

---

# **Tesla Motors, Inc.: Pioneer towards a New Strategic Approach in the Automobile Industry along the Open Source Movement?**

---

Manuel Moritz

Tobias Redlich

Pascal Krenz

Sonja Buxbaum-Conradi

Jens P. Wulfsberg

---

Arbeitsgruppe Wertschöpfungssystematik

Laboratorium für Fertigungstechnik

Helmut Schmidt Universität

Holstenhofweg 85, 22043 Hamburg

# **Tesla Motors, Inc.: Pioneer towards a New Strategic Approach in the Automobile Industry along the Open Source Movement?**

**Quote as:** Moritz, M.; Redlich, T.; Krenz, P.; Buxbaum-Conradi, S. und Wulfsberg, J.P.: Tesla Motors, Inc. - Pioneer towards a new strategic approach in the automobile industry along the open source movement?

**Notes:** automobile industry, electric vehicles, knowledge management, patents, value engineering, Tesla Motors Inc, business model, company IP, intellectual property, knowledge sharing, open production approach, open source movement, value creation process

## **Abstract:**

In many industries, we observe a paradigm shift from traditional value creation towards co-creation and open production approaches. The boundaries of companies dissolve and many more players (suppliers, customers, community members, etc.) are integrated into the value creation process. This also implies the share of knowledge to set industry-wide standards and to advance new technologies. Tesla Motors, Inc. recently announced that it would give away all their patents to anyone who in good faith wants to use them. They say their aim was to foster the advancement of electric vehicles to compete with conventional vehicles and give the zero-emission mobility a push. Nevertheless, what about the traditional automobile industry with its big players where even the slightest growth in market share is crucial and the intellectual property (IP) of a company is kept secret like the Holy Grail as it ensures competitive advantages? Based on a Tesla case study our research focusses on product-, company-, market- and industry-specific factors that might enable even small players to start an industry-wide revolution by applying strategic aspects of openness in their business model.

## **1) Introduction**

On June 12th 2014, a blog entry of the CEO of Tesla Motors, Inc. (henceforth "Tesla") with the title "All our patent are belong to you" [4] was released on the company's website. Tesla announced that "in the spirit of the open source movement" and "for the advancement of electric vehicle technology" it would "not initiate patent lawsuits against anyone who, in good faith, wants to you use [their] technology". By opening their IP portfolio, they want to invite other car makers to jointly tackle the carbon crisis by enhancing the technology and develop the market for electric vehicles which compared to the gasoline powered cars is minimal these days. Within the rather traditional automotive industry, this decision caused an industry-wide stir as innovation and IP are recognized as crucial competitive factors for a company to survive. So, why would a young and still small company (compared to the big carmakers) like Tesla take such a revolutionary step and give away all their technological know-how for free? What are the strategic implications of that decision? Could a strategy based on openness in the end turn out to be a key advantage in an industry that with the breakthrough of the electric cars will have to be completely restructured? What corporate environment is suitable to a strategy of openness? Are the principles of the open source movement also applicable on physical goods? What would be the opportunities and risks by doing so? Based on the theory of a distributed production and on the Tesla case study these questions shall be addressed.

## 2) Openness as a critical success factor

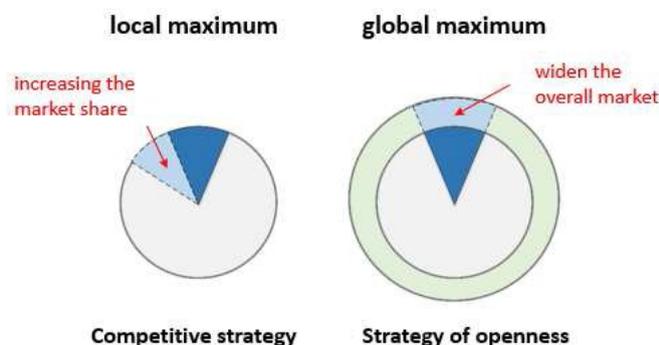
### 2.1) The evolution of success factors

The ability to create and keep competitive advantages is crucial for a company to make profits and survive in the long term. Besides traditional factors like time, cost, quality, etc., in recent years secondary factors have evolved that enable companies to hold their position while market conditions or the industry environment are rapidly changing. Flexibility and adaptability, for example, have become as important as the primary success factors these days [17, 10a]. In addition to that, there are many examples of highly competitive companies (e.g. Local Motors, Wikipedia, Quirky, InnoCentive, etc.) whose success cannot be described with the traditional view on corporate competitiveness as they follow another paradigm of value creation. The borders of companies are more and more dissolving towards (open) production or value co-creation systems [17, 10a].

Beyond that, meanwhile the most companies act in a highly dynamic business environment with decreasing time- to-market and ever-shorter product lifecycles where the ability to constantly innovate is equally important [20]. Considering scarce budgets for internal R&D has put even more pressure on the companies. The search for new ideas and innovative technologies beyond the company's walls has led to the idea of open innovation where also external sources may be utilized [3]. Production systems that are based on participation, cooperation and interaction with several external stakeholders (e.g. customers, competitors, suppliers, scientists, communities, etc.) to boost innovations are also referred to as "Bottom-up economics" [17, 10a].

### 2.2) Theory of distributed production

To explain the idea of a distributed production, we will discuss two contrary perspectives on market and competition. On the one hand, there is a classical market with fixed boundaries and a near-constant size where different players act in a highly competitive environment. The companies are focused on the differentiation from their competitors and thus try to gain additional market shares up to the production- related (local) maximum (Fig. 1, left part). A different approach is to consider the companies as players within value creation systems. Their aim in contrast is not to split the market, but to widen the overall market jointly (Fig. 1, right part). In this constellation, openness is an essential requirement for success. Cooperation and value co-creation lead to a network of production systems that also fosters the occurrence of emergence effects.



**FIG 1** : Two perspectives on the strategy of a company

Considering changing characteristics of a market (e.g. maturity, size, industry, etc.) might cause its players to adapt their strategic approaches to one or the other direction. The authors claim that these days more markets require a strategy of openness in order to remain innovative and thus competitive. In this case, the ability for cooperation and collaboration turns out to be a critical successfactor.

### 3) Openness as a new strategic approach

#### 3.1) From closeness to openness

The strategic approaches just mentioned before represent two contrary perspectives on a value creation system: Closeness and openness as opposing extremes in a wide spectrum. Fig. 2 shows a classification system that clusters success factors for each characteristic with regard to architecture of the value creation artifact, the value creation process as well as the value system structure. [17, 17a]

		Indicator	Closeness	Openness	
<b>Architecture of the value creation artifact</b> 	Structure	Granularity	Coarse	Fine	
		Modularity	Low	High	
	Function	Property rights	Private goods	Public goods	
		Type of service	Product or service	Product-service Systems	Co-creation experience
<b>Value creation process</b> 	Value creation activity	„Width“ of Co-activity	Low (bilateral)	High (mass...)	
		„Depth“ of Co-activity	Coordination (integration)	Cooperation ( participation)	Collaboration (interaction)
	Value creation strategy	Competitive strategy	Competition	Coopetition	Cooperation
		Competitive advantage	Unique		Hybrid
		Business model	Closed source	Partial de-commercialization	Open Source
<b>Value system structure</b> 	Intra-organizational	Communication culture	Low	Participatory	Reflexive
		Organizational structure	Hierarchic		Heterarchical; Adhocratic
		Configuration	Monolithic		Modular, fractal
		Changeability	Low		High
	Inter-organizational	Interorgan. coordination	Hierarchic	Hybrid	Market
		Networking	Bilateral cooperation		Virtual network
		Role dynamics	Static	Flexible	Dynamic

FIG 2 : Cluster of value creation characteristics [17]

In this paper, we focus on the value creation artifact and in particular on the organization and management of IP as the technological know-how of a company is represented by its patents. With *Tesla*, the IP rights were drastically affected by the announcement of the CEO as this top-down initiative can be interpreted as a quasi-free license to use their technology.

#### 3.2) The new age of (open) innovation

So far, we have seen that the traditional understanding of innovation and innovation processes has changed over time. SCHUMPETER argued that innovative companies are (internally) able to generate competitive advantages that leads to a temporary monopoly with monopoly profits [12]. CHESBROUGH defines this process as closed innovation: The value creation process takes

Quote as: Moritz, M.; Redlich, T.; Krenz, P.; Buxbaum-Conradi, S. und Wulfsberg, J.P.: Tesla Motors, Inc. - Pioneer towards a new strategic approach in the automobile industry along the open source movement? In: Proceedings of PICMET '15: Management of the Technology Age

place within a company's sphere and thus range of control (Fig. 3, left side) [3]. However, innovation pressure has forced companies to also search for new ideas beyond their spheres. This concept is referred to as open innovation (OI). External ideas may enter the innovation process of a company, but also internally sourced ideas may be harnessed outside the firm's walls (Fig. 3, right side). REICHWALD and PILLER understand the open innovation concept as a complement to the traditional innovation process that may enhance the competitiveness of a company [18].

3.3) Open source as part of an open innovation strategy

Open source is one of many feasible models that enable companies to harness their technology in the spirit of open innovation. The basic idea is to jointly develop new technologies and share the rights to make use of it. Essentially, there are four open source strategies that can be differentiated with respect to company's situation and aims: Pooled R&D, spinouts, selling complements, donated complements [2]. In the software industry, many cases have proven how the spirit of the open source philosophy was able to influence an entire industry and create profitable business models. The question would be then whether this approach is also successfully applicable to an industry patenting their technological know-how and producing physical goods.

3.4) The implementation of openness

The implementation of open source strategies in a traditional tech-industry where patents guarantee competitive advantages and add to the intangible assets, but are also essential for defensive IP-strategy purposes requires a different approach. On the one hand, long-term strategic planning, high R&D costs, but also legal and shareholder related and other issues hamper a radical change in the IP strategy. On the other hand, changes in the industry or market environment might force a company to change it in one or the other direction. Thus, the proper degree of openness has to be adjustable. We propose a gradual opening structure (Fig. 4) from completely closed to very open. A company therefore has to constantly revise its IP strategy and adjust it, if required.

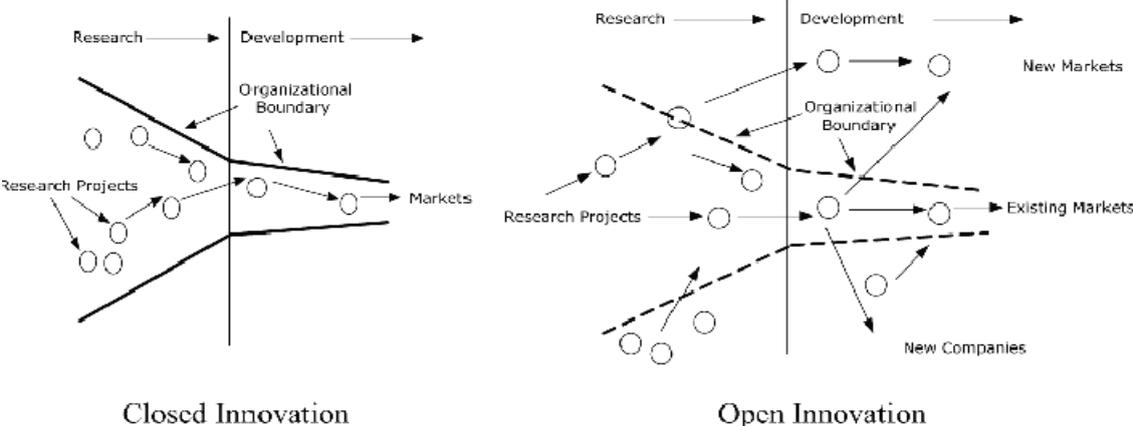
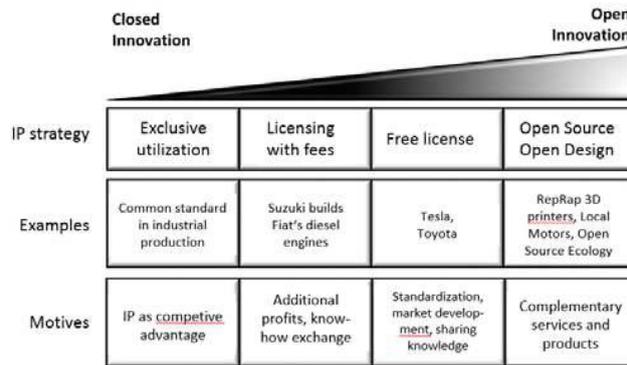


FIG 3 : Closed vs. Open innovation [3]

Quote as: Moritz, M.; Redlich, T.; Krenz, P.; Buxbaum-Conradi, S. und Wulfsberg, J.P.: Tesla Motors, Inc. - Pioneer towards a new strategic approach in the automobile industry along the open source movement? In: Proceedings of PICMET '15: Management of the Technology Age



**FIG 4 - Gradual opening of IP**

## 4) Tesla and its business environment before the announcement

### 4.1) Company profile

Tesla is a Silicon Valley-based pioneer company in the electric vehicle sector that develops, designs, produces and sells battery electric vehicles (BEV) as well as components for BEVs (battery, charging and powertrain technology). Its unconventional strategic and marketing approach could rather be referred to a high-tech company than to a traditional manufacturer. Although rapidly growing, Tesla still is a small but highly innovative company (6.000 employees) compared to other players in the car industry. Tesla is the first car maker to produce high performance BEVs in serial production. A broad network of company owned retail and service stores are located all over the world to work the most important car markets (ca. 30 countries in North America, Europe and Asia).

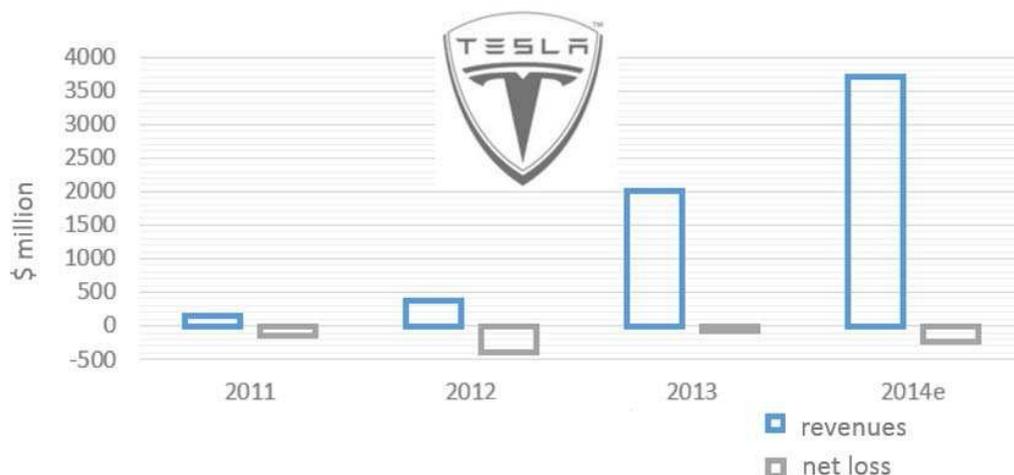
The company's goal is to "drive the world's transition to electric mobility by bringing a full range of increasingly affordable electric cars to market" [19]. To reach that goal, a 3-step-strategic approach was developed. First, a low volume and high-price super sports car (Roadster, ca. 2.500 sold, out of stock) should attract attention and demonstrate the technological achievements and capabilities of both Tesla and EVs in common. Then, mid-volume and mid-price models for the premium sedan market (Model S, Model X) should follow to increase the production capacities and gather as many early adopters as possible. Finally, an affordable model suitable for mass production (Model 3) shall drive the transition from gasoline-powered cars to EVs and establish Tesla as a leader in a mature EV market [20].

Right now, the premium sedan Model S and the Model X are for sale. With this car, Tesla has impressively proven what they are capable of (e.g. Motor Trend's "Car of the year 2013", Consumer Reports' "top-scoring car ever", "World Green Car of the Year 2013"). In 2015, the delivery of the new SUV Model X is expected. From 2017 on, the Model 3 shall be produced.

### 4.2) Financial situation and sales figures

From its first days up to the present, Tesla has financially struggled many times, but with the help of investors like Daimler, Toyota and their CEO Elon Musk insolvency could be averted. With its IPO in June 2010 Tesla was able to collect over \$200 million at \$17 a share. Since then, the share price has risen to more than \$200. Meanwhile, the losses have accumulated to more than \$1 billion that is more than reasonable with regard to a capital-intensive industry like the car

sector. However, things start getting better these days: The revenues are climbing exponentially (Fig. 5) as the production volume increases, respectively. On the market side, despite an already long waiting list the demand exceeds the supply capacity. In addition, a DOE loan of \$500 million as part of the Advanced Technology Manufacturing Loan Program could be prematurely redeemed. Nevertheless, due to the ongoing necessary investments, Tesla expects to run a profitable business not before 2020.



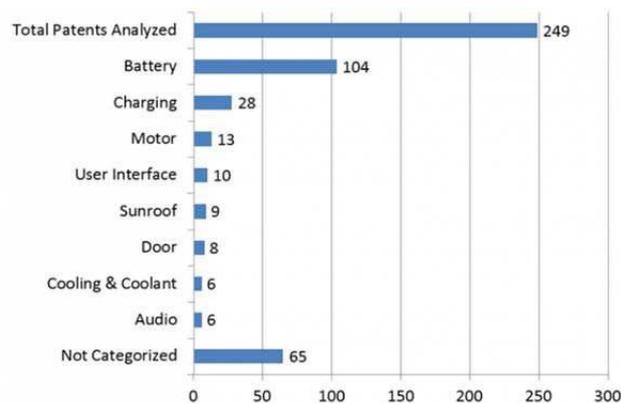
**FIG 5** : Development of revenue and net result [20]

In 2013, just half a year after its initial delivery more than 25.000 Model S (BMW 7 Series: 56.000) could be sold, in 2014 this figure is expected to exceed 33.000. The delivery of the third model, a SUV called Model X, will start delivery in 2015. From 2016 on, Tesla wants to produce 50.000 cars per year und for 2020 they plan a volume of 500.000 (Volkswagen Golf: 824.000) [QUE]. With more than \$1.5 billion in revenues and in 2013 by far the leading premium seller, the USA are the most important and rapidly growing market for Tesla followed by Europe (\$467 million) and Asia (\$1 million) [20].

#### 4.3) Technology and IP portfolio

Right from the beginning, Tesla has been a highly innovative company with a skilled engineering workforce. The technological know-how, however, was not only used for their own cars, but was also offered to other car makers (Daimler, Toyota) that wanted to electrify their models in terms of engineering services and component supply. Meanwhile, Tesla is the leading EV car maker concerning performance (0-60 mph in under 4 seconds) and efficiency (range of nearly 300 miles). Their lithium-ion battery packs have an energy density that is 3 times higher than the ones of competitors, the battery costs per kWh are half as high. Additionally, they developed the fastest DC rapid-charging station (Supercharger) available on the market (50% recharged after 20 minutes). They also run their own rapidly growing network (+200% in 2014) of charging stations all over the world (more than 350 stations, e.g. coast-to-coast in the USA). The stations are compatible to other automobile manufacturers' models as well, but only Tesla drivers may enjoy the rapid charging feature. [20]

Fig. 6 gives a categorized overview of Tesla's broad IP Portfolio. The patents add up to nearly 250 mainly US patents and it is obvious that they put their emphasis on the battery and charging technologies.



**FIG 6 - Tesla patents by category [11]**

#### 4.4) Strategic partnerships

While building up its production capacities and processes, Tesla has always been strongly dependent on strategic partnerships not for economic reasons only, but also in terms of knowledge and know-how sharing. Since 2008, they cooperate with Daimler where Tesla developed a battery and powertrain system for their electric fleet that is produced and delivered by Tesla as well. The same type of cooperation exists with Toyota since 2010. Another cooperation agreement was concluded with Panasonic. The Japanese cooperation is not only the long-term main supplier of the battery packs, but also a project partner in the jointly planned Giga factory project (a huge battery research and production site in Nevada, USA). [20]

#### 4.5) Electric vehicles market

Different, but interconnected trends have been reviving the overall demand for electric mobility and the third age of EVs [14]. A PESTEL analysis gives a brief overview of the most important drivers:

<b>Political</b>	International climate policy to fight global warming; Electric Vehicles Initiative of the IEA
<b>Economic</b>	Global increase of traffic volume; finite fossil resources; governmental grants
<b>Socio-cultural</b>	Change of values (e.g. sustainability, shareconomy, individuality)
<b>Technological</b>	Improvements in battery and charging technology; growing infrastructures; new materials
<b>Environmental</b>	Climate change; noise, exhaust and fine dust pollution in megacities
<b>Legal</b>	CO <sub>2</sub> emission limits

**FIG 7 – PESTEL analysis of global trends for electric mobility**

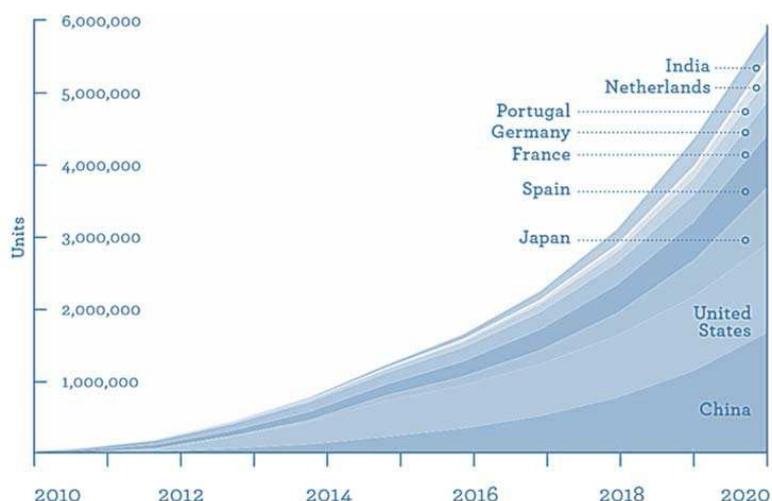
Chances for the final breakthrough of EVs have never been better: There is political will paired with social demand and corresponding economic, ecological and technological basic conditions. The group of EVs comprises of Range Extender (REEV), Plug-in Hybrid (PHEV), Battery (BEV) and Fuel Cell (FCEV) electric vehicles [16]. In this case, we mainly concentrate on BEVs.

According to PORTER, the EV market can be characterized as immature. As such newly formed markets are emerging (e.g. because innovation, changing consumer behavior or socio-cultural changes) they are accompanied by a high degree of technological and strategic uncertainty [15]. Only few rules have established throughout the industry, neither has the most promising business model. Time pressure, governmental grants and high initial investments are

business possible constraints at this stage, too. The focus, however, is on the customer side: Marketers need to convince potential customers either to use a new product or to switch from a substitute. Thus, a company has to try to beneficially position itself within that immature market in a way that enable it to influence the rule setting phase.

Because of its immaturity, a low degree of standardization and political and technological uncertainty, the market environment in the EV sector is highly dynamic. Neither has a predominant propulsion technology settled the race, nor have established market players marked their territory and thus a new industry sector is about to rise. On the other hand, worldwide demand for green technology and EVs in particular is growing rapidly (Fig. 8). So are the sales figures of green cars: From 2010-2012 the number of global EV sales has increased tenfold. Nevertheless, with a global stock of about 180,000 cars in 2012 the EV's share of the global fleet is minimal with 0.04% [14]. Anyways, the annual growth rates indicate a huge growth potential (e.g. in 2014: Norway +310%, the Netherlands + 240%, China +113%, Germany +78%, USA +34%) [13].

Although the outlook for the next decades has a broad range, an ongoing strong growth of EVs seems very likely. The overall car market is expected to grow from 63 million cars in 2012 to 86 million in 2020 and 99 million in 2030[16]. The corresponding share of EVs is 9% in 2020 and 30% in 2030 [16]. With respect to Tesla, the share of BEVs shall be 0.8% and 8.8%, respectively [16]. However, these days there are many challenges to face in order to foster the major breakthrough. The prices for EVs are still way above conventional cars (ca. 200%) and will remain expensive in the near future (ca. 60% in 2025) despite expected cost reductions through breakthroughs battery research [10]. Another problem is the slow expansion of area-wide charging infrastructures that along the price is a crucial precondition for potential EV drivers [10]. Finally, for further cost reductions and technological interoperability there is an industry-wide demand for standardization of vehicle communication interfaces and charging systems. To address these issues, new business models and rearranged comprehensive value creation models have to be developed [10].



**FIG 8 - Sales targets of the most important EV countries [14]**

<p style="text-align: center;"><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Technology leader in the EV sector</li> <li>• Unique business model and product concepts</li> <li>• Innovative tech pioneer</li> <li>• First mover advantage</li> <li>• Strong brand image and reputation</li> <li>• Advantages of a niche marketer</li> <li>• Partnership with <i>Panasonic</i></li> </ul>	<p style="text-align: center;"><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Low brand awareness in the mass market</li> <li>• Highly dependent on single-source suppliers</li> <li>• Prohibition of direct sales in some states in the USA</li> <li>• High cost structure, low economies of scale</li> <li>• Production delays, long waiting times for customers</li> <li>• Low experience in car production</li> <li>• Problems with the global extension of the sales network</li> </ul>
<p style="text-align: center;"><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Political and social demand for electric mobility</li> <li>• Governmental initiatives and grants to boost the breakthrough of EVs</li> <li>• Growing global demand for mobility</li> <li>• High entry barriers</li> <li>• Peak-oil-debate</li> <li>• Cost reduction by advancement of battery technology</li> </ul>	<p style="text-align: center;"><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Major breakthroughs in competing technologies</li> <li>• Crowding out by the market entry of big players</li> <li>• New market players with high resource base (e.g. Google)</li> <li>• Permanent low oil prices reduces attractiveness of EVs</li> <li>• High entry barriers hampers market entries (e.g. <u>Th!nk</u>, Better Place, etc. went bust)</li> <li>• Safety risks with Lithium-ion batteries</li> </ul>

**FIG 9 - SWOT analysis of Tesla's situation**

#### 4.6) Industry situation

With the upcoming age of EVs, the over 150-years-old car and car supplying industry is facing a disruptive restructuring phase. Traditional value creation processes and global supply chains that have evolved and were improved over years are undergoing a massive change. New disciplines (e.g. software, chemical science, battery technology, etc.) and materials as well as production processes are going to replace existing technologies (e.g. combustion engine, transmission, exhaust system, lubricants, etc.) thus major investments in production technology and R&D are necessary. Unfortunately, most of the big car makers are focusing their business activities on developing markets where they sell huge volumes of conventional cars rather than developing large-scale EV programs. [10]

However, the emergence of a new market offers a wide range of business opportunities not only for existing market players, but especially for start-ups and industry pioneers. New players with innovative ideas and new concepts may shape the immature industry's structures and position themselves in an early stage as technology leaders. [6]

In doing so, quickly building up new basic knowledge and competencies is crucial. External sourcing of knowledge for innovation by means of strategic partnerships/alliances, joint ventures or acquisitions, etc. is an efficient way to grow the know-how of a corporation. These strategies imply a certain degree of opening and thus foster economy of scale effects and reduce business risks as well as developing costs. Actually, KAMPKER claims that the ability to manage those relationships effectively and efficiently would lead to major competitive advantages in the EV business environment [10].

#### 4.7) Initial strategic position

To sum up, the EV market though still a niche is very attractive as exploding growth rates are very likely. The industry is not well developed either. Within this environment, Tesla has

**Quote as:** Moritz, M.; Redlich, T.; Krenz, P.; Buxbaum-Conradi, S. und Wulfsberg, J.P.: Tesla Motors, Inc. - Pioneer towards a new strategic approach in the automobile industry along the open source movement? In: Proceedings of PICMET '15: Management of the Technology Age

positioned itself as technology leader and manufacturer and seller of high-performance BEVs. The production volume is increasing more and more, so is the demand for Tesla's models. By means of a SWOT analysis, the overall strategic situation of Tesla before the patent announcement is presented as in Figure 9.

Keeping these aspects in mind, Tesla's strategic objectives for long-term success would be to boost electric mobility and develop the market for EVs by any means, to foster standardization with their technology and to encourage other car makers to jointly invest in EV research and technology to enable profitable mass production and thus being able to offer affordable electric cars. With respect to section II. b), by widening the overall market via cooperation and collaboration all market players would benefit.

## 5) Implications for management

### 5.1) Receptions and reactions

Tesla's patent announcement caused a huge (social) media coverage with a broad spectrum of opinions, but mainly positive tenor (from "only a PR stunt"<sup>1</sup> over "risky bet"<sup>2</sup> to "What Tesla knows that other patent-holders don't"<sup>3</sup>, "makes sense"<sup>4</sup> and "clever move"<sup>5</sup>). On the industry side, however, the news did not arouse great interest. Daimler claims the patent approach a "PR move"<sup>6</sup>, BMW meanwhile has its own strong technology base with the "project i" and the big US car makers are not interested in Tesla's technology either. Toyota, on the other hand, impressively reacted by announcing to grant a free license<sup>7</sup> to 5,700 patents until 2020 in order to boost the advance of their favored fuel cell technology.

Furthermore, US patent experts mostly are also critical of the patent announcement with regard to the legal force, the terms and conditions as well as the duration of the offer. The supplement "in good faith" would be vague and leaves space for interpretation (on Tesla's side), too. No competitor could seriously utilize Tesla's technology without further clarification of the offer and the conclusion of a contract. In fact, nothing would have changed as Tesla still holds the patents and the announcement could only be seen as a kind of "free" license that should rather be interpreted as an offer for cooperation towards the big car makers. [5, 7, 8, 9]

Despite the criticism, the quasi offer of the complete IP portfolio within an industry like the automobile is a courageous approach and one has to consider that a high-tech company is highly dependent on its technology base in terms of competitive advantages especially if your resources are rather small compared to your competitors. The necessity of the EV market development and the business opportunities arising with it, in Tesla's view, seem to outweigh the risks of the opening.

---

1 Inside EVs, 07/14/14

2 Manager Magazine, 06/13/14

3 Harvard Business Review, 06/12/14

4 Forbes, 06/13/14

5 Manager Magazine, 06/20/14

6 CEO Zetsche on an interview at the CES 2015

7 Senior VP automotive operation Carter at the CES 2015

## 5.2) Opportunities

Tesla's knows that its technology leadership and the good strategic position is nothing worth, if in the long run the EV market won't be big enough to sell high-volume affordable cars as this is the precondition to run a profitable business in this sector. Therefore, any measure that could possibly stimulate the market growth has to be considered. On condition that the market would grow, Tesla's revenues would increase as well, even if its market share would stagnate which is not very likely because of Tesla's superior market position. Furthermore, giving free its battery technology might lead to a comprehensive industrial engagement that would decide the race for the predominant propulsion technology for Tesla's benefit. This would not only boost the sales of vehicles, but also the demand for battery related components such as charging stations and lithium-ion battery packs. Additionally, the open source approach boosts the reputation of the company as highly innovative also in terms of employer attractiveness and brand awareness. It might even encourage other marketers or even industries to open up as well. A comprehensive approach of cooperation and collaboration would also cause network effects that would advance the restructuring of the industry for both market players and customers benefit [1]. Given the fact that even a big player like Toyota does same thing indicates Tesla's strategy as a promising one.

Another rather important consequence of the announcement could be to strengthen Tesla's position in terms of industry-wide standard setting. The offer might attract not only car producing competitors to use Tesla's technology, but also the public sector or cross-industrial players and suppliers with regard to charging infrastructure or the propulsion of other transportation related means. Minor but still interesting aspects to consider are: Additional revenues via complementary sales or the increase of know-how for Tesla if a cooperation partner would share knowledge in return.

## 5.3) Risks

A courageous and unconventional strategic approach is accompanied by risks and threats to a company. In this case, one of them is the loss of revenues via licensing of technology. The holder of a patent may temporarily preserve a monopoly on the protected invention and therefore generate a competitive advantage as well as higher rents or additional income through licensing in order to compensate the R&D costs. With the patent release, these advantages are obsolete. In Tesla's case, this also might apply and result in lost sales in the short term. In the long term, however, the revenues in a then developed mass market would be much higher.

Another threat is the free rider problem and a crowding out effect for Tesla in the aftermath. A big player with high resource base could utilize the technology and compete with Tesla. Theoretically, he could beat Tesla because of economy of scale advantages. However, this risk seems very unlikely as Tesla would have an ongoing technological advance and at this early stage of the market, any competition would be good for Tesla, too. With respect to PR, if for any reason Tesla would have to reverse the IP opening in the near future, this would have a tremendous negative impact on the reputation. There is also a possible threat of patent litigations. However, Tesla still is capable of using its patents for defensive purposes as it allowed the use of its patents without releasing the rights of them.

## 6) Summary and outlook

The aim of the paper was to present a new strategic approach for organizations based on the theory openness where collaboration leads to a widening of the overall market and, thus, to a benefit for all players. Unlike traditional competitive strategies that are focused on closeness, we suggest an adaptable gradual opening and thus collaboration throughout all value creation processes as this behavior stimulates advanced market growth and innovativeness. We present a case study, where a company adjusted its business strategy towards a more open approach and therefore, in the end, might be more successful.

Tesla's strategic approach along the open source movement (although it is rather a light version of it) and the application of aspects of openness are revolutionary for a (small) corporation in the highly competitive car industry. There are some risks related to it, but they are clearly outweighed by the business opportunities. The strategic situation of Tesla and the special environment of the EV market right now seem to offer the perfect conditions to a strategic turn around. However, we cannot yet assess whether Tesla will be successful in the end and whether surrounding challenges (beyond Tesla's sphere of influence) regarding the shift towards electric mobility will be met.

According to its specific situation within a certain market, an organization should check whether a more open and collaborative approach might, in the long term, enhance the company's overall situation in terms of innovativeness and market position.

However, further research and study is necessary to analyze under which circumstances business strategies based on openness are superior to traditional competitive strategies. What are the characteristics a corporation has to feature and what are industry and market conditions under which openness leads to competitive advantages rather than lost revenues. Since digitalization and globalization revolutionize the world's economies traditional economic views on markets and marketers, their behavior will constantly have to be checked against validity.

## References

- [1] Bessen J.: "History Backs Up Tesla's Patent Sharing" on HBR.com 06/13/14, Retrieved 1/30/15 : World Wide Web, [https://hbr.org/2014/06/history-backs-up-teslas-patent-sharing/?utm\\_source=Socialflow&utm\\_medium=Tweet&utm\\_campaign=Socialflow](https://hbr.org/2014/06/history-backs-up-teslas-patent-sharing/?utm_source=Socialflow&utm_medium=Tweet&utm_campaign=Socialflow).
- [2] Chesbrough, H., Vanhaverbeke W., West J.: "Open Innovation - Researching a New Paradigm", Oxford University Press, New York, 2006.
- [3] Chesbrough, H.: „Open Innovation: The New Imperative for Creating and Profiting from Technology“, Harvard Business School Press, Boston, 2003.
- [4] Musk, E., CEO of Tesla Motors, Inc. blog entry from 6/12/14, Retrieved 1/30/15 World Wide Web, <http://www.teslamotors.com/blog/all-our-patent-are-belong-you>.
- [5] Davis R.: "Devil's in the details of Tesla's open patent pledge" on Law360 06/13/14, Retrieved 1/30/15 World Wide Web, <http://www.law360.com/articles/547910/devil-s-in-the-details-of-tesla-s-open-patent-pledge>.
- [6] Ebel B., Hofer M.: "Automotive management", Springer, Heidelberg, 2014.
- [7] Edgar A.: "Tesla patent pledge clears way for shared infrastructure" on AdvocateDaily, Retrieved 1/30/15 World Wide Web, <http://www.advocatedaily.com/2014/07/tesla-patent-pledge-clears-way-for-shared-infrastructure/>
- [8] Fung B.: "How to build a Tesla according to Tesla" in Washington Post 07/23/14, Retrieved 1/30/15 World Wide Web, <http://www.washingtonpost.com/blogs/theswitch/wp/2014/06/23/how-to-build-a-tesla-according-to-tesla/>.
- [9] Gallegos A.: "With Open Source Patents, Risks Run High for Tesla and Interested Automakers" on LXBN 06/23/14, Retrieved 1/30/15 World Wide Web, <http://www.lxbn.com/2014/06/23/risks-run-high-tesla-interested-car-companies-open-source-patents/>.
- [10] Kampker A., Vallée D., Schnettler, A.: „Elektromobilität“, Springer Gabler, Wiesbaden, 2013.
- [10a] Krenz, P., Basmer-Birkenfeld, S., Buxbaum-Conradi S., Redlich T., Wulfsberg, J.P.: "Inter-organizational Knowledge Management - Facing the Conflict of Transparency and Non-Disclosure of Knowledge within Value Creation Networks", eDemocracy & eGovernment (ICEDEG), Second International Conference, IEEE, 2015.
- [11] Loveday, E.: "249 Tesla Patents – 104 Related To Battery, 28 To Charging, 13 To Motor And 10 To User Interface" on Inside EVs, Retrieved 1/30/15 World Wide Web, <http://insideevs.com/249-tesla-patents-104-related-battery-28-charging-13-motor-10-user—>
- [12] Luepertz, V.: "Problemorientierte Einführung in die Volkswirtschaftslehre", Winklers, Darmstadt, 2003.
- [13] Nationale Plattform Elektromobilität: "Fortschrittsbericht 2014", Berlin, 2014.
- [14] OECD/IEA: "Global EV outlook", Paris, 2013, Retrieved 1/30/15 World Wide Web, [http://www.iea.org/publications/globalevoutlook\\_2013.pdf](http://www.iea.org/publications/globalevoutlook_2013.pdf).

- [15] Porter M. E.: "Competitive advantage", Free press, New York, 2004 [16] Proff H., Proff H., Sandau J., Fojcik T.: "Management des Übergangs in die Elektromobilität", Springer Gabler, Wiesbaden, 2014.
- [17] Redlich, T.: „Wertschöpfung in der Bottom-up-Ökonomie“, Springer, Berlin, 2011.
- [17a] Wulfsberg J. P., Redlich T., Bruhns F.-L.: "Open production: scientific foundation for co-creative product realization", in: Production Engineering, 5(2), 2011, pp. 127-139.
- [18] Reichwald R., Piller F.: "Interaktive Wertschöpfung - Open Innovation, Individualisierung und neue Formen der Arbeitsteilung", Gabler, Wiesbaden, 2006.
- [19] Tesla Motors, Inc IR presentation from January 2014, Retrieved 1/30/15 World Wide Web, <http://files.shareholder.com/downloads/ABEA4CW8X0/2895786596x0x720221/5647bed2-1c27-4b40-abd3-dd11f8bc474e/Investor%20Presentation%20-%20Jan%202014.pdf>.
- [20] Tesla motors, Inc. annual report filed 2/26/14, Retrieved 1/30/15 World Wide Web, <http://ir.teslamotors.com/secfiling.cfm?filingID=1193125-14-69681&CIK=1318605>.
- [21] Waser, B.: "Wettbewerbsvorteile durch innovative Produkte und begleitende Dienstleistungen in Verbindung mit Prozessinnovation", Luzern, 2003.