

A Work Project, presented as part of the requirements for the Award of a Master Degree in Management from the NOVA – School of Business and Economics.

GO-TO-MARKET STRATEGY FOR MOV.E

HOW THE PORTUGUESE START-UP THAT WANTS TO DISRUPT THE WAY PEOPLE CHARGE THEIR ELECTRONIC VEHICLES CAN BEST POSSIBLY REACH ITS TARGET CUSTOMERS.

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Abstract

While the electric vehicle market is growing more than ever, it is expected to slow down in the 2030s due to one major issue that is capable of decelerating its current strong growth and expansion – charging infrastructure constraints. They arise due to the fact that the existing electricity grid will not be able to accommodate the increasing demand in high density areas where charging opportunities are limited and the number of electric vehicles high. mov.e has created a digital sharing platform, that provides the base for the first collective electric vehicle charging system, and is connected to its IoT smart plugs, which simply replace existing standard sockets. After having been able to work on its idea with industry experts as part of an intensive 10-week incubation program in Silicon Valley, the team behind mov.e has not only received enough positive feedback that its solution is in high demand and technically proving its potential to speed up the electric mobility revolution, but has also decided on the business model behind its idea. It is now at the stage of finalizing its prototype. Until then, mov.e needs to figure out how it can best penetrate the market and how it can effectively deliver its solution to the end customer to eventually disrupt the way of charging electric vehicles and to provide the ground for an electric vehicle full-scale adoption for the years ahead.

Keywords: go-to-market strategy, marketing, electric vehicles, electric mobility revolution, charging infrastructure

Go-To-Market Strategy for mov.e

Case Study

“A start-up that could positively impact the lives of a billion people worldwide in the next 10 years.”

- Global Impact Challenge 2018, Cascais, Portugal, February 2018

That was the jury’s reaction when mov.e won the Portuguese edition of the Global Impact Challenge (GIC) and as a prize sent Pedro Garcia to Singularity University (SU) in Silicon Valley, where he represented the team of mov.e in an intensive 10-week program, which provides viable start-ups a platform, network, and guidance to empower them to validate their ideas, to build a team, and to experiment and prototype their MVP. After their accomplishment at the GIC, this has been the perfect opportunity for the young Portuguese start-up to present its idea to a range of professionals, develop it further, and engage with and learn from mentors and key experts. Although the company has now finally determined its business model and has clarified the overall structure of how it wants to do business, new challenges are constantly approaching and the team behind mov.e, José Toscano, CEO, Pedro Garcia, CTO, and Pedro Silva, COO, needs to make critical decisions about how it wants to reach its target customers, which will massively impact the company’s future. It needs to figure out in which market it should first launch its solution, what marketing measures it has to take in order to target the right customers and communicate the right message, but also determine its pricing model which will significantly impact the company’s revenue streams. And there are still tons of other questions that raise concerns among the young company. The idea behind the company is simple – mov.e set itself the task to take advantage of the existing electricity infrastructure to digitally transform the way of charging electric vehicles (EV) anytime and everywhere at a competitive cost. The idea emerged during the course of the founders’ MBA program and as a result of the ongoing mobility revolution, which is

expected to either double the current power capacity or requires it to become more efficient in order to meet the increased energy demand that comes with the growing number of EVs.

After having won the GIC and having been able to work on its idea with industry experts, as well as having won the Porsche Accelerator competition in Madrid, participating in several other competitions and events, and being present in the local media, the team behind mov.e has received sufficient positive feedback that its solution is in great demand and has the potential to speed up the electric mobility revolution. During his time at the NASA Research Park, where the SU incubator program took place, Pedro Garcia gained a lot of insights on how to enhance mov.e's initial idea in order to ultimately launch a successful MVP. The team is now at the stage of finalizing its prototype and expects it to be ready by the beginning of the following year. Until then, the team around José Toscano needs to figure out how it can best penetrate the market and how it can effectively deliver its solution to the end customer. How can such a young company disrupt the way people charge their EVs? How should it best possibly communicate the value its solution brings to each stakeholder in comparison to other charging alternatives? These are some of the questions the start-up has to find answers for in order to solve the EV charging dilemma that is ahead of us if there is no significant change in how we charge our EVs today.

“We have teams of people working on electric cars. So, you never know - you may find Virgin competing with the Tesla in the car business as we do in the space business.”

- Richard Branson, Founder Virgin Group

“Electric cars exceed 1 million in Europe as sales soar by more than 40%.”

- The Guardian, August 2018

The Electric Vehicle Market – how future-proof is it?

Today, 55% of the world’s population lives in urban areas, a number that is expected to increase to 68% by 2050.¹ This transition brings along a significant change for cities and suburbs, which will be forced to create sustainable living conditions for their inhabitants. Energy and mobility are considered the underlying forces of this shift and are required to radically adapt in order to keep pace with the demographic and economic growth without increasing congestion and pollution.

One of the industry’s responses to react to these challenges have been electric vehicles. New registrations hit record in 2016 with more than 750,000 sales worldwide while Bloomberg New Energy Finance (BNEF) adds predictions of sales reaching 11 million by 2025 before racing to 30 million by 2030 [Exhibit 1].² There are several key drivers that support this rapid growth: The strongest one is most likely the increased policy support EVs receive. Governments all over the world increasingly offer generous EV purchase incentives to stimulate consumers’ buying behavior to acquire EVs rather than internal combustion engine (ICE) cars. These incentives mainly include tax reductions and exemptions for both private individuals and companies [Exhibit 2], financial support, or free parking and charging. In most European countries EVs are exempted from registration or ownership taxes, while other countries and states, such as China or California, have even designed developing programs (e.g. New Energy Vehicle (China), Zero Emission Vehicle (California)) with the aim of reducing CO₂ emissions stemming from vehicles. Their programs assign each automaker credits and require a certain amount of their total sales to be EVs. In case they do not comply

with the predefined restrictions, they are obliged to purchase additional credits from other manufacturers.

At the same time, tightening fuel regulations due to its impact on the environment and stocks running low on a long-term perspective, require automakers to significantly electrify their future fleet. Projects, such as the New Energy Vehicle program enforced by China, as well as numerous cities that ban ICE cars (i.e. gasoline or diesel) from driving around certain areas as a result of alarming urban air quality or even entire countries [Exhibit 3] already force automakers into faster EV adoption. Automakers, such as VW, Daimler, Nissan, or Volvo, already have aggressive plans in place to electrify their vehicles over the next ten years [Exhibit 4]. By the end of 2017, there were roughly 155 EV models available on the market. This number is said to rise to a total of 289 by 2022.²

In addition to the already mentioned key drivers of the mobility revolution, lithium-ion battery prices should not be overlooked, as they make up the most expensive part of EVs. In 2010, the price for one kilowatt hour was still at \$1,000, while in 2017 it already decreased by 79% to \$209. Prices are even expected to decline further to \$70/kWh by 2030, which would make EVs cheaper compared to gas vehicles, as it is commonly said that the cost of battery needs to fall to below \$150/kWh in order for battery EVs (BEV) to become cost competitive with ICE vehicles [Exhibit 5].³

China is said to lead the transition from ICE to electric cars, with EV sales accounting for almost 50% of the global market from now to 2025 and 39% in 2030 [Exhibit 6].² In 2025, 19% of all passenger vehicles in China are predicted to be EVs. China will be followed by Europe (14%) and the US (11%). Within Europe, Norway has clearly taken a leading role when it comes to EVs. With a market share of 29% it has achieved the most successful deployment of electric cars in terms of market share globally, followed by the Netherlands, (6.4%) and Sweden (3.4%) [Exhibit 7].⁴ By 2040, 55% of all new car sales will be electric, as well as 33% of the entire global fleet.²

The mobility industry is anticipating more disruption as electric vehicles continue to surge forward in top gear. Despite all the promising expectations, the EV market is expected to slow down in the 2030s because of one major issue that is capable of decelerating growth and expansion – *charging infrastructure constraints*, which will be particularly noticeable in high density cities where charging opportunities are limited and the number of EVs high. Many experts name this the *main challenge of the mobility revolution*. The greater reliance on electricity will massively drive up global electricity demand. This will require investments not only in additional electricity generation but also in an electricity grid that is able to distribute the required power efficiently. Once such infrastructure and technology is in place and enables widespread on-street and home charging, highest demand is likely to occur at the existing grid's off-peak times (e.g. overnight). “So why not use and balance the existing grid instead of doubling its current capacity?” is the conclusion to which the team behind mov.e has come and has committed itself to tackle this problem by introducing a more sustainable solution to optimize the usage of the current electricity network.

Alternative Charging Solutions

While the industry has understood that the underlying problem, which might restrict the EV market from growing once it has reached a certain point, are not soaring prices or insufficient demand, but rather an efficient and in place infrastructure. Up to now, most alternative charging solutions do not yet tackle this dilemma. Most governments approach an extension of the existing grid to provide charging stations in public locations, thus unnecessarily expand the existent electricity infrastructure at a significant social cost.

The most common charging solutions currently available cover either public or private areas and are the following:

- › Public areas (i.e. open public parking lots, streets, etc.): governments, automakers, as well as dedicated charging infrastructure providers (e.g. Coulomb, Chargepoint, Tesla, ABB, etc.) have come to agreements to create a publicly available charging network,

as it would be too challenging for utilities to bear the full cost of establishing such infrastructure in addition to the existing one. Real time availability information and data regarding stations is usually made accessible via apps or online databases. There are several global navigation systems in place to deliver this kind of information. Payment methods vary. For the moment, some charging stations are still free. This is primarily for the reason to incentivize people to switch to EVs or to attract customers to retail locations but is likely to change once EV sales grow and it becomes unprofitable to offer such free service. Most current charging options require a membership card which is either linked to a credit card or needs to be charged with a certain amount in order to be able to access charging stations. Direct credit card payments are rare, as payments are usually so small that it would be impractical to be billed through a credit card.

- › Private areas: this is where most EV owners charge their EVs [Exhibit 8].

At home: Even fast charging stations still might take up to 30 minutes to fully charge an EV. Therefore, it makes sense for EV drivers to charge their vehicles once they are at home. According to the U.S. Department of Energy, EV drivers do more than 80% of their charging at home as it is convenient and simple.⁵ Besides, it lets EV owners take advantage of significantly lower electricity prices when charging overnight so that a full charge can cost as little as 0.05-0.06€/km (30 kWh capacity (e.g. Nissan Leaf), range of 105 km (e.g. Nissan Leaf), 0.20€ average kWh price in Europe⁶). A home charger on average costs around 650€. The cost of charging at home is then usually simply added to the regular domestic electricity bill, although some countries, such as Ireland, give away grants for the cost of installing home charging points or offer monthly utility bill rebates. With increasing urbanization, it needs to be taken into consideration that in the near future the majority will not own its own garage or

parking lot to charge its vehicles but rather live in condominiums or other types of shared housing and will thus not have easy access to its own charging points.

At work: Some employers install workplace charging points to incentivize employees to switch to EVs or simply to promote their corporate social responsibility. With people increasingly living in shared housing, charging their EV at work or in other shared parking spaces, other than shared garages or parking lots at home, becomes more and more convenient as this is usually the place where they spent most time other than home. It provides a handy solution for drivers without charging points at their own place. Companies often offer free access throughout working hours.

However, this may create too much demand and ultimately reduces the effectiveness of workplace charging due to overcrowding and too high additional costs for the employer. Thus, many employers now start charging fees to encourage employees to charge at home during off-peak hours, which results in taking some stress off the grid, as well as the employer's bill.

Charging station owners then have to choose which type of charger to install. EV chargers typically fall under Level 1, Level 2, or Level 3 charging stations, each of them distinguishes itself from one another by the voltage and thus charging time.

In either of the above-mentioned solutions a charging station with access to the electricity grid is required. This implies additional investments for governments or distribution system operators (DSO) to build up these extensions. Growing the existing grid by installing public charging points that cost somewhat between €10.000 to €25.000, would result in an immense social deficit with no one-hundred percent guarantee of success [Exhibit 9]. Besides, replicating already in place infrastructure is not in line with the guidelines set by the European Union (EU) to achieve its vision of a sustainable and electricity-driven economy and which propose the optimization of the use of the existing infrastructure to keep costs for energy consumers, governments, and DSOs down.

With the ongoing technology process, new solutions emerge. The most striking ones include battery swapping, wireless charging, lamppost charging, or smart charging, which bills users for electricity based on the time of day it is consumed. Until those solutions are widely accepted, why not take advantage of the existing grid?

mov.e – the company that will disrupt the way we charge our EV?

mov.e was founded in 2017 at MIT Sloan in Boston as an academic project, while its three co-founders were getting their Lisbon MBAs. Although they all come from different technological backgrounds, José Toscano, Pedro Garcia, and Pedro Silva soon realized their common passion for energy and mobility and set themselves the goal to tackle the charging dilemma, which arises due to the uncertainty of sufficient locations to charge EVs in a convenient setting [Exhibit 10]. Their aim was to design a solution that is not only more attractive and sustainable than the existing ones, but first and foremost one that provides the ground for an EV full-scale adoption for the years ahead.

The Beginning

mov.e's initial plan was to create a B2B platform and sell it directly to electricity retailers and have them install mov.e's smart plugs in order for them to take advantage of selling more energy to end consumers without having to expand their existing infrastructure. With that business model, the team behind mov.e participated in its first official pitch at the Porsche Ibérica Accelerator Start Up Day in February 2018 and won to enter the program at the first go. However, as mov.e did not agree with all conditions of the contract, the company declined the prize. Thankfully, because only shortly after they were selected amongst 77 applicants to be one of 8 start-ups to pitch at the final of the Global Impact Challenge 2018 in Cascais, Portugal. Successfully they ended up being one of the two winners and were identified as a start-up that could positively impact the lives of a billion people worldwide in the next 10 years. The prize was a slot in the SU Ventures Incubator Program held at the NASA Research

Park in Silicon Valley which took place from April to May that year. It was there where Pedro Garcia was able to discuss mov.e's business model at that time with experts and professionals and was given advice on how to enhance it and make it more valuable for its target market in order to fulfil the solution's purpose. With all the ideas, insights, input, and guidance Pedro Garcia received over the course of the program, once he returned, he and the rest of the team worked on a new approach how they want to run their new business.

mov.e today

After a lot of brainstorming and elaborations, mov.e has finally come to a conclusion on how it plans to tackle the charging dilemma. The young start-up's innovation relies on a digital energy sharing platform that provides the base for the first collective EV charging system. The platform primarily serves two main stakeholders, both acting in the private area for charging solutions:

- › Electrical charging providers (ECPs): that can be condominiums, companies, universities, or even private individuals that wish to provide a charging solution within their shared parking spaces but are currently discouraged to install them due to the high price and long deployment time of the currently available solutions, which would not pay off for most ECPs.
- › Electric vehicle owners (EVOs): they are looking for a widespread charging solution that is constantly available for them to use in any place at a low cost.

The platform communicates with mov.e's IoT smart plugs, which are installed at the ECPs and which are the underlying distinction to other solutions, as they simply replace existing standard sockets and thus do not require an upgrade of the existing electricity infrastructure. They are wirelessly integrated with mov.e's digital platform and allow remote validation, management, and control of EV charging. mov.e's smart plugs identify the respective EVO and meter his electricity consumption.

The business model behind mov.e is based on a brokerage model, José Toscano and his team acting as a middle man between ECPs and EVOs, thus offering a marketplace for supply and demand and facilitating transactions with their digital platform. While mov.e sells its smart plugs to the ECPs on an annual plan, it charges a fee for each consumed kWh [Exhibit 11]. Once the fee is subtracted from the EVO's payment, the remaining value is transferred to the ECP on a monthly basis, in order for mov.e to have sufficient working capital per month. As a movement towards rising EV adoption is approaching, a high number of new adopters will come from the middle class, the majority mainly parking their cars in shared parking spaces. Therefore, mov.e's solution is a great way supporting this evolution by setting major incentives for both ECPs and EVOs. The great advantages of mov.e's digital platform in connection with its IoT smart plugs are that, first of all they are easy and fast to install and thus overcome one of the major reasons for ECPs not to install charging stations, namely the long deployment time. Besides that, they are far smaller than usual charging stations, hence occupy less space, while at the same time require smaller acquisition and installation expenses and no planning and construction work beforehand, which makes them a lot more attractive to install.

The main incentives for the ECPs to install mov.e's smart plugs and make use of its platform are the fact that they can easily sell more kWh without upgrading the existing grid as the plugs are easy and quick to install. mov.e's platform allows them to easily control and manage their smart plugs, their availability, and the setting of prices per kWh, either by web or mobile.

The list of advantages for EVOs is long. Not only do they benefit from a wide charging network, but also from competitive prices, as they are indexed to residential prices. Besides that, users can easily find charging stations via mov.e's app and can simply pay without the need of credit cards or cash, as everything is organized via mov.e's app.

José Toscano and his team are already working with an intellectual property (IP) consultancy to file an application for a new patent. Its focus lies on mov.e's business processes and some of its technological innovations. With a patent on its solution, the benefit of network externalities, and a first mover advantage, mov.e hopes to capture the market and generate a revenue of 80,000€ within the first year, achieving a growth rate of over 100% for the following years, owing to EVs' expected high sales growth, mov.e's early expansion into other countries, and its organic growth. As the operation of the platform involves high fixed costs and the fact that mov.e expects a contribution margin of 80%, thus anticipating negative cash flows due to an assuming low volume market in the first years, the company plans to break even within four to five years.

Now that the team has figured out the main framework behind its idea, the young company's next milestone is to figure out its go-to-market strategy. It is able to substantially accelerate the time to reach breakeven by avoiding mistakes in the first place through clearly consider what markets to serve, what its target customers actual needs are, how mov.e should position its solutions, or how it should market it.

Go-To-Market Strategy – how to deliver a company's unique value to customers?

In academic terms a go-to-market (GTM) strategy is simply defined as a game plan for reaching and serving the *right* customers in the *right* markets, through the *right* channels, with the *right* products and value proposition.⁷ Once a company has figured out each and every element most qualified for its business, the last steps to complete the GTM strategy are then to decide on what pricing model will provide the highest revenue streams and eventually what marketing strategy it wants to implement to communicate to its potential customers best possibly.

Defining Target Markets

To successfully enter a market, selecting the right markets in the first place is crucial for any winning GTM strategy. Once the right market is chosen, it then depends to a great extent on

the successful implementation of the next steps of the GTM strategy, but if the wrong markets are chosen in the first place, it is basically hopeless. Hence, it is vital for any company, but especially for a young company like mov.e, that is only about to get its business going, to take the time and effort to define and assess the market that offers the best selling opportunities. A high-quality quantitative and qualitative assessment is capable of reducing risks and helping to define and clarify the next steps.

Defining Target Customers

What could be more important than knowing who you want to sell your solution to? Eventually it is the customers who buy a product or service. Thus, it is essential for a company to know who its target customers and most importantly what their specific needs are. In fact, understanding the fundamental needs and the target customers' characteristic buying behavior is the basis of a successful GTM strategy. mov.e has two customer groups to serve, ECPs and EVOs, both having different needs and thus having to be targeted differently.

Company Positioning

Positioning helps a company to establish an identity within the eyes of its customers. What is a company's unique selling proposition and how is it different from that of its competitors? mov.e provides smart plugs that can easily be installed without having to expand the existing grid, compared to other solutions in the market. Furthermore, it benefits from network externalities and offers EVOs charging possibilities everywhere at any time. But is that the only thing that differentiates them from other charging solutions? Once those crucial questions are answered, a company can begin to develop a strategic positioning strategy that will help it to develop a matching advertising message, which sooner or later will translate into market share gains.

Distribution Channels

The variety and complexity of today's sales channels range leaves much room for companies to choose the one best tailored for its needs. Sales channels have evolved into a complicated

part of the GTM strategy, due to the rise of the web, telephone, business partner channels, and many more, all of which need to be used in the right way and most importantly need to be well integrated with one another to deliver a seamless and consistent customer experience. mov.e has a digital platform and thus uses the web as its main distribution channel, but may that limit the start-up's potential in targeting the right customers or reaching relevant markets? In case other channels should be made use of, multi-channel integration requires careful analysis of what each channel should fulfil and how they coordinate and communicate with each other to make them work effectively as a whole.

Pricing Model

Pricing is one of the key elements of every GTM strategy. While it can have an impact on what customers a company aims to target or how it positions itself in the market, it always has an impact on a company's financial success, which eventually needs to be present in order for a company to survive. There are many factors to consider when choosing the right pricing strategy, both short-term and long-term. However, it is best to define the previous steps before developing a pricing strategy because it is crucial to ensure that a company's pricing reflects its value and strengthens its brand. As mov.e wants to provide a low-cost solution that should reach as many people as possible, pricing is capable of sending a strong message to the market.

Marketing

At this point of the GTM strategy a company should have a clear picture of its prospects' requirements, the market it wants to play in, the channels it wants to make use of, how it wants to be positioned, and how it wants to make money. Having a clear idea of each of these aspects now simplifies finding the right marketing strategy. One that shows that a company has understood each of the previous points and that speaks a company's prospects' language and addresses their issues is much more effective in reaching and motivating them than if a company was not aware of who to target, how, or what message needs to be communicated.

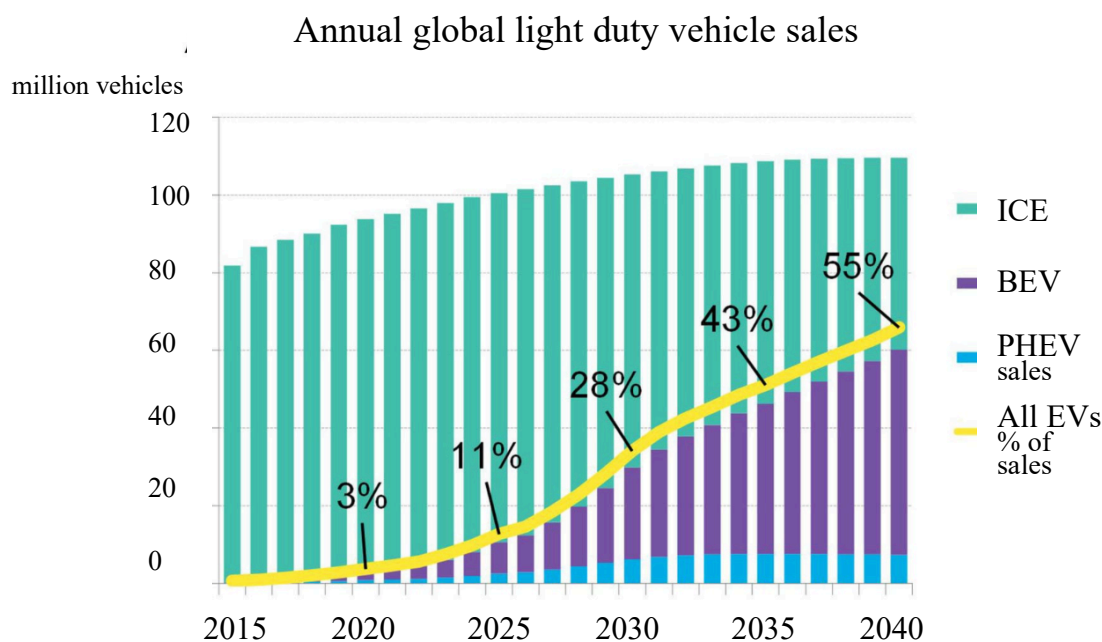
Next steps for mov.e?

mov.e now first wants to grow the “offer side”, namely the ECPs, in order to be capable of offering a vast charging network to its other customer group, the electric vehicle owners. In order to do that successfully, José Toscano, Pedro Garcia, and Pedro Silva first need to finalize their prototype and have thus partnered up with Altice, Portugal’s leading telecommunications and multimedia operator, and the Instituto Superior Técnico for the purpose of gaining more expertise and resources, as well as with Nova Business School, the Cascais Municipality and UVE (the Portuguese Electric Vehicle Association) to implement a pilot project in order to prove the concept’s feasibility and at the same time build awareness among crucial potential customers (ECPs and EVOs). Once the prototype is in place, the next critical step at such early stage is mov.e’s GTM strategy, which needs to deliver a comprehensive and structured plan, created to bring about maximum market success. This is key to long-term success and is crucial for a company like mov.e, which wants to positively impact the lives of a billion people worldwide.

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Exhibit 1: Annual global light duty vehicle sales 2015 – 2040



ICE (internal combustion engine), BEV (battery electric vehicle), PHEV (plug-in hybrid electric vehicle)

Source: Bloomberg New Energy Finance

Exhibit 2: Overview on tax incentives for electric vehicles in the European Union

Austria	- EV are exempt from fuel consumption/pollution tax, ownership tax, company car tax, and zero-CO ₂ emission cars are even granted a deduction of VAT
Belgium	- EV pay lowest rate of tax - In Brussel financial incentives apply to companies' electric, hybrid, or fuel-cell vehicles - Deductibility rate from corporate income of expenses related to the use of company cars is 120% for zero-emission vehicles
Denmark	- EV pay only 40% of registration tax (2017); will be gradually increased to 65% in 2018, 90% in 2019 and 100% in 2020 - Hydrogen and fuel cell powered vehicles are exempt from registration tax until end of 2020
Finland	- Pure EV pay minimum level of CO ₂ based registration tax
France	- Regions have option to provide exemption from registration tax (either total or 50%) - EV exempt from tax on company cars - Incentive scheme: extra €4,000 for switching from >10 year diesel vehicle for new BEV (or €2,500 in case of a PHEV)
Germany	- EV are exempt from annual circulation tax for a period of ten years from date of first registration. - Environmental bonus of €4,000 for pure electric and fuel-cell vehicles and €3,000 for PHEV and range-extended EVs
Ireland	- EVs qualify for purchase tax reliefs of €5,000 until 2021. - EVs and PHEVs entitle buyer a grant of up to €5,000 until 2021 for EVs and 2018 for PHEVs - EVs pay minimum rate of road tax (€120)
Italy	- EVs are exempt from ownership tax for a period of five years from first date of registration; afterwards they benefit from a 75% reduction

Luxembourg	<ul style="list-style-type: none"> - EV and fuel cell vehicles benefit from tax allowance on registration fee of €5,000. - EVs pay minimum rate of ownership tax. - Pure electric and hydrogen cars pay lowest tax on benefit in kind for private use of a company car
Netherlands	<ul style="list-style-type: none"> - Zero emission cars are exempt from paying registration tax and passenger zero emission cars are exempt from motor vehicle tax until 2020 - Zero emission cars pay lowest percentage (4%) of income tax on private use of company cars
Portugal	<ul style="list-style-type: none"> - VAT is deductible for EVs when acquisition costs are below €62,000, for PHEV when acquisition costs are below €50,000 - Pure EV are exempt from registration tax; PHEV with all-electric mode u to 25km benefit from a 75% reduction
Spain	<ul style="list-style-type: none"> - Main city councils (e.g. Madrid, Barcelona, Zaragoza, Valencia, etc.) reduce ownership tax for EV and fuel-efficient vehicles by 75%
Sweden	<ul style="list-style-type: none"> - ‘Climate Bonus’ available for purchase of new vehicles with CO₂ emissions of maximum 60g/km; about SEK 60,000 (~ €5,600) - EVs and PHEVs are exempt from ownership tax for five years; 40% reduction is applied on company car taxation for EVs and PHEVs
UK	<ul style="list-style-type: none"> - From April 2018 to March 2021 cars that emit less than 50g/km qualify for 100% first year writing down allowances; zero emission vehicles attract a zero rate of vehicle excise duty - Ultra-low emission and EVs pay reduced company car tax

Source: European Automobile Manufacturers Association, 2018

Exhibit 3: Countries that plan to ban internal combustion engine (ICE) cars

Countries planning to ban sales of new gasoline and diesel cars

Country	2020	2025	2030	2035	2040
China	Shaded				
France	Shaded				
Germany	Shaded				
India	Shaded				
Netherlands	Shaded				
Norway					
United Kingdom	Shaded				

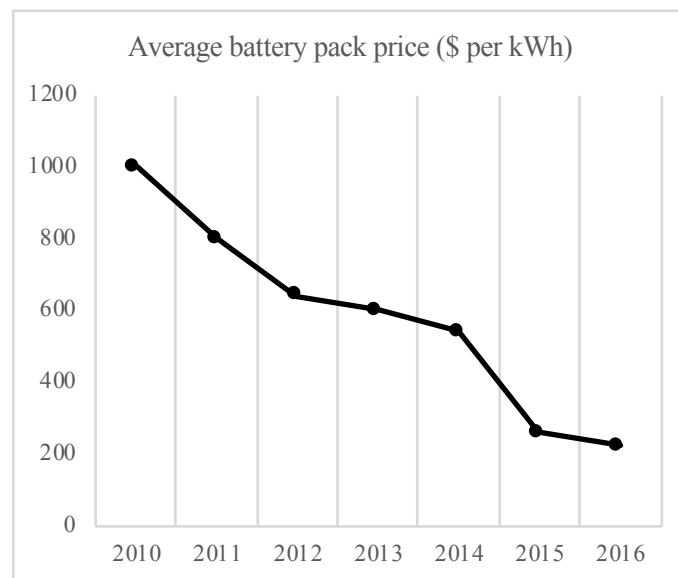
Exhibit 4: List of OEMs' announcements on electric car ambitions, as of April 2017

OEM	Announcement
BMW	100,000 EV sales in 2017 and 15-25% of the BMW Group's sales by 2025
Chevrolet (GM)	30,000 annual EV sales by 2017
Chinese OEMs¹	4.52 million annual EV sales by 2020
Daimler	100,000 annual EV sales by 2020
Ford	13 new EV models by 2020
Honda	2/3 of sales by 2030 to be electrified vehicles (including hybrids, PHEVs, BEVs, and fuel cell EVs)
Renault-Nissan	1.5 million cumulative sales of EV by 2020
Tesla	500,000 annual EV sales by 2018 1 million annual EV sales by 2020
VW	2-3 million annual EV sales by 2025
Volvo	1 million cumulative EV sales by 2025

¹ include BYD, BJEV-BAIC Changzhou factory, BJEV-BAIC Qingdao factory, JAC Motors, SAIC Motor, Great Wall Motor, GEELY Auto Yiwu factory, GEELY Auto Hangzhou factory, GEELY Auto Nanchong factory, Chery New Energy, Changan Automobile, GAC Group, Jiangling Motors, Lifan Auto, MIN AN Auto, Wanxiang Group, YUDO Auto, Chongqing Sokan Industrial Group, ZTE, National Electric Vehicle, LeSEE, NextEV, Chehejia, SINGULATO Motors, Ai Chi Yi Wei and WM Motor

Source: Global EV Outlook 2017. (2017). International Energy Agency.

Exhibit 5: Average battery pack price (\$ per kWh)



Source: Bloomberg New

Energy Finance, 2018

Exhibit 6: Share of the global EV market by 2030

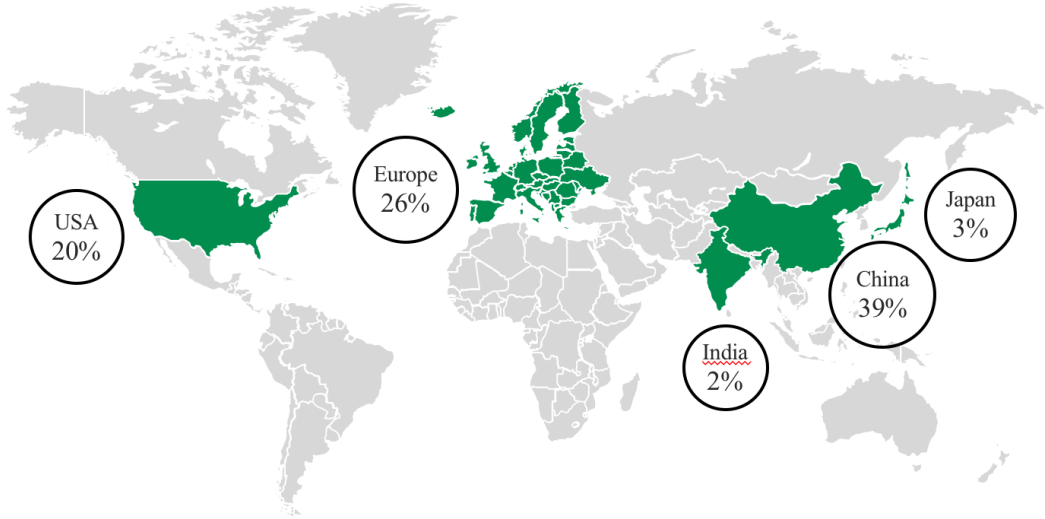
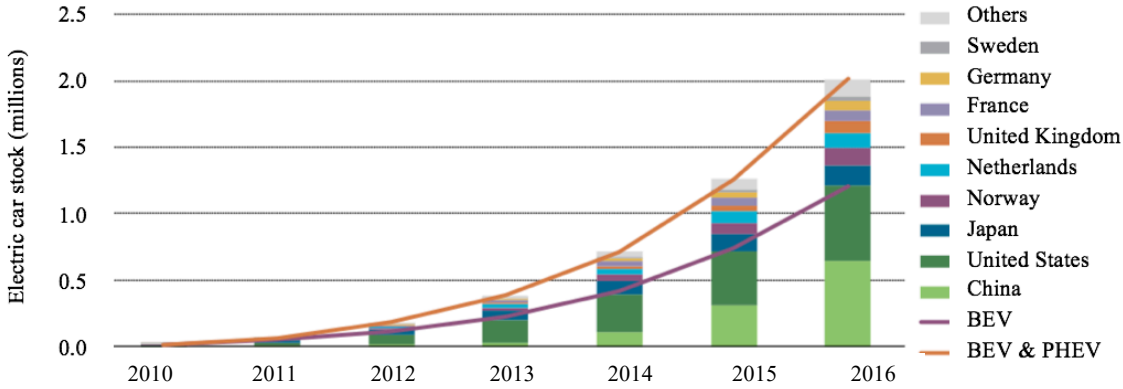
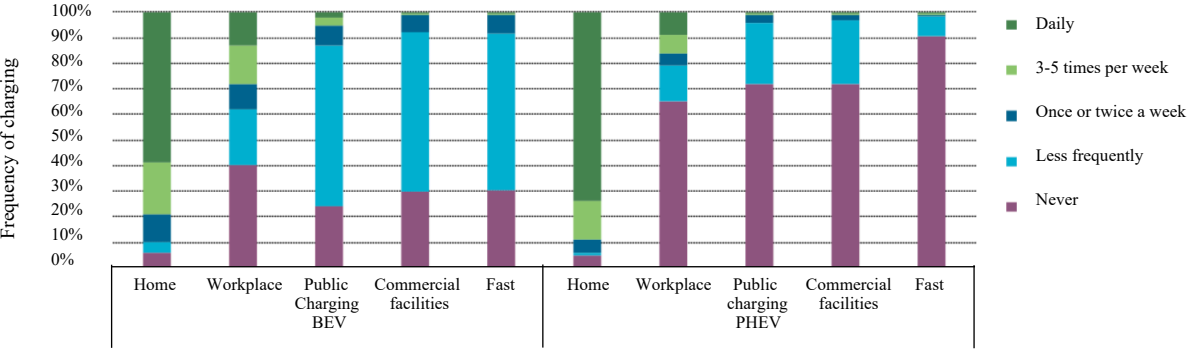


Exhibit 7: Evolution of the global electric car stock, 2010-2016



Source: Global EV Outlook 2017. (2017). International Energy Agency.

Exhibit 8: Charging habits for a sample of Norwegian electric car users, 2016



Source: Global EV Outlook 2017. (2017). International Energy Agency.

Exhibit 9: Approximate costs of Level 2 and fast charging stations from selected major government charging infrastructure programs

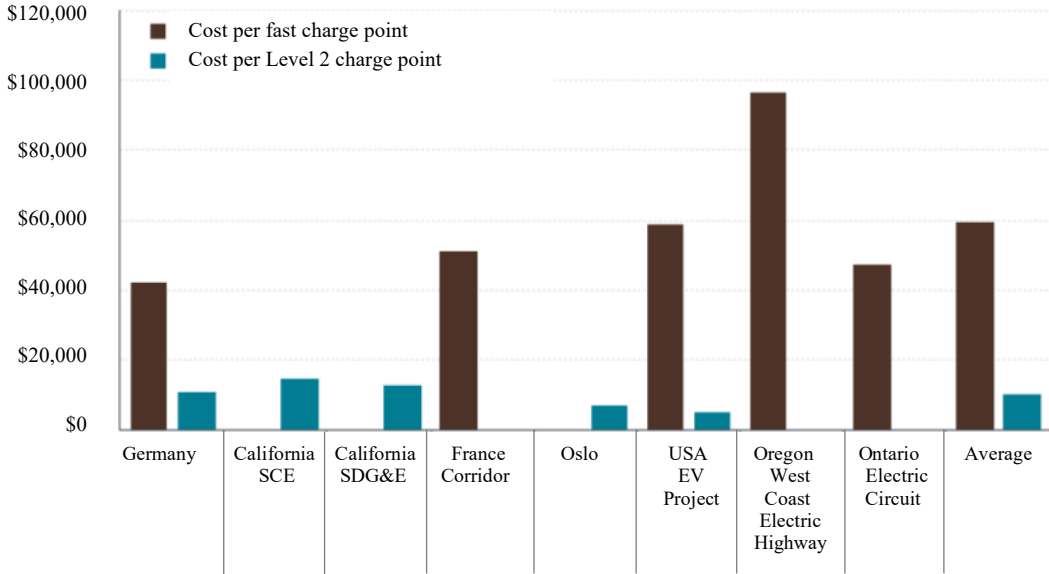


Exhibit 10: Founders' CVs

José Toscano

Experience

<i>2017 – present</i>	CEO & Co-Founder mov.e, Lisbon, Portugal
<i>2017</i>	Business Development Advisor Aenergy (GE Partner), Lisbon, Portugal Billion \$ energy EPC project business development. Up- and downstream value chain configuration.
<i>2017</i>	Operational and IT Business Consultant PSA International, Sines, Portugal
<i>2014 - 2016</i>	EPC Project Manager & Designer MHWirth, Oil & Gas, Kristiansand, Norway Offshore EPC projects for the Norwegian sector. Multi customer project handler and budget controller. Global sourcing & procurement.
<i>2012 - 2014</i>	Technology & Innovation Business Consultant Aker Solutions, Oil & Gas, Kristiansand, Norway Offshore R&D projects. Concept & technical sales. Technical leader.
<i>2002 - 2012</i>	Technical Manager Siemens Energy, Lisbon, Portugal Team manager. R&D project manager. Lean production processes. Global sourcing & procurement negotiation.

Education

<i>2017</i>	The Lisbon MBA – MIT Sloan Católica Nova, Lisbon, Portugal & Boston, USA
<i>2009</i>	Executive Master in Sustainable Energy Systems – MIT IST ISEG, Lisbon, Portugal & Boston, USA
<i>2007</i>	Post-Graduation as Senior Occupational Health and Safety Officer – ISQ, Lisbon, Portugal
<i>2001</i>	Mechanical Engineer – IST University, Lisbon Portugal

Pedro Garcia

Experience

2017 – present

CTO & Co-Founder

mov.e, Lisbon, Portugal

2017

Lisbon MBA Summer Internship

EDP, Lisbon, Portugal

Study and analyze the usage of blockchain technology in the energy sector.

2015 - 2016

Account Manager

Carbon by BOLD, Lisbon, Portugal

Help companies with projects for mobility solutions and digital transformation.

2013 - 2015

Business Analyst

Bold International, Lisbon, Portugal

2011 - 2013

Senior Consultant

Lombardia Informatica Spa, Milan, Italy

2002 - 2012

Consultant

du, United Arab Emirates

Education

2018

Singularity University – NASA Ames, California, USA

2017

The Lisbon MBA – MIT Sloan | Católica | Nova, Lisbon, Portugal & Boston, USA

2007

Undergraduate in Management and Computer Science – ISCTE, Lisbon, Portugal

Pedro Silva

Experience

2017 – present

COO & Co-Founder

mov.e, Lisbon, Portugal

2017

Lisbon MBA Summer Internship

EDP, Lisbon, Portugal

Development of a financial model tool for CCGT investment analysis in an international context, incorporating risk analysis and economic and financial variables in order to support management in decision making.

2016

UK Business Developer

Blocotelha Steel Constructions, Portugal

Accountable for market prospects, identifying business opportunities, analysis, planning and estimating of steel works, and project management at production phase.

2014 - 2015

Bidding Engineer

Elevo Group, Lisbon, Portugal

Responsible for studying, analyzing, planning and estimating of proposals for public works, with a major focus on Africa. Total bids worth €400 million.

2012 - 2013

Construction Manager

Edifer Angola, Luanda, Angola

Managed the simultaneous construction of five projects in two provinces of a total amount of €22 million.

2008 – 2012

Assistant Construction Manager

Edifer Angola, Luanda, Angola

Co-managed the construction of two projects in the Lisbon International Airport, worth €39 million and €41 million, and a project for Refer (railway infrastructure) worth €48 million.

2006 - 2008

Bidding Engineer

Edifer Group, Lisbon, Portugal

Responsible for studying, analyzing, planning, and estimating of proposals for public works, having participated in several bids for Angola, Highway Concessions in Portugal, and dams. Total bids worth €2,2 billion.

Education

2017

The Lisbon MBA – MIT Sloan | Católica | Nova, Lisbon, Portugal & Boston, USA

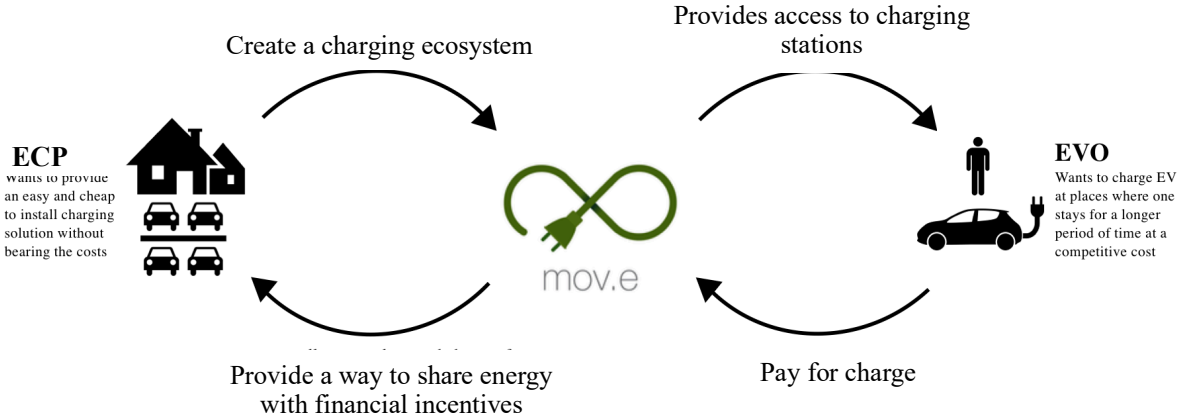
2007

Master in Civil Engineering – Instituto Superior Técnico, Lisbon, Portugal

2006

Erasmus exchange program – Technical University of Denmark, Copenhagen, Denmark

Exhibit 11: Illustration of mov.e's business model



Go-To-Market Strategy for mov.e

Teaching Note

Case Synopsis

The electric vehicle (EV) market is growing more than ever. Forecasts say that 11 million EVs will be sold by 2025, while China is said to lead the transition away from internal combustion engine vehicles, with EV sales accounting for around 39% of the global market in 2030, followed by Europe and the US. Carmakers already have aggressive plans in place to electrify their vehicles over the next ten years. Despite all the promising expectations, the EV market is expected to slow down in the 2030s due to one major issue that is capable of decelerating growth and expansion – charging infrastructure constraints, which will be particularly noticeable in high density areas where charging opportunities are limited and the number of EVs high. Mov.e's aim was to design a solution that does not only tackle the charging dilemma, which arises from the previously mentioned charging infrastructure limitations, but also a solution that provides the ground for an EV full-scale adoption for the years ahead. The young start-up has created a digital sharing platform that provides the base for the first collective EV charging system, which will be used both by electrical charge service providers (ECPs) and EV owners. The platform communicates with IoT smart plugs developed by mov.e, which simply replace existing standard sockets at the ECPs, identify the respective EVO and meter his electricity consumption. The business is based on a brokerage model and thus offers a marketplace for supply and demand. Now the start-up's next major step in order to get its business successfully started, is to figure out its go-to-market (GTM) strategy, which is expected to accelerate the time to reach breakeven. Many organizations believe that the phrase GTM strategy incorporates only the choice of the right sales channels. However, going to market is a far broader challenge in which choosing the right channels is just one piece of a larger puzzle, while every component of the GTM strategy is just as

important to be carefully considered. mov.e is now just about to figure out its own GTM strategy that fits its business, in order to avoid mistakes in the first place.

Teaching Objectives

The case can be used for Master or MBA level courses mainly in the field of Marketing, Entrepreneurship, or Strategy. The main objective of the case is to study the crucial role of the GTM strategy as part of building up a business, how it can provide a competitive advantage to becoming successful, and how it can support a company reducing its time to break even. The case can be approached in two different ways, both aiming to fulfil the main learning objective, although it can be decided on what subject is preferred to be focused on:

- › the case can either serve to develop students' know-how about one or more specific components of the GTM strategy (e.g. pricing, market definition) by working and elaborating on each individually in order to develop an expertise in that/those specific area/s or
- › it can act as a tool to explore the entire process of establishing a full solution for a GTM strategy and what aspects actually need to be considered throughout the course. As this might be a process that is likely to exceed the foreseen duration of the class, elements of the GTM strategy can be split among several groups within the class and then be discussed step by step.

In case of time pressure, the first approach is recommended.

Defining target markets: The case presents an opportunity for students to apply market analysis tools to discuss a market's competitiveness or profitability. This can be done by using tools such as Porter's Five Forces, Pestle, the Parts Model emerged out of the Game Theory, or by discussing more recent topics, such as sustaining or disruptive innovation.

Defining target customers: The goal of this segment is to learn how to gain better customer intelligence by conducting market segmentation in order to define mov.e's target customers.

Learning about customers' needs or applying concepts, such as Rogers' theory of diffusion by dividing people into five categories of technology adopters, could be made use of.

Company positioning: Discussing the importance of gaining and sustaining a competitive advantage or how a company like mov.e can create value in the first place, are practical subjects this element could address. In addition, the drafting of a positioning statement for mov.e could support to elaborate on the topic.

Distribution channels: This element can act as a stimulus to question the advantages and disadvantages of various distribution channels a company can choose from and which of them would be most suitable for a business model like mov.e's. Further, the impact of network externalities can be discussed and how important they are in mov.e's case.

Pricing model: Same as the previous point, this element can act as the base for a discussion about different pricing models and strategies and whether the one chosen by mov.e should be reconsidered and what advantages others could provide compared to its current one.

Marketing: This element should highlight the importance of how all the information that was gathered throughout the previous steps, now needs to be put all together in order to be deployed in a thoughtful way by choosing the right marketing message and channels which will help to create a loyal customer base, gain trust, and deliver the value of mov.e's solution to customers.

Next steps: To not neglect the fact that once a GTM strategy is decided on, it still needs to be adapted as soon as conditions in the environment change, this last point should encourage students to consider possible changes or developments mov.e's market might face or what potential key pain points a start-up might experience in the course of its development.

Case Analysis

As has been indicated in the teaching objectives above, the case study can either be worked through as an entire process step by step to come to a complete GTM strategy, or one or more

components can be covered individually. The following suggestion for the case analysis is designed for a 90-minute class and focuses on the elaboration of a full GTM strategy. More in-depth questions for the purpose of elaborating on one or more parts in greater detail are provided in each section, which can be used depending on what approach is chosen to work through the case study.

1. Introduction

The lecturer should initiate the discussion by asking students whether they would get an EV themselves, finding out the overall students' opinion on EVs. Following up on that, the instructor should dig deeper why or why not. This can act as a good starting point of going through an overview of the EV market and what mov.e actually tries to solve, as students having a negative attitude towards EVs will most likely state the lack of charging opportunities as one of their main reasons. Then the instructor should address mov.e's solution and students' thoughts about it. To close the introduction and to go on to the actual case analysis, the lecturer should quickly summarize mov.e's main challenge at this point - namely developing a suitable GTM strategy for their new charging concept.

2. Define target markets

This point should kick off the development of the GTM strategy by focusing on questions that help to better understand the market mov.e wants to play in, in order to know what challenges may arise and how attractive it is overall.

Start an open discussion around the following questions:

- › Is the EV market an attractive one?
- › Should mov.e rather target markets where its solution is needed most (e.g. due to weak charging infrastructure, high pollution, etc.) or where growth is likely to be high (i.e. countries with high number of EVs or tax incentives)?

The discussion can then include

- › Porter's Five Forces⁸ – What steps can mov.e take to neutralize the five competitive forces? Are intellectual property or network externalities good means to erect barriers in order to neutralize the force of new entries?⁹
- › Exhibit 2 – How might Exhibit 2 impact mov.e's decision on what markets to target?
- › Parts Model/Value Net¹⁰ – Who are the players? Can mov.e change the value players add to the game? Can mov.e change the rules?
- › First mover - What advantages/disadvantages does being a first mover involve?

3. Define target customers

The discussion should now move towards how mov.e can segment its targeted market.

- › mov.e serves two customer groups – users and hosts, what are each group's strongest needs?
- › Should mov.e only target early adopters or is its solution likely to cross the chasm soon and should it thus focus on the early majority already?¹¹

To elaborate on these questions, make use of follow up questions, such as

- › Needs – Where should mov.e get its information about its customers from? Should be made use of quantitative or qualitative market assessment? How important are location, convenience, security, etc.?
- › Price sensitivity – How price sensitive are mov.e's customers? (can again be discussed in the pricing section of the GTM strategy)
- › How is the charging behavior of mov.e's customers?

4. Company Positioning

Summarizing what market mov.e should target and what its customers look like, the discussion should now be about how mov.e should position itself.

- › Which of mov.e's resources and capabilities can provide it with a competitive advantage?^{12, 13}
- › How can mov.e sustain its competitive advantage in the long term?
- › How should mov.e position itself?

The instructor can then go into greater detail on those questions by asking for answers to

- › How to sustain competitive advantage? – intellectual property, partnerships, constant innovation, cost advantage, customer experience/loyalty/service, product features, creating barriers, leverage installed base, quick implementation, switching costs,...
- › VRIO framework¹⁴ – Which of mov.e's resources and capabilities are valuable, rare, difficult to imitate, and non-substitutable? How can they be made difficult to imitate?
- › What are mov.e's key success factors?
- › How can mov.e acquire or transfer resources they need in order to gain a competitive advantage? (e.g. recruitment, acquisitions, partnerships, joint ventures)

5. Distribution Channels

Now that it has already been discussed what customers mov.e aims to target, its chosen distribution channel can now be assessed and reflections on it can be made whether it really fits mov.e's target audience best.

- › What advantages and disadvantages does selling only via the internet have?
- › What impact does mov.e's choice of distribution channel have on its customer experience?

To learn more about what distribution channels make sense for mov.e, ask questions like

- › May using only the internet as a distribution channel limit the company from targeting certain customers?
- › Through what channels can mov.e establish large network externalities?

- › Could involving partners (e.g. car makers, electricity providers) be an additional way to sell mov.e's solution? [Exhibit 1 TN]

6. Pricing Model

In order to have a valuable discussion about the pricing element of the GTM strategy, it can be useful to first of all discuss what index based pricing¹⁵, the model mov.e plans to use for pricing its solution, is [Exhibit 2TN]. To question mov.e's choice, following questions are suggested:

- › How price-sensitive are mov.e's users?
- › Should prices not only be indexed to residential electricity prices but also adapted based on location (e.g. city center, residential area) or other criteria (e.g. high popularity charging station)?
- › mov.e wants to provide a low-cost solution. Does this match with its positioning?

Asking additional questions, can help to get deeper into the topic.

- › Could discounts or bonuses for referrals be a helpful approach in order to create larger network externalities?
- › What are the advantages of other pricing solutions?
- › Due to EVs' still quite high price, primarily wealthier people own them nowadays. However, this is likely to change in the future. Thus, is pricing in this market crucial and how will this change once the middle-class switches to EVs?

7. Marketing

Before approaching the last step of the GTM strategy, the instructor should summarize the conclusions to which have been come to in the previous steps, point out the importance of good interaction of each and every element, and how crucial the final step now is, namely to properly communicate the right message to the customers.

- › What marketing channels make sense for a business like mov.e and why?
- › Should mov.e have accepted the deal with Porsche for the sake of marketing in order to benefit from the strong brand name? How can it use its previous achievements in general for marketing purposes? [Exhibit 3TN]
- › How can mov.e measure whether its marketing strategy is successful? (e.g. new customers, installed smart plugs, etc.)

The following questions can help to look deeper into the matter:

- › As a fairly new brand, how can mov.e's marketing measures create trust among customers?
- › Should mov.e send different messages to its customer groups, users and hosts?

8. Next steps after GTM strategy implementation & conclusion

This final point should be used to wrap-up the whole discussion and to consider future challenges mov.e could possibly face after implementing its GTM strategy and should be aware of.

- › What are potential key pain points mov.e might experience in the future?
- › Should it have any concerns about the market's development and how it would need to adapt as a company?
- › How will it be able to acquire new capabilities with the development of other technologies and the overall EV market?

Bibliographic Support

The discussion can be supported by the following texts:

- 8) Porter, M. (1989). How competitive forces shape strategy. *Readings in Strategic Management*.
- 9) Reitzig, M. (2004). Strategic Management of Intellectual Property. *MIT Sloan Management Review*.
- 10) Brandenburger, A. and Nalebuff, B. (1995). The Right Game. Use game theory to shape strategy. *Harvard Business Review*, 73(4), pp.57-71.
- 11) Rogers, E. (1995). *Diffusion of Innovations*. 4th ed. New York: The Free Press.
- 12) Porter, M. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. The Free Press.
- 13) Grant, R. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), pp.114-135.
- 14) Barney, J. and Hesterly, W. (2015). *Strategic management and competitive advantage*. New York: Pearson, pp.67-82.
- 15) Monitor Deloitte (2016). *Index Based Pricing: Managing Risk and Profitability*. Deloitte.

Exhibit 1TN: Reuters Article: Carmakers plan 400 Europe car charging stations by 2020

Carmakers plan 400 Europe car charging stations by 2020

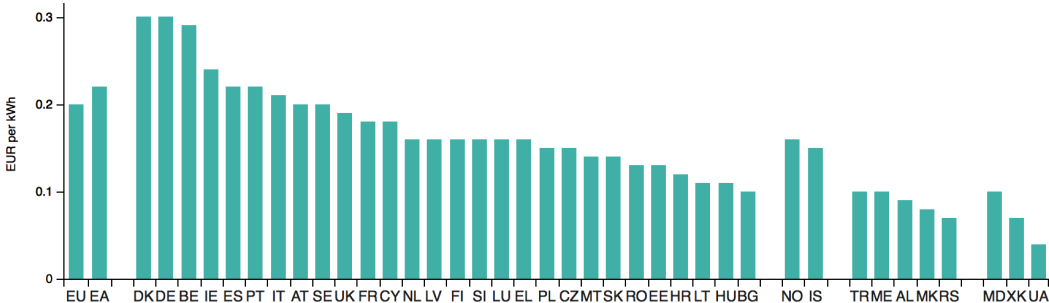
FRANKFURT (Reuters) - A group of mainly German carmakers will open ultra-fast electric vehicle charging stations this year and plans a pan-European network of 400 by 2020, hoping to narrow Tesla's lead.

IONITY, a joint venture of BMW AG, Daimler AG, Ford Motor Co and Volkswagen (VOWG_p.DE) with its Audi and Porsche brands, plans to open 20 stations to the public this year in Germany, Norway and Austria. They will be 120 km (75 miles) apart and run in partnership with Tank & Rast [LINDOTA.UL], Circle K and OMV.

Source: Reuters, November 2017

Exhibit 2TN: Electricity prices for household consumers, second half 2017

Electricity prices for household consumers (taxes included), second half 2017 (EUR per kWh)



Kosovo (XK): this designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence.

Source: Eurostat, 2018

Exhibit 3TN: mov.e's events roadmap



Source: mov.e business plan