.

A lot changes quickly in a startup. This is fun and exiting, but in a project that spans six months it is difficult to keep up with these developments. The company analysis done at the start had to be revised multiple times. It is therefore important to keep research, development and design efforts fast-paced and feedback loops small. This will prevent diving into a subject that might not be relevant in a month or two.

On a more personal note

I have come to realize that working on only one project for an extended period does not work for me. For me it resulted in a tunnel vision, sometimes lacking inspiration and energy. To combat this I picked up a personal side project and from time to time helped out Revolt's marketing department with small tasks. But since the graduation project is so substantial I found it challenging to find both the time and mental energy to switch between these tasks.

Something else that surprised me is the following: at first I was looking forward to doing such an extensive project on my own, but I quickly realised I missed the discussions, talks and critique from peers that are working on the same thing. I was able to work at Revolt's office so I did not lack social contact, regular input and inspiration, but I realised how valuable it is to be able to discuss something with someone who has a similar background.

One area that I have identified as requiring improvement is my approach to soliciting feedback and input. Until recently, I only scheduled coach meetings when I felt the need for them. However, I now recognize the importance of setting a structured meeting cadence, such as every week or two, to ensure that I have concrete results to discuss.

Moreover, I have learned that life can gets in the way, and it is okay to not always be able to meet our expectations. Blaming yourself for these setbacks is unproductive, and it is important to manage them in the best way possible. This involves communicating with those around us, particularly when we have obligations or expectations to fulfill.

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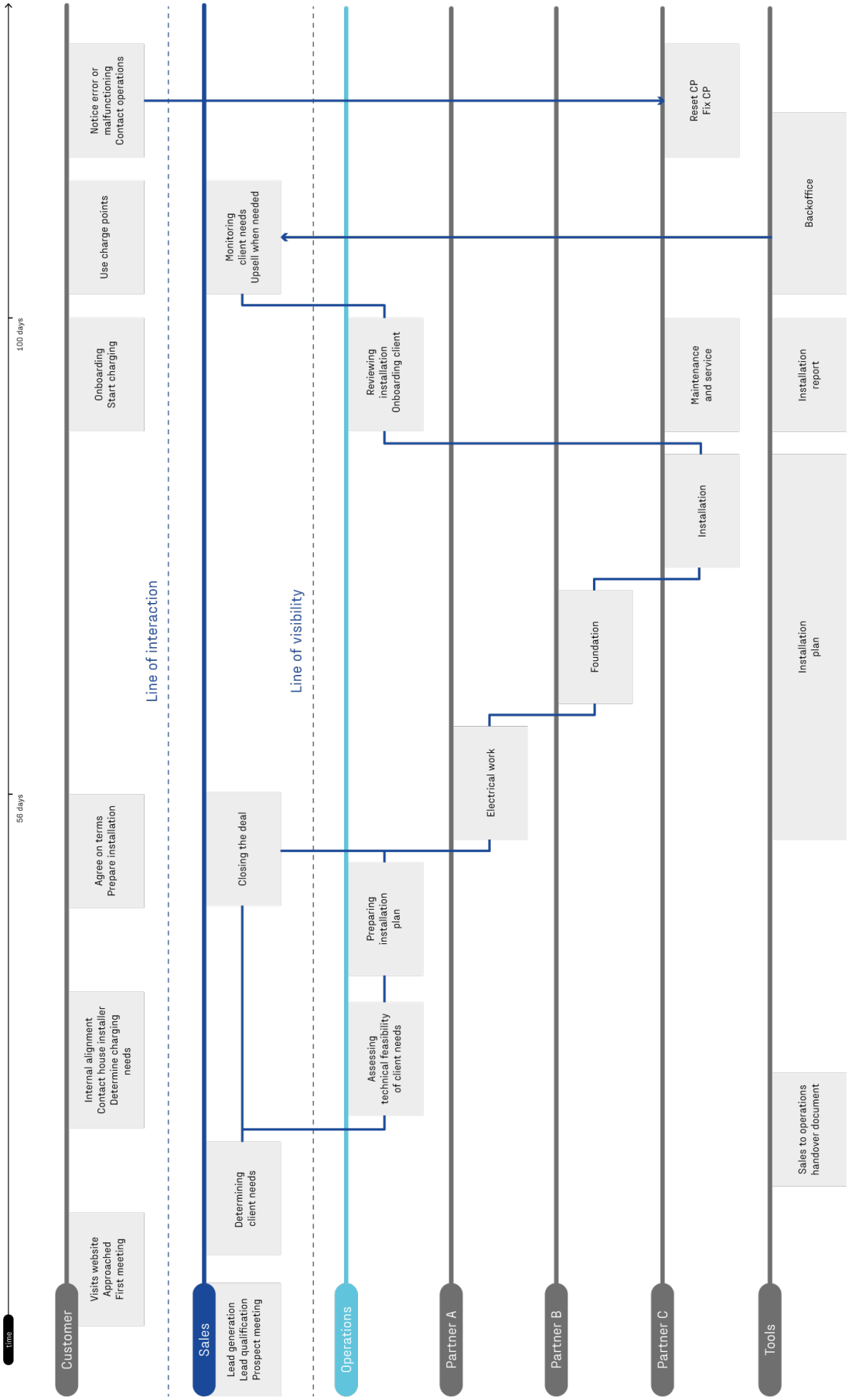
Appendix A - Service blueprint



Appendix B - Smart charging technologies

The most influential development in EV charging is smart charging and its benefits. Smart charging in its simplest form is the ability to influence the charging pattern of the EV. This can have several benefits which are explained in short in the next section.

Dynamic load balancing

Dynamic load balancing (DLB) balances energy use between multiple charge points to use existing infrastructure as efficient as possible. An example: Car A needs to leave first, so first provide most power to car A. As soon as car A is fully charged, provide full power to car B

Adaptive load management

Adaptive load management is similar to dynamic load balancing, but takes into account the energy use of the building as well. It maximises the use of available energy without overloading the system. When available, it also takes account the local production of renewables, eg. energy from PV cells.
An example: at a certain time the building uses a lot of energy (AC, heating, lighting). To not overload the system, the power to the charge points will be reduced until more power is available.

Smart charging for DSO

Smart charging for distribution system operators (DSO) looks beyond a single building and instead takes into account the energy use at the local neighbourhood grid. Reducing power when needed can prevent overloading the grid while charging at times of lower energy prices (usually when demand is low) eventually saves the EV driver money. This avoids the need for expensive grid reinforcements or expansion.

Energy markets

Looking at an even bigger picture the energy markets come into play. By adapting the charging cycles of EVs to the electricity price and the availability of renewable energy on local and regional scale, EV charging will become cheaper and more sustainable.

Balancing services

Another way of making EV charging cheaper is by assisting the transmission system operators (TSO) in balancing the market. TSOs need to ensure that the frequency of the energy grid is stable (50Hz). When demand is high, the frequency increases. When this happens, players can sell their energy capacity to the TSOs. By collectively lowering the power at which EVs in a certain pool charge, you take away stress from the grid and earn money by doing so.

Vehicle to grid & V2X

The last important development is vehicle-to-grid or vehicle-to-everything charging. EVs are basically big batteries. By enabling bi-directional charging, EVs can be used to temporarily store energy which can be delivered back to the grid, or used to power your home. V2X can be of use in all previous mentioned developments.

Appendix C - Market analysis factors with sources

	Source
GDP per capita	https://ec.europa.eu/eurostat/databrowser/view/NAMA_10_PC/default/table?lang=en
Employment rate	https://ec.europa.eu/eurostat/databrowser/view/LFSA_ERGAN/default/table?lang=en
Technology investments	https://ec.europa.eu/eurostat/databrowser/view/RD_E_GERDTOT/default/table?lang=en
Amount of EVs in 2030	https://www.statista.com/outlook/mmo/electric-vehicles/worldwide
Amount of current ICE cars	https://www.acea.auto/publication/report-vehicles-in-use-europe-2022/
Ease of doing business index	https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402.pdf
EV share of sales 2021	https://www.iea.org/reports/global-ev-outlook-2022
EV market growth	https://www.statista.com/outlook/mmo/electric-vehicles/worldwide
Charge points per EV	https://www.iea.org/reports/global-ev-outlook-2022
Commute by car	https://ec.europa.eu/eurostat/databrowser/view/URB_PERCEP$DV_981/default/table?lang=en
Share of public transport use	https://ec.europa.eu/eurostat/databrowser/view/URB_CTRAN/default/table?lang=en&category=urb.urb_cgc
Energy grid stability	https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402.pdf
Available energy	https://ec.europa.eu/eurostat/databrowser/view/ten00121/default/table?lang=en
DOOH spending	https://iabeurope.eu/wp-content/uploads/2020/02/IAB-Europe_ETF_DOOH_25022020_FINAL3.pdf
Stock of foreign investment	https://ec.europa.eu/eurostat/databrowser/view/BOP_FDI6_POS$DEFAULTVIEW/default/table
Ease of trade	https://ec.europa.eu/eurostat/databrowser/view/EXT_LT_INTRATRD__custom_3371548/default/table
Geographic proximity	https://knoema.com/CEPGDD2019/the-geographical-distance-geodist-database
Cultural similarities	https://geerthofstede.com/research-and-vsm/dimension-data-matrix/
Language similarities	https://ec.europa.eu/eurostat/databrowser/view/EDUC_UOE_LANG01__custom_3400197/default/table
Secondary information availability	https://webggc.oclc.org/cbs/DB=2.37/SET=4/TTL=1//CMD?ACT=SRCHA&IKT=1016&SRT=RLV&TRM=belgie&LNG=NE
Immigration	https://ec.europa.eu/eurostat/databrowser/view/lfst_rimgpcga/default/table?lang=en
Human development index	https://hdr.undp.org/data-center/human-development-index#/indicies/HDI
Corruption index	https://www.transparency.org/en/cpi/2022

Appendix D - Market ranking

Normal ranking		All factors (- Nordics)		Growth potential	
Iceland	1	Germany	1	Austria	1
Sweden	2	Switzerland	2	Ireland	2
Germany	3	Ireland	3	Portugal	3
Denmark	4	United Kingdom	4	Finland	4
Finland	5	France	5	Poland	5
Norway	6	Lithuania	6	Italy	6
Switzerland	7	Austria	7	Lithuania	7
Ireland	8	Estonia	8	Switzerland	8
Austria	9	Belgium	9	Latvia	9
United Kingdom	10	Portugal	10	Slovenia	10
Belgium	11	Poland	11	Spain	11
Italy	12	Spain	12	Denmark	12
Poland	13	Luxembourg	13	Estonia	13
Portugal	14	Italy	14	Belgium	14
France	15	Cyprus	15	Sweden	15
Lithuania	16	Czechia	16	Romania	16
Estonia	17	Latvia	17	Germany	17
Luxembourg	18	Malta	18	Bulgaria	18
Cyprus	19	Slovenia	19	Malta	19
Spain	20	Slovakia	20	Luxembourg	20
Czechia	21	Greece	21	Hungary	21
Latvia	22	Hungary	22	Czechia	22
Malta	23	Romania	23	Slovakia	23
Slovenia	24	Croatia	24	Cyprus	24
Slovakia	25	Bulgaria	25	United Kingdom	25
Greece	26	Denmark	26	France	26
Hungary	27	Finland	27	Greece	27
Romania	28	Iceland	28	Norway	28
Croatia	29	Norway	29	Croatia	29
Bulgaria	30	Sweden	30	Iceland	30

Appendix E - Micro-level research results

Austria

Government goals
100% BEV share of sales in 2030

Incentives
Several EV purchase and use incentives
40% subsidy for installation of charge points

Legislation
-

19%	EV share of total sales
25.04%	EV market CAGR till 2027
75	Ease of doing business
88.4%	Necessary CAGR # CP till 2025
39.8%	Necessary CAGR # CP till 2030
Low	Level of competition

revolt

Belgium

Government goals
Install 30,000 extra charging points by 2025
20% BEV sales by 2025

Incentives
VAT reduction up to 200% for the installation of charging points.

Legislation
Given the complex institutional context in Belgium there is no clear overarching legislation

19.6%	EV share of total sales
19.02%	EV market CAGR till 2027
75	Ease of doing business
109.5%	Necessary CAGR # CP till 2025
45.7%	Necessary CAGR # CP till 2030
Medium	Level of competition

revolt

Germany

Government goals
1 million charging points in 2030
10 million EVs in 2030

Incentives
GHG quota
€900 for purchase & installation CP

Legislation
Charge points need a MDI certification
Open data about location & availability
Open roaming
Public charge points need a payment terminal

20.2%	EV share of total sales
22.77%	EV market CAGR till 2027
79.7	Ease of doing business
123%	Necessary CAGR # CP till 2025
50%	Necessary CAGR # CP till 2030
Medium	Level of competition

revolt

Italy

Government goals
1 million charging points in 2030
6 million EVs in 2030

Incentives
€5000 for purchase of EV

Legislation
Only DSOs are allowed to directly sell electricity, i.e. are allowed to apply a direct €/kWh price to EV customers

8.3%	EV share of total sales
24.39%	EV market CAGR till 2027
72.9	Ease of doing business
156%	Necessary CAGR # CP till 2025
59%	Necessary CAGR # CP till 2030
Low	Level of competition

revolt

Poland

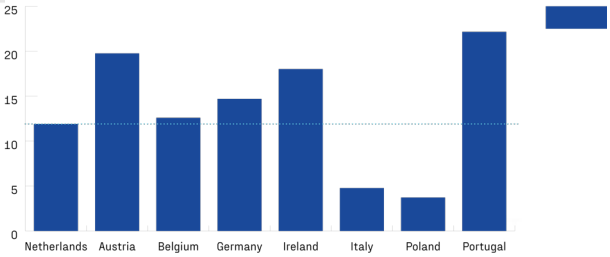
Government goals
1 million EVs in passenger LDV stock by 2025
50% share of public institution fleet by 2025

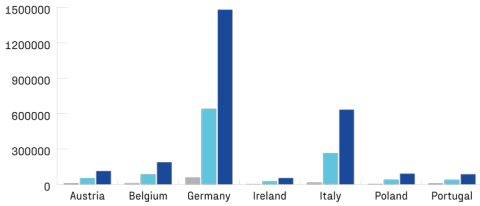
Incentives
€4000 for purchase of EV
25% grant for costs of charging infra

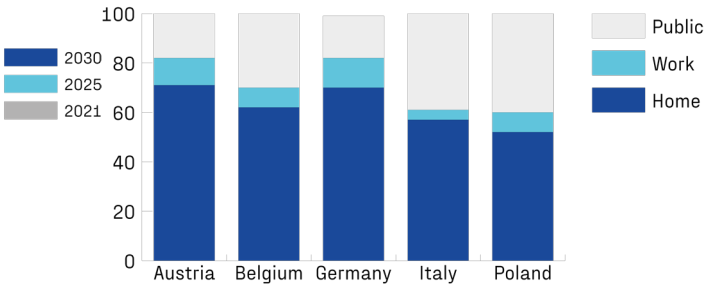
Legislation
Obligation to provide energy infrastructure in buildings and connection capacity for charging stations

4.7%	EV share of total sales
21.82%	EV market CAGR till 2027
76.4	Ease of doing business
136.4%	Necessary CAGR # CP till 2025
53.6%	Necessary CAGR # CP till 2030
High	Level of competition

revolt







Appendix F - Target group social media ads

Facility management consultant
Facility Coordinator
Facility Advisor
Facility Manager
Head of Purchasing
Head of Reception & Facility
Purchaser
Management Assistant Director
Property Manager
Facility Employee
Project Manager
Proposal Manager
Senior Operations Advisor
Senior Procurement Advisor
Commercial Manager
Commercial Director
Director of Finance

Appendix G - Approved project brief

Personal Project Brief - IDE Master Graduation

TU Delft

An international growth strategy for an EV charging solution startup — project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 12 - 09 - 2022 — 17 - 02 - 2023 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Revolt is an Amsterdam-based startup that aims to accelerate the transition towards sustainable mobility by providing the mobility of the future with clean, green and sustainable energy. Jeroen van de Ven and Rutger Bosch founded the company in the start of 2021 and they currently have a team of 12 that work on the product-service delivery and development, sales and growth of the company.

Revolt offers a product-service solution for charging electric vehicles (EVs). They noticed that companies wanted to provide their employees, guests and visitors with EV charging. There is however one big barrier that keeps these companies from being able to provide this; the investments for EV charging infrastructure are simply too big. So instead of customers needing to invest in expensive EV charging stations, Revolt offers these charging stations trough a subscription model. The complete charging solution consists of a charging station, its installation and a service and maintenance contract.

The Hub, one of the charging stations Revolt offers (see image 1), has a built-in display that can be used for advertisement purposes. By selling this advertisement space to third parties, the subscription costs of the Hub can go down to €0,- per month, further lowering the barrier to providing EV charging.

By taking away the investment and hassle of installing EV charging, Revolt enables more companies to provide EV charging to their employees, customers and guests. With this they aim to accellerate the transition to sustainable mobility.

Revolt is currently operating in the Netherlands. They are in contact with potential clients in for example Italy. However, they currently do not know if and how they can service clients that are abroad, and which markets are attractive to enter.

To be able to provide their service, Revolt works with several partners, from manufacturing and installation to management of the charging network. This further complicates international growth.

Because of this, and to increase the scale at which Revolt operates it is necessary to develop an international expansion strategy for Revolt.

Rutger Bosch is my company mentor and first contact point within the company.

space available for images / figures on next page

Personal Project Brief - IDE Master Graduation

TU Delft

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

"How can Revolt grow its business within the European EV charging infrastructure market in the next three years?"

Revolt is ready to explore expanding internationally. They currently do not know if and how they can deliver their service outside the Netherlands. They do not know how to segment international growth, how to select new segments to enter and how to enter these segments.

The topics that need to be addressed are:
- What is the current status quo of Revolt? (customers, stakeholders, partners, business model, brand, culture, vision)
- What is needed to deliver their service in a new market? (partners, logistics, in/out house, current infrastructure)
- How to segment new markets (cities, states, countries, stakeholders, partners)
- How to rate attractiveness of new segments
- How to choose the next market segment to enter
- How to enter this market (GTM strategy: game plan for reaching and serving the right customers in the right markets, through the right channels, with the right products and the right value proposition)

The scope of international expansion will be limited to countries within the EU + Norway, Iceland, Switzerland and the UK.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

My goal is to design a framework for international expansion. It incorporates internal and external factors and guides the Revolt team through prioritisation, planning and execution of international expansion. I will then use this framework to design a growth strategy roadmap and elements of the GTM strategy for a selected segment. To give structure to the project and to communicate the process to stakeholders I will use an adapted version of the double diamond (1).

Discover:
1. Internal research: interviews and document analysis. Determine the status quo, culture, strenghts, weaknesses. What is the current business model? How does Revolt deliver their service?
   Tools: semi-structured interviews, service blueprint
2. Structured literature research on international growth and go-to-market strategies.
3. External research: market analysis, competitive analysis, rules & regulations of segments within EU, including customer research. Tools: user research, observations, semi-structured interviews.

Define:
4. Co-creating method/framework for prioritisation of market segments. Tools: creative facilitation, future visioning

Develop:
5. Developing roadmap for (international) growth. Tools: Roadmapping, tech scouting

Deliver:
6. Developing elements of GTM strategy, e.g. value proposition, positioning, marketing mix. Tools: Contrarian branding, SWOT.

Final deliverable: framework and roadmap for international expansion supported by tactical go-to-market elements for one new market segment.

Initials & Name JBMT Janssens Student number 4535332

Title of Project An international growth strategy for an EV charging solution startup

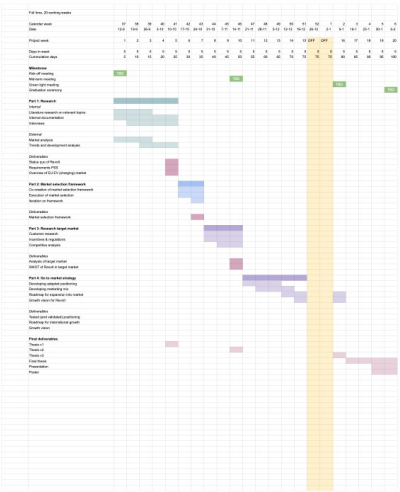
Personal Project Brief - IDE Master Graduation

TU Delft

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 12 - 9 - 2022 17 - 2 - 2023 end date



Initials & Name JBMT Janssens Student number 4535332

Title of Project An international growth strategy for an EV charging solution startup

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

I am interested in the sustainable mobility challenge, something Revolt is actively working on.
With this project I can combine my interests in entrepreneurship, the business design and strategy by design.
During an internship I have gained experience as a design consultant and I am interested in seeing the other side of the coin: working for a company with a specific product-service system.
The fact that Revolt is still a small company allows me to be in touch with all the different roles and levels within the company and to make impact.

Competencies to prove:
Acquiring and analyzing qualitative data
Incorporating business metrics in (creative) design methods
Multi-stakeholder project management
Applying creative methodologies in a business context

Competencies to improve
Multi-stakeholder project management as the actual project manager
Acquiring and analyzing quantitative data
Developing a (international growth) strategy
Getting a business-sense

Personal Ambitions

- multi-stakeholder project management (as the actual manager of the project)
- B2B business design (how to design for intermediate users i.e. the company buying the product)

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

(1) https://www.designcouncil.org.uk/our-work/news-opinion/double-diamond-15-years/

in collaboration with

revolt