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Brand valuation - Tesla Motors, Inc.

RESEARCH PAPER

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Abstract

Brands are assets that appeal to the consumer and are, many times, of value unknown or difficult to determine for a business. These intangible assets have been classified and defined in many ways but remain unexplored.

The purpose of this research project is twofold. Firstly, to gain a deeper knowledge on the subjective world of brands and better comprehend: what drives its value, and how it can be calculated. Secondly, it intends to provide the reader with the necessary acumen and expertise to be able to obtain the intrinsic value brands provide. It intends not to establish a universal valuation for any given brand but to prepare the reader with the tools and critical reasoning fundamental, in our view, to prosper academically, in the business world or personally.

The Research paper will analyze, summarize and evaluate the most accepted current brand valuation literature. Lately, by means of a practical approach or case study, complex or abnormal situations will be tackled through a case study of the Tesla Motors, Inc. The purpose is to put to test the predominant valuation methodologies and conclude on its strengths and limitations.

Summary

Introduction

The intrinsic value of a brand is difficult to define. Many methods have been developed, some proprietary and some of wide public knowledge. However due to the *per se* subjective and intangible nature of brands, and despite the increasing amount of brand valuation services offered, no clear method provides customers with an appropriate value range or sufficient certainty. Not all methods are universal and, those that are, seem more adequate to apply for a given brand result in notable value disparity. Huge variability and result disparity is at the order of the day and company stakeholders, especially management and investors, are increasingly understanding the importance of obtaining a correct brand value.

Precise and ensuring methods are crucial to be able to understand brand performance and returns. This security helps management and investors to correctly allocate resources and trace strategic plans, such as marketing expenses or licensing conditions, to the optimum level. A Level at which a brand obtains its maximum value for all stakeholders.

The objective of this project is to, firstly, study the current market of valuation methods. Determine each valuation method's approach as well as its main strengths and weaknesses. Then the suitability of each valuation tool for a given set of enterprises and sectors is studied. After exploring the current literature and knowledge of brand valuation methods, a practical case study is developed to test the limits of these valuation tools. The brand valued will be Tesla Motors Inc.

The practical case study attractiveness lies in the fact that Tesla Motors Inc. is a newborn electric cars manufacturer with non-declared goodwill or brand intangible assets transaction. The company is too young and has not gone through any acquisition or inorganic expansion since its inception. Furthermore, the general buzz around this company after the release of its new model, Model 3[1], and its 276,000 pre-orders four days after its market presentation, makes it a very volatile and unpredictable company in an uncertain transition to a mass market electric car producer.

In conjunction with the start-up conditions that surround it, i.e.: negative net income, high CAPEX, negative EBIT, no clear competitor to benchmark it with etc. Tesla

[1] http://www.ft.com/intl/cms/s/0/9a163366-f9de-11e5-8e04-8600cef2ca75.html [4/26/2016]

Motors Inc. is a very rare case study and helps to envisage the limits of actual brand valuation tools.

The final part of this research project withdraws conclusions on the current context and specificities of the different brand valuation methods as well as it gives recommendations on two issues. The first one, and more global one, recommendations tackling the brand valuation universe: main problems encountered and main solutions used. The second one, and more concrete one, a specific guidance to valuing start-up and initial growth stage companies. Tesla Motors Inc. case study is used as background and extrapolation example.

A. Context, standards and objectives of brand valuation

Multiple points of view can be used to define a brand: economical, legal, using accounting procedures, etc. But, besides any of its definitions, there is a common agreement on the fact that brands are value-driven assets that can enhance business operations.

With this context in mind, a good view of the brand value a company possesses is key to define its future operations and value enhancing procedures. It is then of fundamental importance to have precise and accurately measuring models that can correctly evaluate and assess brand value drivers. Without this, no measurability is possible and all feedback loops created are irrelevant.

Three main valuation approaches can be considered: cost-base, market-base and income-based. Each one is based on a different premise: either the past, the present or the future.

Theoretically one could argue that income-based valuation tools should be more pertinent when calculating brand values as investors are only interested in future cash-flows reported by the asset, i.e. the brand being valued. But reality largely diverges from theory and the lack of easily forecastable variables and the fact that value output is highly dependent on the initial assumptions made, makes many income-based methods highly uncertain. High variability is common, as the different sensibilities tables will proof, and though past or present events need not to repeat, cost and market-based approaches are also of great utility.

Assumptions made should cover for all brand value drivers. One could include many variables but it should be noted that the higher the number of input variables the higher the oscillation outcome. Therefore input data should be small to reduce output variability but big enough to cover for the majority of the brand value driving propositions. Also the pareto principle should always be in the mind of those who value brands.

A small, and carefully selected, group of input variables is used largely throughout the research paper:

- Discount and perpetual growth rates: Terminal values contain the majority of the brand value weight in many of the income-based approaches. Discounting

terminal values to the present requires the use of the Gordon & Shapiro formula. The most important elements of this formula are the discount and perpetual growth rates used. It is important to have in mind the limitations of this formula, such as that perpetual growth values cannot be superior to discount rates since the terminal value would diverge exponentially to infinity.

- Tax rates: The tax rate considered for the company is of 20%. Given the net loss recurring situation of Tesla, until now, but the forecasted improvement on business performance Brokers Reports conservative estimates are of 20% tax rates.

Brand Lifetime: An important assumption to be thought of is the lifetime of the brand. Many intangible assets, such as patents or licenses, have a limited lifespan. However, given the high capital-intensive aspect of the sector, the desire of the founder to create a mass-market product and the statistical longevity of car manufacturing enterprises, we have considered the lifecycle of Tesla Motors, Inc as indefinite. In addition, common sense indicates that; given the company momentum and stakeholder engagement for its future success, any major event that could seriously injure the continuation of the brand would happen at a distant future. Values at that point in time would require the application of large discount rates. Consequently, residual values at that point in time would have marginal effects on the cumulative brand value calculated.

B. Overview of brand valuation methods

1. General brand valuation approaches

Brand valuation methodologies can be classified in the following categories: cost based approach, market based approach, income based approach, psychographic and behaviourally oriented model, composite - behavioural oriented methods, special situation approaches and other valuations approaches. This classification is based on the previous literature and studies of relevant brand valuation researchers.

a. Cost based approach

Cost based approach estimates the value of brand equity by taking into account all the costs incurred to develop it. Some examples may include research and development expenses as well as product improvements, promotions or product improvements amongst others (Salinas 2009). In this section, we will find specific details about the historical cost of creation, replacement cost, reproduction cost and capitalization of brand-attributable expense methodologies.

I. Historical cost of creation

Estimates the brand value by adding together all the historical costs expensed to create it. These costs, which can be found in past income statements, would be: development costs, marketing costs, advertising costs and communication costs, etc. (Kapferer 2012).

$$Brand\ Value = \sum Costs\ incurred\ to\ date - amortization$$

(Reyneke, Abratt & Bick 2014)

According to Anson, Samala & Noble 2014, a more precise approach should always analyse the following cost areas:

- Hard costs: material and asset acquisitions
- Soft costs: engineering time, design time, and overheads
- Market costs: costs of advertising or other costs to build a market for the intellectual property

It is considered as the most conservative method and provides little future orientation as it looks backwards to estimate the brand value. Controversy between accountants and marketers exists over the use of Historical cost as an intangible brand valuation method. On the one hand, it complies with standard accounting practices for valuing assets but, on the other hand, marketers disagree with the approach since it fails to capture value-adding operations achieved through the strategic management of a brand (Seetharamann, Nadzir & Gunalan 2001).

Advantages	Disadvantages	Sources
• According to Anson Historical cost valuation model "can often - but not always - provide a floor minimum value for the brand." • "It can be used for embryonic assets where no specific market application or benefit can be identified."	• Does not consider the brand earning potential. • Does not capture the value added, or lost, by management, that is, the competitive position of the brand. • It can be difficult to recapture all the historic development costs.	Haigh, Hirose, Anson

Table 1 - Historical cost of creation advantages and disadvantages from Salinas & Ambler 2009

II. Replacement cost

Calculated by the addition of the dollar value expenditures and investments required to create a brand with the same characteristics as the studied one (Smith 1997).

The main problem with this valuation approach is that it neglects to take into account already successfully established brands. Moreover, it does not consider the benefit obtained by first/earlier market movers. Usually, early market movers have a competitive advantage over other brands that were not required to overcome the clutter. With each new attempt, the probability of being successful diminishes (Abratt & Bick).

Aaker (1991) suggests dividing the cost of launching a new brand by its probability of success.

$$Brand\ value = \frac{Cost\ of\ launching\ a\ new\ brand}{Probability\ of\ success}$$

(Reyneke, Abratt & Bick 2014)

Advantages	Disadvantages	Sources
• According to Anson, this approach "can often but no always provide a floor minimum value for the brand". • "It can be used for embryonic assets where no specific market application or benefit can be identified" (Anson).	• Not a good future indicator.	Smith, Haigh, Boos, Anson

Table 2 - Cost to replace advantages and disadvantages Salinas & Ambler 2009

III. Reproduction / Recreation / Replication cost

Based on the underlying principle of substitution, which states that the dollar value of intellectual property should not be greater than the cost to acquire that asset (Anson, Noble & Samala). It may seem that differences between reproduction and replacement cost methods is a semantic question but these two terms use very different approaches.

Reproduction cost determines what it would take to construct an exact replica of the brand. Replacement cost establishes what it would take to create or purchase a piece of intellectual property of equal functionality or utility (Anson, Noble & Samala).

This methodology covers much more efficiently difficulties arising from a Historical cost of creation approach. It places one at the present and confronts the problem with the question: since it is not possible to buy the brand under analysis, how much would it cost to recreate it?

Some brands, though, such as: The Coca-Cola Company, Schweppes International Limited or Apple Inc. cannot be replicated. The chances of creating a tomorrow's brand

leader are pretty low and time factors need to be considered. It is more likely to create a local market leader instead (Kapferer 2012).

It is a subjective approach that requires expert opinion and the use of ambiguous procedures. The main goal of brand valuation techniques is not to arrive at a precise value but to get an idea of the economic value (Kapferer 2012).

Advantages	Disadvantages	Sources
• According to Anson, this approach "can often but no always provide a floor minimum value for the brand". • "It can be used for embryonic assets where no specific market application or benefit can be identified" (Anson).	• Not a good future indicator.	Smith, Haigh, Boos, Anson

Table 3 - Cost to reproduce, replicate or recreate pros and cons Salinas & Ambler 2009

IV. Capitalization of Brand-Attributable Expenses method

This approach estimates the brand value as the value of the business attributable to the brand, which is driven by the proportion of accumulated advertising expense over the total marketing expenditures realized, both adjusted by inflation. Total marketing expenses include selling and distribution expenses (Salinas 2009).

Using this approach, brand value will account for the same percentage of business value as the accumulated brand marketing and advertising expenses done (Salinas 2009).

A mix criterion converges in this valuation method to cover for lagging deficiencies, for example: the percentage of residual costs attributable to the brand is used as an indicator of the proportion of the business value attributable to it. This criterion is problematic because it assumes that returns (business value) will be divided proportionally by the "brand investment" and the investment made in other selling and distribution activities (Salinas 2009).

V. Residual Value Method

Residual value according to investment theory is grounded on net asset value ideas. By this model, summarizing all company assets by expenses and deducting engagements results obtains their pure value (Virvilaité & Jucaityté 2008).

The approach estimates the brand value by deducting, to date, the cumulative, brand attributable, costs from revenues (Bekmeier-Feuerhahn 1998).

$$Brand\ value = \sum_{t-x}^{t_0} Brand\ revenues - \sum_{t-x}^{t_0} Brand\ costs$$

A key weakness of this approach, as well as of other cost-oriented valuation methods, is that it fails to account for the brand's future potential success given a verdict entirely based on historical data. These approaches concentrate on inputs when brand value should, in the majority of cases, be measured through outcomes (Jucaityté &Virvialité 2008).

b. Market based approach

According to Salinas (2009), the market approach considers recent transactions (sales, acquisitions, licenses, etc.) that have involved similar brands, and for which transaction price data is available. One of the main challenges this methodology faces, is the need of adjustments to improve comparability to cover for important differences between the subject patent and the benchmark (Smith and Parr 2000).

The main shortcoming of the market-based approach is its necessity of market value. The absence of any brand exchange market makes estimations much harder. Also, there is a lack of opportunities to value brands based on actual selling prices due to a limitation of trading activity for brands (Seetharamann, Nadzir & Gunalan 2001).

However, due to the reason that it uses actual transaction data to the maximum extent possible, other activity of similar assets it is one of the most preferred approaches when necessary data can be found (Anson, Noble & Samala).

Finally, as Salinas (2009) stated in her book, this approach is not only used for valuing assets when the assets are not unique but also when there is a sufficient number of

comparable transactions, the transaction is conducted among independent parties or the transaction is effected on a relevant date.

I. Comparables

The brand valuation approach based on precedent transactions extracts the premium paid for similar brands and applies it to the brands under analysis. For example, if a company has paid twice the revenues for a similar brand, this multiple will be used to value another brand (Reilly and Schweihs 1999).

On the one hand, it is based on third parties' willingness to pay for a similar brand and it is an easy method to apply. On the other hand, it might be difficult to find a comparable brand and available information on the purchase price of brands (Abratt and Bick).

Advantages	Disadvantages	Sources
• Useful where there is enough comparable data	• Data comparability	Smith, Ambler and Barwise, Haigh, Anson

Table 4 - Comparable pros and cons Salinas & Ambler 2009

II. Royalty relief method

It calculates the brand value considering that the company is licensing the brand from a third party. This method entails forecasting the future revenues, applying an appropriate royalty rate to them, and discounting the after-tax royalties to the present value. This discounted value represents the current value of the brand (Salinas 2009).

The method could be also classified as "income-based" or "mixed" since it compares licensing contracts for comparable brands to obtain a range of royalty rates that will be applied to future sales. Income obtained is directly attributable to the brand (Salinas 2009).

As mentioned above, this method is based on the royalty rate that a company would have to pay if it did not own the brand. The NPV is calculated as the discounted sum of the after tax royalty payments that would be saved through owing the asset rather than licensing it from a third party.

$$Brand\ Value = \sum_{1}^{n} \left(\frac{Revenue_i * R_i * (1 - Tax)}{(1 + r_i)^i} \right) + \frac{TV}{(1 + r_i)^n}$$

Where:

Tax: Tax rate

TV: Terminal Value

r_i:Period discount rate

R_i: Period i Royalty rate

The procedure is as follows:

- The branded net sales for a planned horizon is determined: A reasonable timeframe in which revenues are easily predictable is used, normally three to five years. Revenues forecasted have to be associated with the brand calculated. When possible, and it makes sense, forecasted revenues should be computed at a segment level (Lampere 2014).
- Determination of a reasonable royalty rate: A rate that two unrelated parties would have set for the transfer of comparable brands in an arm's length transaction. The royalty rate has a high weight in the overall brand valuation process and a range based in the appropriateness of observable comparable is used (normally obtained through specialized databases). The determination of a royalty rate should consider the relative strength of the brand compared to others. There are many proprietaries, owned by independent brand advisors & consultant companies, methods that take into account measures across all stakeholder categories to assess the relative strength of the brand.
- Application of a fiscal charge in each period to estimate the after tax royalty savings for each.
- Calculation of the discount rate applicable. The rate should take into account the risk of the brand. It can be calculated in different ways, depending on the proprietary method. WACC is normally used but using a brand specific beta so that the K_e properly reflects the risk the brand bears, yields more precise results. Other methods, normally proprietary, take into account Brand Strength Indexes to calculate the discount rate to be used. The reasoning behind this procedure is

that brands with higher relative strengths should have more secure future cash flows.

- Estimate the brand's terminal value. To do so, two methods are used: Gordon Growth formula or exit comparable. The first scenario requires the presence of a discount rate, normally the same previously calculated, and a forecasted brand perpetual growth rate. The second scenario is based on comparable brand multiples.
- Discount of the after tax royalty savings in each period and discount of the Terminal Value to obtain the Net Present Value.

This type of valuation method provides normally for a floor or ground value of the brand since full ownership considerations, i.e. the control price premium is not accounted for.

Advantages	Disadvantages	Sources
• Valuation specific to the industry • Based on traditional brand licensing (for example Smirnoff vodka) practices • Theoretically attractive, since it eliminates the intrinsic difficulty of estimating the profitability and risk differentials attributable to the brand • It has been accepted by numerous fiscal authorities	• Brands, by nature, are unique and not really comparable • Sometimes, the royalty rate not only includes a charge for the use of the brand. The problem is to determine which part of the royalty rate has its origin in the brand and which part in the rest of obligations of the contract. This is why some authors believe that it cannot isolate perfectly the brand value as the royalty rates not only remunerate the brand exploitation, but the supply of raw materials, "know-how" and other	Barwise et al, Aaker, Smith, Ambler and Barwise, Fernandez, Intangible Business, Whitwell, Zimmerman et al, Boos, BBDO, Anson, Salinas

	services to allow the licensee to keep the required quality standard • It may discount the value of 100 per cent control over both the brand and its territorial marketing

Table 5 - Royalty relief advantages and disadvantages, Salinas (2009)

Being the royalty rate the variable that has the most weight in the valuation method, Salinas (2009) identifies four different methods to estimate an adequate royalty rate.

i. Method based on brand strength and market comparable

A range of royalty rates is determined by a comparable research across the industry and sector. To determine a specific royalty rate one must understand the key clauses of every license contract as well as the brand's relative strength. The brand's relative strength is determined by comparing a list of attributes between comparable brands. This is done through a consumer survey. Critics argue that this can´t distinguish between disadvantageous contracts and low awareness brands.

ii. Operating margin differential

Royalty rates are linked to brand operating margins. The operating margin differences between companies that do not possess the brand (generics) and companies that do, help determine the applicable rate.

iii. The Knoppe formula

Formula developed by Helmut Knoppe:

$$Royalty\ rate\ (\%) = \frac{Profit\ of\ licensing * 100}{Sales\ of\ licensed\ product * 3}$$

The formula is based on the principle that business should have the necessary operating margin to properly function after rate expenses have been paid. This formula does not provide for an accurate rate but is rather used as a rule of thumb to check for deviations.

iv. Cluster or group analysis

Multivariate analytical techniques group variables into homogenous clusters looking to maximize intra-cluster homogeneity and minimize inter-cluster homogeneity. Product attributes are clustered in homogenous groups; one of this clusters being the brand. After the clustering, data standardization is applied to later establish the optimal number of clusters. The objective of this procedure is to obtain a cluster with the most appropriate data on the brand. Once the cluster is obtained, the royalty rate range is determined through statistical methods.

III. Brand equity based on equity valuation

Simon and Sullivan (1993) wrote a paper about estimating the value of equity brand by using the financial market value of the firm. Even if based on empirical evidence, its main shortcoming is assuming a very strong efficient market hypothesis (EMH), and that share prices reflect all information. However, Bodie, Kane and Marcus (1999) documented that this is not the case. The level of efficiency changes with the stock market.

The approach has the following five steps:

1. The intangible value is obtained by subtracting the replacement cost of the tangible assets from the market value of the firm (market capitalization plus market value of debt and other securities).
2. Intangible assets valuation will be broken down into the following three components: brand equity, value of non-brand factors (R&D and patents) and industry wide factors (regulations).

3. Brand equity components will be further broken down into two components: a demand-enhancing component and a component that caters for diminished marketing spend (established brand).
4. Demand-enhancing component is computed with the increased market share. The market share will be broken down into two components for brand (function of the order of entry and the relative advertising share) and non-brand factors (company's share of patents and R&D).
5. Reduced marketing costs depend on the order of market entry and the brand's advertising expenditure.

IV. Differential of price to sales ratios

Developed by Damodaran in 1994. As the name indicates, it works from the difference in price-to-sales ratios of two companies. The rationale behind it is that companies with a stronger brand can charge higher prices for the same products: the higher the premium the greater the brand value of the company.

The following formula depicts the methodology applied:

$$Brand\ Value = \left[\left(\frac{P}{S}\right)_b - \left(\frac{P}{S}\right)_u\right] * Sales$$

Where:

$\left(\frac{P}{S}\right)_b$: Price-to-sales ratio of a branded company

$\left(\frac{P}{S}\right)_u$: Price-to-sales ratio of a non-branded company

In order to compute the price to sales ratio, Damodaran (1996) uses the following equation:

$$\frac{P_0}{S_0} = Profit\ Margin * \{A + B\}$$

Where:

$$A = \frac{Payout\ ratio * (1+g)\left(1 - \frac{[1+g]^n}{[1+r]^n}\right)}{r - g}$$

$$B = \frac{Payout\ \ ratio_n(1+g)^n(1+g_n)}{(r_n - g_n)(1+r)^n}$$

Where:

$g\ and\ g_n$: Current and perpetual growth rate

$r\ and\ r_n$: Current and perpetual discount rate (WACC)

n: Year at which you apply the perpetual growth rates

Pablo Fernandez (2001) highlighted in the research paper: "Valuation of brands and intellectual capital" two issues regarding Damodaran's model:

- It is really difficult to estimate the parameters of the generic product. A lack of precision will lead to a non-relevant measure since the output of the model is very sensitive to the assumptions considered.
- Both the branded and the non-branded company is assumed to have the same level of sales. This will unlikely be the case.

To solve the second problem, Fernandez suggests the following formula to tackle different level of sales between branded and non-branded companies:

$$Brand\ value\ = \left(\frac{P}{S}\right)_b * S_b - \left(\frac{P}{S}\right)_u * S_u$$

c. Income based approach

As its name indicates, the valuation method considers future income, profits and cash flow generation that can be allocated to the brand during its expected life. Therefore, an estimation of the future cash flows attributable to the brand needs to be computed and discounted afterwards to the net present value. Income based procedures are fundamentally based on discounted cash flows methodologies (Salinas 2009).

I. Price premium

Incremental profits attributable to a brand are calculated by benchmarking the price of a branded product with an equivalent generic (Seetharaman 2001).

Brand and intangible valuation literature agrees on the premise that a good brand perception among consumers makes a company able to charge a higher price for its products than comparable generic or unbranded ones. As Aaker (1991) stated, direct observation and consumer research are two different ways of measuring the price premium. To calculate the incremental profits, after-tax unit price differentials are multiplied by the sales volume of the product. In the situation of one brand covering more than one product, each branded product is benchmarked with a corresponding equivalent generic or unbranded product. The NPV of the brand will be calculated by discounting the future cash flows (Salinas 2009).

$$Brand\ value = \frac{\sum_1^n (P_{i\ Brand} - P_{i\ Generic}) * Volume_i}{(1 + r_i)^i}$$

Where:

n: Brand life expectancy (in years)

i: Calculated year

P: Price paid for the product

r_i : Discount rate

Advantages	Disadvantages	Sources
• Theoretically attractive since it is universally understandable • Statistical methods used to calculate price differentials are perceived as methods that remove subjectivity inherent to valuation processes	• Difficult to apply from a practical point of view. Not all organizations will be able to conduct this type of analysis, especially if their products are distributed through independent channels that may not be willing to participate in the experiment or if they sell bundled products or services that are difficult to compare with the	Ambler and Barwise, Tollington, Smith and Parr, Zimmermann *et al*, Boos, Salinas

	competitor's offers. • It does not take into account the advantages of cost and volume economies of scale • The application of statistical methods to calculate price differentials does not remove, but "moves", the subjectivity inherent in any valuation process to another level: the selection of the variables or attributes of the product. It can only be supplementary to traditional methods	

Table 6 - Price premium pros and cons Salinas & Ambler (2009)

i. Conjoint analysis

This is a statistical approach to deduce the price premium charged by brands. Through a choice experiment in which consumers are asked how much of a certain attribute they are willing to do without, the utility of a list of product's attributes is determined. The brand is one of these characteristics determined. The strength of this Price Premium method relies on the use of quantitative statistics to reduce subjectivity in calculating the willingness to pay of costumers.

Advantages	Disadvantages	Sources
• Quantitative statistical methods can reduce the degree of subjectivity to which brand valuations are generally prone.	• Restrictive assumptions because the conjoint analysis demands that there are no influences between the brand, the other product	Zimmermann et al. (2001), Kamakura and Russell (1993), as cited in Jourdan (2001)

	characteristics and the price. This prerequisite is hardly realistic, given that the halo effect lends the brand substantial influence over the perception of other characteristics • Subjective moved to a different level: conjoint analysis introduces certain elements of construction and application that makes it largely unreliable for the estimation of fair value of all intangible assets; under certain conditions, it may yield an individual measure of brand equity, but not an aggregate measure at the level of the market or certain segments thereof

Table 7 - Conjoint analysis pros and cons Salinas (2009)

ii. Hedonic analysis

This statistical approach used to deduce the price premium paid consists of a linear regression of product attributes (price, quality, brand etc.) to determine a product price or value. Estimates of the contributory value of each attribute are obtained and used on following stages to calculate the price differential between an unbranded benchmark and the branded product.

Like the Conjoint Analysis this method helps reduce the subjectivity when quantifying people's choices but amongst its main limitations is the large amount of data that is required and its complexity.

$$Price\ of\ the\ asset = \beta_0 + \beta_1 * X_1 + \beta_2 * X_c + \cdots + \beta_n * X_n + \varepsilon$$

Where according to Salinas (2009):

β_0: A constant that represents the part of the price which is not explained by the other individual characteristics of the equation

β_i: Coefficients of the individual characteristics

X_i: Variables representing asset characteristics

ε: Error

Advantages	Disadvantages	Sources
• Quantitative statistical methods can reduce the degree of subjectivity to which brand valuations are generally prone.	• The hedonic method is very complex in both theory and practice, and effectively places the subjectivity judgement inherent in any valuation process on another level; it is in the selection of a product's variable characteristics and associated costs that we see a vast potential for bias. Therefore, this methodology should not replace traditional analyses, but rather complement them	Boos (2003)

Table 8 - Hedonic analysis pros and cons Salinas 2009

II. Demand drivers/brand strength analysis

Also known as "reasons-to-buy". This method analyses the effects of brand strength on supply and demand in order to ascertain the influence of the brand on consumer decision-making and value creation. Even if this approach is statistical, the

determination of the main drivers and its relative relevance is completely arbitrary. It involves the Delphi method as well as quantitative or qualitative market research.

Gabriela Salinas describes two of the most used algorithms to estimate the brand's contribution to income or profits generation:

- Absolute techniques: relies on the percentage of brand-related factors relative to the total number of factors taken into account during the buying process. These are not weighted by importance.
- Relative techniques: there are two manners of using relative techniques. The first technique ranks the main drivers by importance and then determines the relative perception of each of them. The second technique identifies the importance of each demand driver, brand among them. The difference between these techniques is that the first one assumes that the brand has an impact on the perception of every key attribute in the purchase decision whereas the second does not.

Advantages	Disadvantages	Sources
• From a marketing point of view, this method can add value helping to determine the key demand drivers that create value for the firm • It does not always depend on the data of comparable transactions or companies to estimate the proportion of the earning attributable to the brand	• Many of the consultancies that apply this methodology tend to apply a "black box" approach, that is, they do not reveal their estimation algorithms or they apply it in different ways depending on the availability of information. Accordingly, results obtained under this approach may not be comparable. • The resulting index of the demand driver analysis can be applied on different bases (EVA®,	Brand Finance, Zimmermann et al, BrandEconomics, Sattler et al, Brandient, Brand Metrics, InterbrandZintzmeyer and Lux, Kumar and Hansted, Blomqvistm, Mussler et al, A.C. Nielsen, Salinas

free cash flow, Sales etc.)

Table 9 - Demand driver pros and cons Salinas and Amber 2009

III. Comparison of gross margin

This methodology, also known as "Economies of Scale method", captures the value of the economies of scale that are attributable to the brand equity. This value is computed by multiplying the net sales corresponding to the brand by the difference between the gross margin of the firm and the one averaged by a set of comparable competitors.

According to Smith, the following equation gives us the economies of scale earnings that can be attributable to the brand (Smith Year).

$$ESE_m = (GM_m - GM_c) * S_m$$

Where:

GM_m: Gross margin corresponding to the business associated to the brand m

GM_c: Average gross margin obtained by the set of comparable competitors

S_m: Net sales of the business associated to the brand m

Advantages	Disadvantages	Sources
• It allows the valuation of brands that do not have price advantage, since it also considers the cost advantage	• It does not take into account any variables that can influence the operating margin other than brand, and thus may under or over-value the brand. But proponents of the inclusive brand definition would regard that as an advantage	Smith

Table 10 - Comparison of gross margin pros and cons Salinas and Amber 2009

IV. Comparison of operating profit

It is similar to the comparison of gross margin method but it uses EBIT instead of gross margin. Therefore it is more complex to apply as it considers a wider spectrum of brand equity advantages. The brand value is computed by discounting the after-tax operating profit attributable to the brand to the present value.

This approach is mathematically expressed as follows:

$$EBIT_m = \left[\left(\frac{EBIT}{S}\right)_m - \left(\frac{\sum_{i=1}^{n}\left(\frac{EBIT}{S}\right)_i}{n}\right)\right] * S_m$$

Where:

$EBIT_m$: Brand's operating profit

$\left(\frac{EBIT}{S}\right)_m$: EBIT margin of the brand business

$\left(\frac{\sum_{i=1}^{n}\left(\frac{EBIT}{S}\right)_i}{n}\right)$: Average EBIT margin of the comparables

S_m: Branded sales revenue

Advantages	Disadvantages	Sources
• It takes into account more brand advantages than the "economy of scale" and "price premium" techniques (lower promotion costs, administration expenses and other expenses not included in the cost of sales)	• There may be other variables apart from brand that influence the operating earnings, and this is why this methodology may under or over-value the brand	Smith, Smith and Parr

Table11 - Comparison of operating profit pros and cons Salinas and Amber 2009

V. Comparison with theoretical profits of a generic product

This model computes the brand value by multiplying a multiple by the difference of operating profits between the branded company and the unbranded one. Salinas highlights three approaches that are based on this technique: these developed by Financial World, Interbrand and Global Brand Equity.

There are two ways to calculate the profits attributable to the brand:

- By subtracting the EBIT for a generic product from the EBIT of a branded one. The profits calculation for an equivalent generic product assumes a 5% ROCE and a capital employed to sales ratio equivalent to the industry average.
- By subtracting the EBIT for a generic product and the remuneration of the resources from the branded business EBIT.

The following formula explains the EBIT calculation of an equivalent generic product:

$$EBIT_{eq} = Med(CE/S)_s * S_m * ROCE(5\%)$$

Where:

$EBIT_{eq}$: EBIT of the generic product

$Med(CE/S)_s$: Median capital employed to sales ratio

S_m: Sales of the branded products

$ROCE(5\%)$: 5% assumption on return of capital employed for a given generic product

Advantages	Disadvantages	Sources
• Conceptually, comparing profits of the branded company with those of the unbranded company is sound.	• The disadvantages of this method lie in its application, given that obtaining reliable data and estimations for the unbranded company can be difficult. • The quantification of the EBIT differential	Fernández 2009

	involves a highly subjective procedure.	

Table 12 - Comparison with theoretical profits of a generic product pros and cons Salinas 2009

VI. Cash flow or income differential with a benchmark company ("subtraction approach")

The cash flow differential with a benchmark company technique undertakes the assumption that the difference in net cash generation between the company analyzed and that of comparable companies without a trademark is due to the brand factor.

Advantages	Disadvantages	Sources
• One could argue that the primary advantage of this method is its simplicity; however, this simplicity is jeopardized by the fact that cash flow differentials cannot reasonably be attributed exclusively to the brand.	• This approach does not consider other variables that may contribute to cash flow differentials. • According to Smith and Parr (2005: 259), in everyday practice, it is difficult to find an unbranded comparable company (i.e., one that has the same mix of monetary, tangible and intangible assets). Even generic products can have significant associated intangible assets (for example, a long-term contract with a private-label distributor) • In practice, the unbranded comparable company might have higher returns or cash flows than those of the branded company.	

	Would this indicate that the brand being studied has no value? The earnings of the branded company may be lower for many reasons unrelated to the brand's contribution	

Table13 - Cash flow or income differential with a benchmark company pros and cons Salinas2009

VII. Incremental cash flow ("value of the company with and without the brand")

It is a valuation technique in itself. To obtain the brand value, this approach computes the difference between the value of the business with and without brand through a DCF methodology. The income generated by the brand is estimated with the brand effect on different value drivers, which can be reflected in an increased growth rate, increased advertising expenses and lower risk.

Advantages	Disadvantages	Sources
• Conceptually, it is consistent with exclusive definition of a brand	• Difficult to find a comparable company with the same mix of intangible, monetary and tangible assets and that sells unbranded products	Lamb, Smith

Table 14 - Incremental cash flow pros and cons Salinas and Amber 2009

VIII. Free cash flow less required return on tangible assets (Salinas)

This methodology states that the free cash flow attributable to the brand is computed by subtracting the free cash flow from tangible and intangible non-brand-related assets from the firm's free cash flow.

Advantages	Disadvantages	Sources
• It eliminates the need to use comparative data from other transactions involving brands	• The free cash flow attributable to the brand is similar to the EVA® concept, but replaces the flow attributable to the unbranded company by the assets used by the branded company times their required return	Fernández, Kam and Angberg

Table 15 - Excess cash flow pros and cons Salinas and Amber 2009

IX. Excess earnings

The excess earnings methodology determines the excess earnings on all intangible assets as the firm's total rate of return less the normal returns on tangible or financial assets. It is therefore an appropriate approach to compute the value of brand equity. A deep analysis needs to be done in order to come up with the proportion of excess earnings attributable to the intangible assets.

Salinas outlines three variations of this technique:

- "The formula approach": this technique values the intangibles as the excess return over a tangible assets fair rate of return. According to Pratt (2002: 178), "the formula approach" has seven steps:
    1. Historical pre-tax earnings need to be normalized to recalculate taxes.
    2. Estimate the value of the net tangible assets.
    3. A reasonable rate of return needs to be determined to compute the net tangible assets. If the information is not available, an 8% or 10% rate of return is a good proxy.
    4. Obtain the "reasonable margin" by multiplying the reasonable rate of return from step 3 by the company's net tangible assets value from step 2.
    5. Excess earnings are calculated by subtracting the normalised rate of return (step 4) from the normalised net earnings.
    6. Capitalisation rate computation. This value will fall at 15% or 20% depending on business risk.

7. Capitalize excess earnings

- Baruch Lev's intangibles scoreboard: This methodology developed by professor Baruch Lev is based on the excess earnings method. The main difference is that he sets the after-tax fair rate of return at 7% and 4.5% on physical assets and financial assets respectively (Hofmann 2005). The margin in excess of the 7% and the 4.5% is the intangible assets driven margin.
- Analysis of required ROI: This technique was presented by Smith (1997). It does not assign a fixed return to the tangible assets but allocates the intellectual property driven earnings among various intellectual property assets. This earnings allocation process is done according to each asset relative value and risk. The earnings attributable to brand will be isolated based on the other asset's returns.

Advantages	Disadvantages	Sources
• Conceptually, it is consistent with the exclusive definition of a brand which excludes the underlying product	• In the case of companies with strong brands and many obsolete tangible assets in books, the brand would be undervalued due to the high technical yield that would be allocated to the tangible and financial assets of the companies. Subjectivity in the determination of the required return of each intangible asset. • The allocation of the margin to each intangible asset is still subjective and arbitrary since the return on the tangible assets is considered fixed	Smith, Pratt, Andriessen

Table 16 - Excess margin pros and cons Salinas and Amber 2009

X. Firm value less value of net tangible assets

This methodology is also a valuation method in itself. AASB (2001) states that in order to come up with the brand value, first it is necessary to compute the firm value and then subtract the fair value of the intangible assets used by the entity.

Advantages	Disadvantages	Sources
• According to Lonergan (1998) this approach can be useful to set a maximum upper limit of the brand's value (p. 269 as cited by AASB, 2001)	• According to the AASB (2001), this approach assumes that aside from the brand, there are no other intangible assets (identified or not identified) used in the company or operation, or that these other intangible assets have no value	Lonergan (1998)

Table 17 - Firm value less value of net tangible assets pros and cons Salinas and Amber 2009

XI. Real options

Salinas describes financial options as contracts that convey the right but not the obligation to buy or sell an asset at a previously fixed price over an agreed period of time or at a given date. Moreover, she states that the real options theory applies financial option valuation tools to non-financial assets. Assets are treated as options that will generate more options so cash flow is exercised.

"A brand can be considered as an asset that currently provides certain margins per unit that are higher than those of an unbranded product and a differential volume, and which also provides the brand's owner certain real options for future growth" (Fernandez 2001). These options can be geographical growth, growth through additional differentiation, growth through the use of new formats, etc.

This methodology is useful when there is an absence of comparable transactions that can be applied for valuing brand equity (Torres 2006). However, as Lamb (2002) stated, investment banks do not apply this approach to value brand equity.

To value the real option, the following parameters need to be determined:

- Risk-free interest rate (r_f)
- Underlying asset's implicit volatility (σ^2)
- Current strike price (E)
- Current market price of the underlying (S)
- Expiration (t)

This methodology assumes that the brand owner has the chance to terminate or renew the license once the contract expired. In this approach, the current strike price of the option is the cost of developing the brand and the value of the underlying asset is the value of the cash flow from the licensing contract.

Advantages	Disadvantages	Sources
• It requires users to be clear about assumptions used in forecasts. Especially useful where real options are otherwise employed in planning.	• The assumption required makes the application of this methodology very difficult.	

Table18 - Real options pros and cons Salinas and Amber 2009

Salinas highlighted two alternatives methods of applying the real options valuation approach.

i. Binomial method (time as a discrete variable)

With the implicit volatility of the underlying asset, the binomial method describes two scenarios with different prices. As Salinas outlined in her book, Woodward (2003) organises the binomial method in four steps:

1. Draw a tree diagram with all the possible scenarios.
2. Take into account the probability of each scenario and use the utility function to compute the expected value.
3. Select the scenario that maximises the utility function.
4. The last step is to discount the value by using the weighted average cost of capital.

Advantages	Disadvantages	Sources
• This model is more intuitive and flexible than the Black-Scholes model and is simplified because the underlying asset can only move between two possible price levels within a short period of time. • Given that the binomial model allows for the estimation of the option's value at any point of its life, the advantage this model has over the Black-Scholes model is that it may be used to calculate the value of American options, which can be exercised at any time.	• This method requires laborious calculations. For example, the risk associated with the asset fluctuates with time, and the discount factor must be adjusted in function of the varying risk, which further complicates the process.	

Table19 - Binomial method pros and cons Salinas 2009

ii. Black-Scholes model (continuum)

Applies the Black-Scholes formula to calculate the value of the call option:

$$c = s\varphi(d_1) - xe^{-rt}\varphi(d_2)$$

$$d_1 = \frac{\ln(s/x) + (r + \sigma^2/2)t}{\sigma\sqrt{t}}$$

$$d_2 = d_1 - \sigma\sqrt{t}$$

Where:

S is the price of the underlying asset

X is the strike price

r is the risk-free rate

t is the time to expiration

σ is the implicit volatility of the underlying asset

φ is the standard normal probability density function

Advantages	Disadvantages	Sources
• Speed is often considered an advantage of this technique, but it applies more to shares, because estimating the parameters for real options can be very time consuming.	• It is difficult to determine all the parameters needed to apply this equation. • While the equation assumes a single exercise date (European options), this is not always the case in real situations.	

Table 20 - Black-Scholes pros and cons Salinas 2009

d. Psychographic and behaviourally oriented model

The psychographic and behaviourally oriented model was developed by authors like Aaker, Kapferer and Keller.

I. Aaker brand valuation model

Aaker (1991) identifies the following five elements that create brand equity:

1. Brand loyalty
2. Brand awareness
3. Perceived quality
4. Brand associations
5. Other proprietary brand assets

These elements provide value to customers and enhance their product satisfaction and confidence in the purchasing decision. Moreover, it also provides value to the firm as it

improves marketing efficiency, leverage in trade, margins, brand extensions and competitive advantage (Reyneke, Abratt and Bick 2014).

Virvilaitè and Jucaitytè (2008) criticize this model since the psychographic phenomenon is not converted into monetary value.

II. Kapferer brand valuation model

Kapferer builds his model based on the assumption that the brand equity value lies in a tacit contract between the brand and its customers, "trading" reassurance for loyalty. The brand reduces the transaction risk for both the producer and the customer (Virvilaitè and Jucaitytè 2008).

The stronger the brand, the less the customer-purchasing risk and therefore, the less the need for the brand to differentiate its product (Reyneke, Abratt and Bick 2014).

However, this factor does not take into account changing customer values, competitors' strategies or other factors that can have an impact on brand value growth (Virvilaitè and Jucaitytè 2008).

III. Keller brand valuation model

This model assumes that the true future of brands relies on the purchasing power of consumers. As Kotler and Keller (2009) said, they are the ones deciding which brands have more brand equity than others. More specifically, Keller (2013) defined brand value as the differential effect of brand awareness and brand image on the consumers' decision-making process (Reyneke, Abratt and Bick 2014).

Virvilaitè and Jucaitytè (2008) conclude that customers and their attitudes and behaviour are the focus of Keller's grouping.

e. Composite economic - behavioural oriented models

As the name indicates, these kinds of models link both the economic point of view with the psychographic one. To compute the income attributable to the brand, the market share is calculated and a detailed analysis on customers is performed. Even if composite

economic-behavioural oriented models reflect brand valuation influencing factors, more detailed economic and behavioural factors are still missing (Virvilaitè and Jucaitytè 2008).

These methods were studied by Interbrand, Schulz, Brandmeyer (1989), Semion (1998), Sattler (1997) and Bekmeier Feuerhahn (1998).

I. Integrated model

It is the first major model in this category and was developed by Virvilaitè and Jucaitytè (2008). Their main objective was to find a balance between the traditional company-based models and the customer-based ones (Reyneke, Abratt and Bick 2014).

To develop the Integrated model, economic, pshychographic and behaviorally-oriented, and composite economic and behaviourally oriented brand valuation methodologies are joined (Virvilaitè and Jucaitytè 2008).

This integrated model could be split in three main parts:

- The brand value from the consumers' perspective is computed by using the Aaker's (1991) brand valuation model, which includes brand loyalty, brand awareness, perceived quality, brand associations and brand capital. Each element is graded between 0 and 20 and then summed up obtaining an overall rate between 0 and 100. According to Aaker, a brand valuation in points is achieved.
- The second step is to estimate the brand value (Bv) from the company's perspective. Contrary to the first step, here a currency value is obtained. According to Simon and Sullivan´s brand valuation model, the brand value is obtained by subtracting the asset value of the company from the market capitalisation.
- A second brand valuation in points is estimated by comparing the market capitalisation to accountant price ratio (P/Bv) of different market members. The strongest brand will obtain 100 points and the rest of the brands will obtain a value according to their P/Bv relation to the strongest P/Bv.
- An average of the two points evaluations is computed and classified as follows: weak if the value obtained is 0-40, moderate if 40-80 and strongest if 80-100.

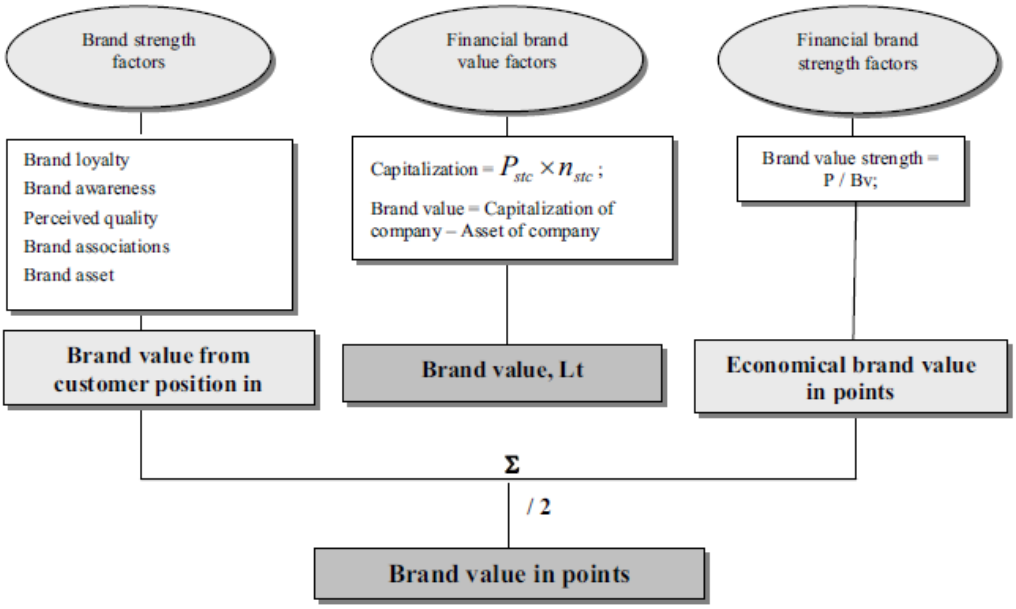

Figure 1 - "Integrated model of brand valuation constructed on the ground of market-oriented brand valuation model by Aaker (1991), Simon and Sullivan (1993) (Virvilaitè and Jucaitytè 2008)."

II. Swiss based International Organisation of Standards (ISO) 10668

This methodology results from an attempt to provide consistency. As Catty (2011) stated, it is a new standard with eight underlying themes that includes transparency, validity, reliability sufficiency, objectivity, parameters and purpose; all of which are considered best practice standards (Reyneke, Abratt and Bick 2014).

f. Formulary approaches

"Formulary approaches consider multiple criteria to determine the value of a brand. While similar in certain respects to income-based or economic use approaches, they are included as a separate category due to their extensive commercial usage by consulting and other organisations" (Abratt and Bick).

Baumann, Gray and Mirzaei (2011) have identified several formulary brand equity valuation models applied in the commercial sector and questioned their subjectivity.

I. Interband approach

Based on the Brand Earnings approach, the Interbrand model determines the earnings from the brand and capitalizes them after making some adjustments (Keller 1998).

According to Abratt and Bick, the Interbrand model forecasts the profit and deducts the capital charge in order to determine the EVA (Economic Profit) and then the "brand index". The "brand index" is based on the following items:

- Market (10%): is the market stable? Is the market growing? What about the barriers to entry?
- Stability (15%): long lasting brands with ability to command consumer loyalty
- Leadership (25%): leading brand in its market
- Trend (10%): towards where the brand is moving?
- Support (10%): support received by the brand
- Internationalization/Geography (25%): international brand strength
- Protection (5%): firm ability to protect the brand

The strongest point of this methodology is that it takes into account all the aspects that influence brand equity and that it is widely accepted. The major drawback is that it compares apples with pears (Abratt and Bick).

Controversy arises when it comes to apply the international component over the local brand earnings. Therefore, two valuation approaches are muddled: "in use" and "open market" (Abratt and Bick).

Another weak point is the difficulty to determine the appropriate discount rate. Moreover, Aaker (1996a pg 314) states that "[...] the Interbrand system does not consider the potential of the brand to support extensions into other product classes. Brand support may be ineffective; spending money on advertising does not necessarily indicate effective brand building. Trademark protection, although necessary, does not of itself create brand value" (Abratt and Bick).

II. BrandZ valuation methodology

"BrandZ is the only brand valuation tool that peels away all of the financial and other components of brand value and gets to the core - how much brand alone contributes to corporate value (BrandZ)."

According to BrandZ, this methodology is classified in the following three steps:

- The first step in which the financial value is computed is divided into part A and part B:
    - Part A: it starts with the corporation and the identification of its brand portfolio to understand from which brands the earnings of the corporation come from. In order to do an accurate allocation, this methodology analyzes the annual reports and other sources such as Kantar Worldpanel and Kantar Retail. This first analysis provides the attribution rate. Finally, by multiplying the earnings of the firm by this attribution rate the branded earnings are obtained.
    - Part B: this second part forecasts the future earnings with a multiple of current earnings called the Brand Multiple. It is similar to the traditional valuation method by comparable multiples. With the Branded Earnings and the Brand Multiple, the financial value is obtained.
- The second part estimates the brand contribution. After having computed the value of the branded business as a proportion of the total value of the corporation, in this second step rational factors that influence the value of the branded business such as price, convenience, availability and distribution are peeled away."Because a brand exists in the mind of the consumer, we have to assess the brand's uniqueness and its ability to stand out from the crowd, generate desire and cultivate loyalty. We call this unique role played by brand, Brand Contribution (BrandZ)".
- In this last part, the Brand Value is calculated by multiplying the Brand Contribution, expressed as a percentage of the Financial Value, by the Financial Value.

III. Financial World Method

This approach is applied by the Financial World magazine and uses the Interbrand Brand Strength multiplier. To compute the premium profit attributable to the brand, this method deducts the earnings from a comparable unbranded product from the operating profit attributable to the brand. According to Keller (1998), to estimate the earnings from a generic product one can estimate a 5% net return on capital employed. The obtained premium is adjusted for taxes and multiplied by the brand strength index.

IV. Brand Equity Ten

The concept of Brand Equity Ten was introduced by Aaker. It comprises ten components spread across five dimensions to value brand equity:

- Brand loyalty: price premium and customer satisfaction or loyalty
- Perceived quality/leadership measures: perceived quality and leadership or popularity
- Associations/differentiation: perceived value, brand personality and organisational associations
- Awareness: brand recognition and recall
- Market behaviour: market share, market price and distribution depth of the brand

"This study attempts to operationalize brand equity and create a standard measure of it that could be used across products and markets to measure brand equity" (Gill and Dawra, 2010). This analysis also provides an indication towards a set of items that contribute to brand value but nobody knows how and which of these should be combined to capture brand equity. Therefore the reliability and validity of these items are one of the unanswered questions of the Brand Equity Ten model (Gill and Dawra 2010).

V. Brand Finance Method

This methodology has been developed by a UK consulting organisation called Brand Finance Limited. According to David Haigh in Jones (1999) it is based in the following four elements:

- Total market modelling: position of the brand in the context of a competitive market place
- Specific branded business forecasting: total business profits from the brand analysed
- Business drivers approach: value addition of the earnings attributed to the brand
- Risk review: assess the "Beta" risk factor associated with the profits

Through this methodology, the brand value is estimated by assessing the brand added value after tax, and discounting this at an appropriate rate that reflects the risk associated to the brand (Abratt and Bick).

g. Special situation approaches

These approaches acknowledge the fact that brand valuation might be related to particular circumstances that are not consistent with external or internal valuations. As Bradley and Viswanathan (2000) highlighted, a strategic buyer might be willing to pay a premium over the market price of a firm. This is the result of the control premium and the synergies that some buyers are able to achieve whereas others not. Each case needs to be analysed individually taking into account the level of synergies that every potential buyer can obtain and how much of this value can be attributed to the seller (Abratt and Bick).

The liquidation value is the value attributable to an asset in a distress sales scenario. The valuation will be considerably lower than in a willing buyer and seller parties' agreement. While determining the monetary value of an asset, the liquidation costs should be deducted (Abratt and Bick).

According to Abratt and Bick, if an asset needs to be valued for special purposes, the method required by the assessing authority should be applied. This will make sure that all the requirements are met.

h. Other valuation approaches

The following valuation approaches are alternative methods of valuations. Some of them are variations of traditional valuation methods and some others are new

methodologies developed to solve issues of valuing complex assets (Anson, Noble and Samala 2014).

Anson, Noble and Samala (2014) also state that due to the fact that brand valuation is a young discipline, methodologies continue to be refined, updated and expanded.

I. The Brand Value Equation Methodology

The BVEQ™ is based on the assumption that for valuing intangibles and intellectual property more than one asset should be involved. With this methodology, the brand value is computed by summing the core brand value of the trademark with the incremental assets attached to this core asset (Anson, Noble and Samala 2014). The mathematical expression of the BVEQ^{TM} is the following:

$$BVE_Q = CBV + IVE_1 + IVE_2 + \ldots + IVE_n$$

II. The competitive advantage technique

This approach is recommended for valuing the brand equity of companies that have a complex portfolio of intellectual property. The competitive advantage can be calculated with the market share, the market growth, higher competitive pricing or other references.

"While individual pieces of intellectual property within the overall portfolio may be difficult to measure, this approach allows one to estimate the value of the entire portfolio as used in one or more business units of a corporation" (Anson, Noble and Samala 2014).

III. The concept of relative incremental value

This concept should be applied when someone wants to estimate some percentage of value of an individual asset associated with a larger trademark. If a brand has a value of €100 million, and the domain name associated with it is generation 20 % of the sales, then one can state that the value of the domain name is €20 million (Anson, Noble and Samala 2014).

IV. Decremental Cost Savings Valuation

If a firm can quantify lower levels of operating costs directly related with its intellectual property, those lower costs can be added to the valuation of the specific intellectual property. In other words, the decremental cost savings valuation method quantifies a decrease in the level of costs being realized by the owner of the intellectual property (Anson, Noble and Samala 2014).

V. Enterprise Value Enhancement

The enterprise value enhancement is a variation of the traditional income method approach for intellectual property. In this case, the brand value is the difference between the enterprise value including the intellectual property and the enterprise value excluding the intellectual property (Anson, Noble and Samala 2014).

VI. Income capitalisation or direct capitalisation methodology

This method is used to determine the value of intellectual property that has no predetermined statutory expiration (trademark) and for which net income (royalties or profit) is expected to remain constant without substantial variations over time (defined license fees). The brand value is computed by multiplying the expected annual royalty stream by the capitalisation rate (Anson, Noble and Samala 2014).

VII. Income differential analysis

The brand value is based on the difference in income of a first-tier and a second-tier company. This income differential will be capitalized over several years totalling the value of the intellectual property (Anson, Noble and Samala 2014).

VIII. Liquidation value

It is a floor value under which the valuation will not fall. However, it is important to keep in mind, that in a liquidation scenario, every month the intellectual property value can decrease up to 10% or even more (Anson, Noble and Samala 2014).

IX. Monte Carlo analysis of value

The Monte Carlo analysis of value runs different valuations according to different potential scenarios and takes into account their probability. Usually around 1,000 potential scenarios are considered in the Monte Carlo method. The result of this study is a distribution of present values of the future scenarios and therefore one can predict the first, second, third and fourth quartile values (Anson, Noble and Samala 2014).

X. Premium pricing analysis

It is based on the comparison of prices between the branded asset and the average product in the market to project an annual basis and to establish a net present value (Anson, Noble and Samala 2014).

XI. Profit split methodology

The profit split methodology is difficult to apply since it attributes a share of a firm's profitability to a particular intangible asset. Therefore this methodology requires the a deep understanding of the intellectual property so that the intangible profit generation can be isolated from all the other business assets. Once this is done, the profit split will be capitalized over a number of years (Anson, Noble and Samala 2014).

XII. Rules of thumb

All rules of thumb are faulty. Having said that, it is important to highlight that some rules of thumb used by some practitioners in intangibles valuation cannot be supported (Anson, Noble and Samala 2014).

XIII. Subtraction method of value or benchmark method of value

"If the value of the company without the branded product is €200 million, and the value of the company with the branded product is €300 million (on a comparable level of sales), then the subtraction theory says that the value of that particular trademark is the difference between the two, or €100 million (Anson, Noble and Samala 2014)."

XIV. Valmatrix analysis technique

It is a proprietary system that employs a matrix of the 20 most important and unique predictors of value for a trademark, patent or piece of software. They are used to rate a given intellectual property asset against its peers on a numerical scale. The brand value is therefore established on a relative basis (Anson, Noble and Samala 2014).

C. Discount rate for brand valuation (WARA)

As already stated, one of the main valuation methods used to determine the value of an intangible asset is the DCF approach. The International Accounting Standards Board states that under circumstances of which it is not possible to determine the fair market value of an asset based on its active market price, which is the case of the majority of brands and other intangibles, then the DCF method should be used. The objective is to provide the most reliable and precise market value of an asset in the balance sheet. All intangible asset value corrections should be done through impairment losses on the income statement and their corresponding depreciation at the balance sheet.

One of the main issues of discussion among valuation practitioners using the DCF approach to value intangible assets is the discount rate which should be applied to the future cash flows provided by said asset. It is difficult to capture the inherent risk of intangible assets. Many proxies have been used and suggested but Schauten, Stegink & Graaff in their article "The discount rate for discounted cash flow valuations of intangible assets" highlight the following ones:

a. Weighted Average Cost of Capital (WACC)

Using the WACC of an enterprise as a proxy is not correct. The main assumption is that the risk of the assets determines the capital structure of a company, i.e. ROCE drives WACC. Following the line of thinking, if it is possible to determine the WACC of a business, mainly through the balance sheet, then it is possible to determine the ROCE of the enterprise and therefore the discount rate that an asset should use to calculate its net present value by means of the forecasted cash flows it has. However, this hypothesis does not take into account that the WACC reflects the average systematic business risk. A business is formed by different assets that have different systematic risks and the weighted average of all these risks gives the ROCE of the company which, based on the assumption ROCE = WACC, determines the WACC of the enterprise. So it makes no sense for a low liquid asset, with low convertibility/versatility and without collateral to have the same risk as the weighted average of risk of an enterprise. It is clear that it will always be higher than the risk of tangible assets. Using the WACC as a proxy for the discount rate would greatly underestimate the risk beared by tangible assets (Reilly and Schweis 1999).

b. Unlevered cost of equity

Using the unlevered cost of equity as a proxy was first proposed by Smith and Parr (2995). It is assumed that the intangible assets are, in most cases, funded with equity, since their risk is too high for debt investors to invest in. There is no certainty of payments and due to its characteristics as a low liquid, low versatile and non-physical asset its market value varies greatly. This high volatility makes it more prone to impairment corrections than tangible assets. Without taking into account convertible debt and other type of derivatives, debt holders will generally not invest in the funding of intangible assets.

However, Schauten, Stegink and Graaff (2010) in their empirical study arrive to the conclusion that using the levered cost of equity as a proxy was the best estimate for the WARA.

c. Levered cost of equity

This metric is the most approximate proxy to the WARA (considerate as the most accepted method), developed in the following section which takes into account the additional risk arising from debt funding the other assets of the company. Though the objective is to find out the required compensation arising from the systematic risk of the intangible asset in question, it makes more sense for this metric to have a higher value than the unlevered cost of equity and the WACC of the enterprise. Therefore it makes more sense for this metric to have a higher degree of accuracy.

But the main method, agreed by many experts, used to assess the risk of an intangible asset and therefore used as a discount rate for the forecasted cash flows provided by the brand in the DCF method is the Weighted Average Return on Assets (WARA).

d. The Weighted Average Return on Assets (WARA)

In practice, the majority of brand valuation companies use proprietary methods but the WARA method is viewed as the most reliable method to calculate the discount rate applicable for brand valuation (Smith and Parr 2005). This approach is based upon the theoretical assumption that WARA = WACC. Therefore, it is possible to obtain the required rate of return for the intangible asset valued.

The Smith and Parr (Smith and Parr 2005) method states that given the equation:

$$WACC = \frac{Vm * Rm}{Vbev} + \frac{Vt * Rt}{Vbev} + \frac{Vi * Ri}{Vbev}$$

Where:

WACC: Weighted Average Cost of Capital

Vm, Vt and Vi: Fair market values of the monetary, tangible and intangible assets

Rm, Rt and Ri: Relative rates of return associated with the business enterprise assets

Vbev: Fair market value of the business enterprise. Basically, the addition of Vm, Vt and Vi.

It is possible then to isolate Ri, which gives the risk associated with the intangible asset and the discount rate that should be applied for the DCF brand valuation method, if all the other components are known.

Schauten, Steginк&Graaff discuss in their article the discount rate for discounted cash flow valuation of intangible assets and argue that a more correct approach should be including the present value of tax shields as a separate asset category. The following figure 2, taken from their article segments the enterprise balance sheet, at market value, in its individual components.

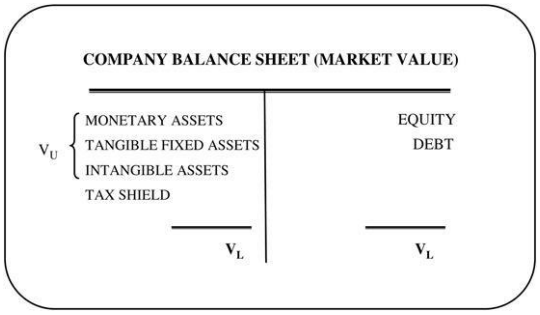

Figure 2 - Company balance sheet in market values

So the Smith and Parr (2005) equation is converted into the following:

$$WACC = Re * \frac{E}{E+D} + Rd * \frac{D}{E+D}$$
$$= \frac{Vm * Rm}{Vbev} + \frac{Vt * Rt}{Vbev} + \frac{Vi * Ri}{Vbev} + \frac{Vvtps * Rpvts}{Vbev}$$

Where:

WACC: Weighted Average Cost of Capital before tax

Vm, Vt, Vi and Vpvts: Fair market values of the monetary, tangible, intangible assets and present value of tax shields

Rm, Rt,Ri and Rvtps: Relative rates of return associated with the business enterprise assets

Vbev: Fair market value of the business enterprise. Basically, the addition of Vm, Vt and Vi.

And:

$$Vbev = Vl = E + D = Vu + Vpvts$$

By including the present value of the tax shield of a company as an asset in the balance sheet we avoid the underestimation of the required rate of return of intangible assets caused by an initial underestimation of the WACC.

Isolating the required rate of return of intangible assets, Ri, the following equation is obtained:

$$Ri = \frac{Vbev * WACC - Vm * Rm - Vt * Rt - Vvtps * Rvtps}{Vpvts}$$

To calculate the independent variables comparable proxies are used:

- WACC: The company before tax using the CAPM and the levered cost of equity is used
- Rm: The required return on monetary assets is determined by using comparable returns of similar liquid assets of similar maturity and risk, such as retail bank deposits rates.
- Rt: The required return on tangible assets is dependent on the components that form it but the Real Estate Investment Trust indexes are accurate rates that can be used.
- Rvtps: The marginal tax rate applicable to the company, dependent on the country of incorporation of the company.

- Vpvts: The present value of the tax shield assuming a constant debt interest rate, as well as a constant company leverage, over time.

D. Case study: valuation of the TESLA brand

a. The choice of Tesla

Tesla Motors, Inc. is probably one of the most attractive brands in the automotive industry at the moment. Its innovative nature and technology together with a great design have caught the attention of people from all over the world. Tesla has just launched a new Model 3 and received thousands of pre-orders becoming one of the most popular brands in this industry at this early stage of their development.

The fact that Tesla is a public and listed company is another key element that helped in the final decision of the choice. Tesla is reporting on a regular basis to its investors and different brokers have already undertaken research about the firm. All this public and available information has been used to develop this research paper.

With the choice of Tesla, we are looking to face the main challenges of analysing a start up company in an innovative industry such as the electric vehicle one:

- Being a start up means that the assumptions made will play a major role in the calculation of its brand equity.
- The electric vehicle industry is a new industry, which has not been subject to a lot of research yet and there is a lack of comparable companies for Tesla. Moreover, there is no M&A activity.

Finally, Tesla is a company with only one brand, making its valuation easier than other company groups with more than one brand such as Volkswagen. In their case, it would be very difficult to split the company data by brand (Volkswagen, Audi, Porsche, etc.).

b. Tesla's business highlights

I. Company history and description

Tesla Motors, Inc. was set up in 2003 by a group of engineers in California with the aim to demonstrate that electric vehicles could perform better than fuel powered cars. Since then, the company has been manufacturing cars with the following features that increased their reputation: instant torque, incredible power and zero emissions.

The strategy of the company was to first produce a fully electric premium sports car (Tesla Roadster) and then evolve towards a more affordable brand with the introduction of the Tesla Model 3.

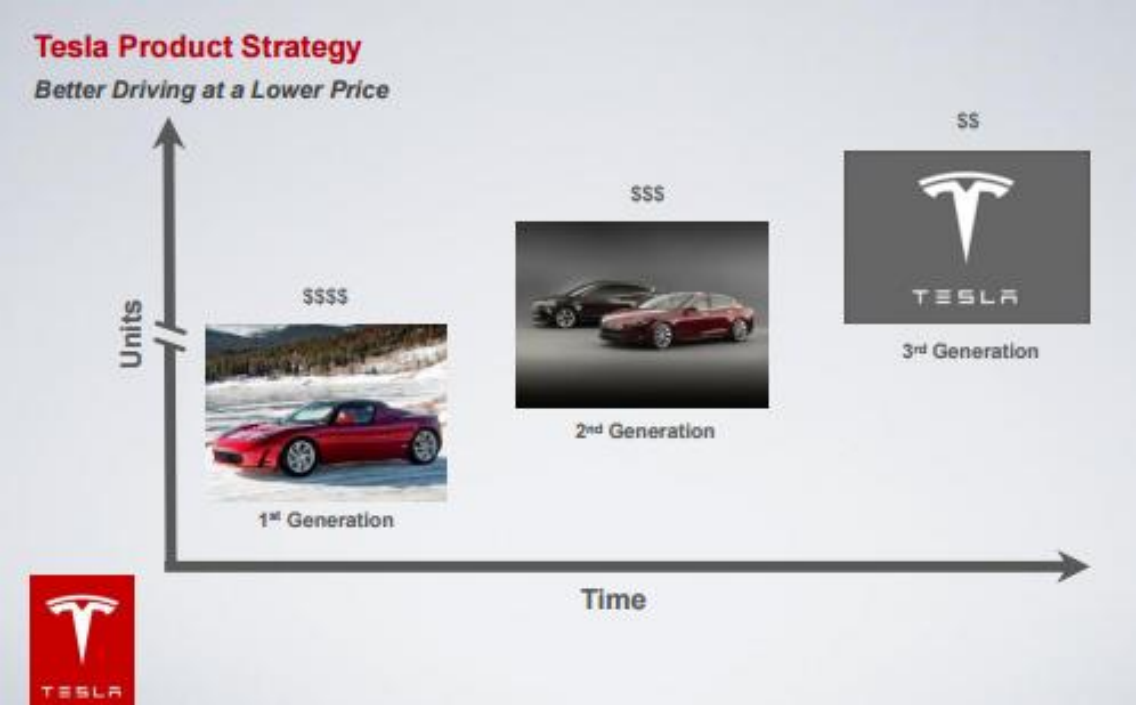

Figure 3- "Tesla Product Strategy" from Tesla Motors Investor Presentation - January 2014

On the 29th June of 2010, Tesla raised $226[2] million through its initial public offering, the first IPO of a US automaker (Ford Motor Co.) since 1956. The proceeds from the IPO helped in funding the payment of factories, potential acquisitions and the production of Model S.

Nowadays, Tesla produces and sells two fully electric vehicles, Model X and Model S, and has just presented the Model 3, a lower price vehicle for the mass market. Its production and deliveries will start in late 2017 or early 2018 in case of delay. These vehicles are sold through their own sales and service network, which is continuously growing globally.

In addition to this, Tesla sells electric powertrain and energy storage products under the brand Tesla Energy to other car manufacturers. Their business activities are organised within the Automotive Sales and Development Services departments.

[2] Tesla Posts Second-Biggest Rally for 2010 U.S. IPO. From Bloomberg

II. Key information

As presented in the section above, Tesla Motors, Inc. is organised in two divisions, Automotive Sales and Development Services. The revenues generated by both divisions derive mainly from U.S., China and Norway.

The following figure shows the revenue breakdown by geography and division:

Revenue split by geography	2015	%
United States	1.975.397[3]	48,6%
China	318.513	7,8%
Norway	356.419	8,8%
Other	1.413.696	34,8%
Total	**4.064.025**	**100,0%**

Table 21 - Revenue split by geography from Tesla Motors, Inc. Annual Report 2015

Revenue split by division	2015	%
Automotive Sales	3.740.973	92,5%
Development Services	305.052	7,5%
Total	**4.046.025**	**100,0%**

Table 22 - Revenue split by division from Tesla Motors, Inc. Annual Report 2015

In the figure below the main competitors of Tesla are presented:

Name	Headquarters
Audi AG	Germany
Bayerische Motorenwerke Aktiengesellschaft	Germany
Daimler AG	Germany
Fiat S.p.A.	Italy
Nissan Motor Co., Ltd.	Japan
Shiloh Industries, Inc.	United States
Toyota Motor Corporation	Japan
Volkswagen AG	Germany

Table 23 - Tesla Motors, Inc., Key Competitors from Tesla Motors, Inc. (TSLA) - Financial and Strategic SWOT Analysis Review

III. SWOT analysis

Tesla´s following SWOT analysis is based on Global Data Market Research[4], Daniel Sparks[5], Trefis Team[6] and own research.

Strengths

[3] Spanish notation applied, "." for thousands and "," for decimal
[4] Tesla Motors, Inc. (TSLA) - Financial and Strategic SWOT Analysis Review
[5] Article - "SWOT Analysis of Tesla Stock"
[6] Article - "Should Tesla Be Worried About Competition?"

- Strong focus on R&D activities to launch its new and innovative products. These activities are mainly focused on the development of manufacturing processes and cost reductions in the different developed models.
- Tesla's intellectual property of creating products that catch the customers' attention due to its innovation, design and quality. Tesla has the potential to become the Apple of the electric automotive industry.
- Robust power train technology. Power train, vehicle engineering and innovative manufacturing are Tesla's core competencies that provide them with a competitive edge over its peers. Moreover, its flexibility allows Tesla to serve a wide range of applications to other manufacturers.
- Tesla has another competitive advantage in the EV market due to its supercharger network and its direct selling model. So far, no other competitor has been able to replicate this kind of network.
- Elon Musk, Tesla's CEO, has also founded other companies such as PayPal and SpaceX, showing an excellent track record.
- Tesla has the knowledge and technology to produce high quality cars. In 2013, its Model S won the 2013 Motor Trend Car of the year award.
- Electric cars are like a combination of a computer and a gasoline car. Tesla designs its cars in California, being an advantage to find the best technology and electrical engineers.
- Tesla created the first fully electric sports car, the Roadster. They are not only a car manufacturer but they provide the necessary infrastructure for electric cars and supply key elements for other car manufacturers.

Weaknesses

- The high cost structure and the amount of cash needed for carrying out operations in the automotive industry are the main concerns for the company's future growth. At the moment Tesla has a negative free cash flow and it seems that it will need to raise debt or new equity in order to keep up with its rapid growth.
- The costs of the raw materials, producing and manufacturing an electric vehicle are higher than the costs of a fuel car.

Opportunities

- Positive outlook in the electric vehicle industry. The company can take advantage of the expected increase in the electric vehicle demand. Due to the level of pollution, concerns regarding oil future, innovative technology and growing congestion, there is a general commitment to improve the usage of green vehicles. The renewable global status report estimates that there will be around 20 million electric battery vehicles by 2020. Moreover, the policy initiatives in several countries will further encourage an increase in the electric car sales reaching the 10% of new vehicle sales by that year.
- Network expansion. Tesla´s strategy is oriented towards an organic growth through network expansion and strategic alliances with leading companies in the automotive industry. One example of this network expansion is Tesla's Gigafactory that is being developed with the collaboration of Panasonic.
- Vehicles in pipeline. Tesla has been focused on luxury electric vehicles and is now focusing on more accessible segments with the development and launch of Model 3. This new model has received thousands of pre-orders during the first days after the launch.
- Its first mover advantage is at the same time one of its biggest opportunities. The company is the world's leader in revenues for electric vehicles and it seems like it has a clear chance to remain at the first position for several years.
- The development of Tesla's Gigafactory will allow the company to achieve economies of scale reducing the battery costs by 30% and making its products more accessible than ever.

Threats

- Raw material price. It is one of the main threats that can negatively impact operational costs of the company and cannot be easily transferred to the clients in case of a fierce competition in prices.
- Competitive scenario. The automotive industry is highly competitive mainly due to price, quality and innovation capacity. Tesla is a young company that is competing against well established and capitalized companies in the car industry such as Ford, Nissan, Renault, BMW, Volkswagen, Daimler and others. These companies are also investing large amounts on developing electric vehicles.

- Dependence on suppliers. Tesla's components come from different suppliers throughout the globe. Tesla's different models need a large quantity of purchased parts sourced from a limited number of suppliers. If the company is not successful on finding alternative sources, it might be too dependent on its suppliers and this could weaken its financial performance.
- Another potential threat that Tesla faces at the moment is to increase its production capacity in order to deliver Model 3 pre-orders. This model has been very successful and has increased the interest of customers who are willing to buy it. Delayed deliveries could have negative impacts on the financial performance of the company.
- Finally, Tesla's CEO encourages competitors by sharing its patent for electric vehicles and batteries. It is still unclear whether or not this might hurt Tesla.

IV. Financial statements

The two following tables present the income statement and the balance sheet of Tesla Motors, Inc. from 2013 to 2015. As we can see, Tesla is a company with start-up characteristics:

- The level of sales of the company has increased at an average of 46,1% (CAGR) in the last years, from $2.478m to $5.292m. This growth is a lot higher than the average growth in the automotive industry. However, the cost of goods sold has remained around 70%-75% as a proportion of sales.
- The operating expenses of Tesla have also increased significantly in the last two years from $247m to $833m, meaning a yearly increase of 83,6%. This increase is driven by R&D, selling expenses and general and administrative expenditures. As a young company with an ambitious objective, Tesla is investing a lot in research and development. Contrary to what we expected, Tesla does not dedicate an important amount to create brand awareness, meaning low expenditures for marketing purposes.
- Tesla Motors, Inc. has reported a negative net income in the last years, reaching a loss of $579m in 2015. At the same time, the company has an important

growth potential and the brokers expect them to generate positive net income in the mid or long run[7].

- As a consequence of a significant expense in R&D and low level of sales, Tesla is a company that is burning cash and is expected to keep doing so in the short term. The company might need to raise capital if the expected results of its recently launched Model 3 are not achieved or delayed. The cash increase from 2013 to 2014 was due to an increase in debt.
- As we will see in Table 24, Tesla Motors, Inc. is financed mainly by equity. This is due to the fact that it is still a start-up with poor cash flow generation and also lacks assets to add on more debt.
- Its working capital is positive mainly due to the important level of inventory that the company has. Accounts payables are also important but not enough to achieve a negative working capital. This positive working capital is not optimal since it impacts negatively impacts the cash account.

The following table depicts the capital structure of Tesla Motors, Inc:

TESLA CAPITAL STRUCTURE		
Number of shares outstanding	132.056.338	*From annual report*
Share price as of March 25th, 2016	227,75	*From yahoo!*
Equity (Market Cap) ($m)	**30.076**	
Long-term debt	2.040	*From annual report*
Short-term debt	633	*From annual report*
Cash	1.197	*From annual report*
Net Debt	**1.477**	
Equity (Market Cap)	30.076	**95,3%**
Net Debt	1.477	**4,7%**
Total Capitalization	31.552	**100%**

Table 24 - Tesla Motors, Inc. capital structure as of March 25th, 2016

[7] Barclays Equity Research (March 30th, 2016), see appendix 2

($m except per share data)	2013 FY	2014 FY	2015 FY
Accounts Receivable	49	227	169
Inventory	340	954	1.278
Prepaid Expenses and Other Current Assets	28	95	125
Accounts Payable	304	778	950
Accrued Liabilities	108	269	389
Working Capital	**5**	**228**	**233**
Property, Plant and Equipment	739	1.829	3.403
Other Non-Current Assets	24	43	75
Total Tangible Assets	**762**	**1.873**	**3.478**
Operating Lease Vehicles	**382**	**767**	**1.791**
Financial Assets	**9**	**29**	**54**
Capital Employed	**1.159**	**2.897**	**5.557**
Cash and Cash Equivalents	846	1.906	1.197
Long-Term Debt	586	2.408	2.641
Net Debt	**(260)**	**502**	**1.444**
Other Non-Current Liabilities	**295**	**661**	**1.659**
Deferred Revenue	273	484	1.007
Capital Lease Obligations, Current Portion	21	22	33
Reservation Payments	163	258	283
Other Current Liabilities	**457**	**763**	**1.323**
Shareholder's Equity	**667**	**970**	**1.131**
Capital Invested	**1.159**	**2.897**	**5.557**

Table 25 - Tesla Motors, Inc. balance sheet - economic view

($m except per share data)	2013 FY	2014 FY	2015 FY
INCOME STATEMENT (PRO FORMA REVENUES)			
Total Revenues	**2.478**	**3.599**	**5.292**
% Growth - YoY	499,5%	45,2%	47,0%
Stock based compensation	9	18	19
Cost of Revenue (incl. stock based comp):	1.943	2.634	4.059
Total Cost of Revenue (ex stock based comp)	1.934	2.617	4.039
Gross Profit (loss) (Non-GAAP)	**544**	**982**	**1.252**
Operating expenses			
Research and development	197	402	629
Selling, general and administrative	247	527	833
Stock based compensation	75	139	179
Total Operating Expenses	518	1.068	1.640
Operating Income / (Loss)	**18**	**(104)**	**(407)**
Adjusted EBIT	**101**	**53**	**(209)**
Adjusted EBITDA	**207**	**284**	**214**
Interest income	0	1	2
Interest expense	(6)	(26)	(33)
Other (expense) income, net	11	2	(42)
Income (loss) before income taxes	22	(127)	(480)
Change in fair value of warrant liabilities	(11)	-	-
PF Income (Loss) before income taxes	106	30	(282)
Provision for income taxes (Non GAAP)	3	9	13
Net Income - non-GAAP revs, with stock expense	**(85)**	**(228)**	**(579)**
PF non-GAAP Net Income	104	20	(295)
Net income (loss) per share attributable to stockholders	(0,63)	(1,66)	(4,52)
PF non-GAAP EPS - diluted	0,78	0,15	(2,30)
Weighted average number of diluted shares	134	137	128
Weighted average number of common shares		125	128

Table 26 - Tesla Motors, Inc. income statement

c. Valuation preliminary analysis - common hypothesis

The outcome of this section is to enumerate and describe the common hypothesis that has been applied to the different valuation methodologies. The following table shows the assumptions taken:

Common Hypothesis		
Perpetual brand earnings growth rate	**5,97%**	Own estimate
Weighted average cost of capital	**9,97%**	Own estimate
Brand earnings discount rate	**12,97%**	Own estimate
Effective tax rate	**20,00%**	Own estimate
Lifetime of the brand	**Indefinite**	Own estimate

Table 27 - Common hypothesis based on our own estimates

The first assumption, the perpetual brand earnings growth rate, has been taken from Barclays forecasts (see appendix 2) and the average growth in the automotive industry of 2%[8]. Barclays expects Tesla Motors, Inc. to grow at 65,7% in 2020, which is driven by an increase in the level of sales of the Model 3. This value is not relevant and should not be taken as the perpetual growth rate as the company is very young and needs to mature. Therefore, a soft landing is applied until 2025. To obtain a good estimate for the perpetual growth rate, we decided to decrease the growth forecasted by Barclays in 2020 to a growth rate higher than the average automotive industry growth. We believe that Tesla, being a first mover in the electric vehicle industry, will grow faster than the rest of the automotive industry. Therefore we decided that 5,97% (6,0% in the table) would be a good proxy.

		Barclays Forecasts					Soft Landing				
$m	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Sales	5.292	7.596	7.839	8.603	12.094	20.042	30.819	43.707	56.763	66.936	70.935
% Growth	*n.a.*	*43,5%*	*3,2%*	*9,8%*	*40,6%*	*65,7%*	*53,8%*	*41,8%*	*29,9%*	*17,9%*	*6,0%*

Table 28 - Tesla Motors, Inc. sales forecasts and soft landing with own estimates

To compute the weighted average cost of capital we have applied Damodaran´s[9] suggested approach. The following table shows the details of the computation:

Tesla Motors, Inc. WACC calculation		
Beta	1,31	*From Reuters*
Risk-free rate	1,80%	*US 10 yrs government bond*
ERP	6,56%	*Own estimate*

[8] www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_01_23.html_mfd

[9] Damodaran website

Cost of equity	**10,40%**	
Cost of debt	1,50%	*From Wright Investor Services*
Tax rate	20%	*From Reuters*
After tax cost of debt	**1,20%**	
Gearing	**4,68%**	*Own estimate*
Estimated WACC	**9,97%**	

Tabla 29 - Tesla Motors, Inc. WACC calculation

For the calculation of the Equity Risk Premium (ERP), we have also followed Damodaran's approach. We computed the weighted average ERP according to the level of sales from each region, described in the section b-II of this paper. In order to compute the ERP of the region "Other", the first thing was to analyze all the regions in which Tesla operates and find the ERP weighted by the GDP of the countries of each region. This information is directly provided by Damodaran. Once the information was collected, we computed the average ERP of all the "Other" region. We believe this to be the best approach according to the data available. In the following tables we can find further details regarding these computations.

		Sales 2015 ($m)	% of total	Damodaran ERP estimates
United States	North America	1.957	48,4%	6,25%
China	Asia	319	7,9%	7,18%
Norway	Western Europe	356	8,8%	6,25%
Other		1.414	34,9%	6,94%
Total		**4.046**	**100,0%**	**6,56%**

Table 30 - Tesla Motors, Inc. risk premium calculation

	Damodaran ERP estimates
North America	6,25%
Western Europe	7,45%
Asia	7,79%
Australia & New Zealand	6,26%
Average	**6,94%**

Table 31 - Tesla Motors, Inc. ERP calculation for “Other”

To compute the brand earnings discount rate, we tried to apply the theory detailed in the section C of this paper. However, due to the fact that Tesla is a company with non-declared goodwill or brand intangible assets this methodology was not applicable and

an alternative approach has been considered. On average, the premium on the return on intangible assets compared to the WACC ranges between 200 and 400 basis points[10]. Therefore, we considered an average of 300 bps to be a good proxy of the premium added to the WACC to compute the Tesla Motors, Inc. return on intangible assets. This result is 12,97%.

The effective tax rate was another problem that needed to be addressed. Computing an average tax rate of the last ten or five years was not a good estimation looking forward. As a most of the start-ups, Tesla Motors has been generating losses since year one. The hypothesis phrased in this paper, was based on the future estimates of the company in the mid-term and long-term future. Tesla is expected to generate positive results in the future, so we decided to choose an effective tax rate between the current tax rate and the 35% or 40%[11] according to the US tax legal services. Therefore a 20%[12] effective tax rate seems like a good proxy for Tesla looking forward.

The lifetime of the brand is also based in our own estimates. We believe Tesla will become a reference as it has potential to achieve a similar position to Apple in the automotive industry. Being a young company with an ambitious goal, first mover in an innovative industry and the fact that brands in the automotive industry have existed during long periods are the main reasons why we believe that Tesla´s lifetime will be indefinite.

Finally, it is important to mention that Tesla is a company that would be positioned in the electric vehicle industry. This is such a new and innovative industry that Tesla Motors, Inc. is the only pure and listed player. This is one of the most important challenges that we continuously faced in this case study: trying to pick the most appropriate comparable as a benchmark to calculate the brand value. It has been impossible to choose only one peer and be consistent due to the lack of data available in the reports. Therefore, we had to pick the most appropriate comparables from a technical and data availability perspective, being different in the different methodologies.

[10] Patrick Legland
[11] KPMG - Global corporate tax rates table
[12] From Morningstar Equity Research

d. The brand valuation

To value the brand equity of Tesla Motors, Inc., the methodologies applied have been picked according to the importance of the method and the availability of the data needed.

I. Benchmark valuations

As a first step regarding the brand equity valuation of Tesla, we have considered the valuation computed by Brand Finance that will be used as a benchmark to compare with the rest of the valuation approaches.

Brand Finance ($ m)	2015	2016
Tesla Motors, Inc. brand equity	**2,644**	**2,823**
% Growth	-	*6.77%*

Table 32 - Tesla Motors, Inc. brand equity estimated by Brand Finance

Furthermore, the following table shows the valuation of the brand equity according to the market goodwill approach.

Market Goodwill Approach ($m unless stated)	2016	
Share price as of March 25th, 2016	227,75	*From Yahoo!*
Number of shares (common stock)	132	*From annual report*
Tesla Motors Market Cap	**30.076**	
Tesla Group Equity book value	1.089	*From annual report*
Market Goodwill	**28.987**	
Goodwill	0	*From annual report*
Other intangible assets (book value)	0	*From annual report*
Tesla Market Goodwill	28.987	
Tesla brand goodwill (70%[13] of market goodwill)	**20.291**	

Table 33 - Market goodwill approach of Tesla brand equity value

To compute this valuation, we have subtracted from the market capitalization the company book value of equity as well as the goodwill and other intangible assets. Being a start-up or a company at an early stage, Tesla does not have any goodwill because it has not been involved in any M&A transaction.

This market goodwill approach should give us the ceiling value of Tesla's brand equity according to the market situation at the date of the calculation. At a first glance, we can

[13] Patrick Legland

see that the market goodwill approach is 7.2 times bigger than the value estimated by Brand Finance. This gives us a first idea about how diverse the brand equity valuations can be depending on the methodology applied.

II. Royalty relief method

The royalty relief method, as previously introduced, makes use of royalty expenses as a brand valuation tool. By owning the brand, Tesla Motors, Inc. does not incur non-ownership costs. Therefore, by discounting these savings (forecasted) to perpetuity the brand value is obtained. However, Tesla Motors, Inc. does not, and intends not to, franchise its brand. As disclosed in its SEC filings: "We own our sales and service network because the traditional franchised distribution and service model is not viable for a business like ours" (2016 10-K Annual Report). The solution to not having an applicable royalty rate is then through a comparable company research and the current franchise agreements.

Appendix 4, presents the different royalty contracts in the automobile sector, for parts or manufacturing operations obtained through the Royalty Source Database. These contracts, though not identical to Tesla Motors, Inc. business model/product, help establish a [4,40 – 8,40] % franchise agreement rate range upon which to construct the brand valuation model. We have used the average of the low and high rates for both types of contracts, parts and manufacturing, as well as not having taken into account any territory restriction, mainly due to the lack of available information (NA).

A posterior analysis of franchise rate sensibility, Table 36 presents the overall brand valuation for a [2,38 – 8,38] % range, covering Royalty Source's automobile sector lowest and highest royalty rate. This table restates the primary importance of the royalty rate value when valuing brands as a 1% decrease/increase of the applicable royalty rate causes a $2.923bn decrease/increase in the brand value. Considering that Tesla Motors Inc.'s has balance sheet assets worth $8.092bn (2016 10-K Annual Report) and a market capitalisation of $33,52bn (Yahoo Finance as of 4/27/2016) this fluctuation would represent a 36% of its balance sheet and an 8,72% of its market value. We have assumed that all brand value corresponds entirely to shareholders mainly because all debt is covered by tangible assets and any impairment loss would not trigger a technical loan default.

Knowing that the Terminal Value bears the majority of the valuation weight, sensibility Table 36, also points out the change in value when modifying the perpetuity growth rate.

When building the model, Barclays Brokers Financial Report has been used to forecast its future stream of sales, until 2020. After this point, a soft landing of five years is applied. The ending point is a perpetual growth rate of 5,97%, which is the five year sales growth average in the USA from 1999 to 2014[14]. To reflect that the USA is the main market and business driver for Tesla Motors Inc. in the present, near and not so near future, and that the lifetime of the brand is indefinite, we have used the published yearly five-year sales growth average rate recorded for the last 15 years (1999-2014).

If, however, the annual car production rate over the last 50 years is used as proxy for the annual growth in sales at perpetuity, we would obtain a growth rate of 2%[15] that would yield a brand value of $16.058m. This assumption would not reflect the following key situations:

- Tesla Motors, Inc. is US market predominant
- Car price averages change over time
- The faster growth rate of the electric cars segment in comparison with the conventional combustion engine car market

Other minor issues, for example the need of using a global tax rate, have not been captured in this estimate but would not yield any significant change.

After taking into consideration said hypothesis and assumptions the following results are obtained:

Hypothesis		
Royalty rate	5,38%	*Own estimates*[16]
Discount rate	12,97%	*See common hypothesis*
Tax rate	20%	*See common hypothesis*
Perpetual growth rate	5,97%	*See common hypothesis*
Lifetime of the brand	Indefinite	*See common hypothesis*

Table 34 - Royalty Relief hypothesis

[14] www.stern.nyu.edu/~adamodar/New_Home_Page/data.html
[15] www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_01_23.html_mfd
[16] See appendix 4

Year ($m)	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Sales	5.292	7.596	7.839	8.603	12.094	20.042	30.819	43.707	56.763	66.936	70.935
% Growth	*n.a.*	*43,5%*	*3,2%*	*9,8%*	*40,6%*	*65,7%*	*53,8%*	*41,8%*	*29,9%*	*17,9%*	*6,0%*
Pre-tax royalty income	**285**	**409**	**422**	**463**	**651**	**1.078**	**1.658**	**2.351**	**3.054**	**3.601**	**3.816**
Taxes	(57)	(82)	(84)	(93)	(130)	(216)	(332)	(470)	(611)	(720)	(763)
After tax royalty income	**228**	**327**	**337**	**370**	**521**	**863**	**1.326**	**1.881**	**2.443**	**2.881**	**3.053**
Discount factor		1,00	0,89	0,78	0,69	0,61	0,54	0,48	0,43	0,38	0,33
Present value of royalty income		327	299	290	361	530	721	905	1.041	1.086	1.019
Sum of discounted royalty income		6.579									
Terminal value											46.276
Terminal value discounted		15.447									
Brand value		**22.025**									

Table 35 - Results of the Royalty relief method

		Royalty rate						
	22.025	2,38%	3,38%	4,38%	5,38%	6,38%	7,38%	8,38%
Discount rate	8,97%	25.695	36.492	47.288	58.084	68.881	79.677	90.473
	9,97%	18.661	26.502	34.343	42.184	50.025	57.866	65.707
	10,97%	14.473	20.554	26.635	32.716	38.797	44.878	50.959
	11,97%	11.704	16.621	21.539	26.456	31.374	36.291	41.209
	12,97%	9.744	13.837	17.931	**22.025**	26.119	30.213	34.307
	13,97%	8.288	11.770	15.253	18.735	22.217	25.700	29.182
	14,97%	7.168	10.179	13.191	16.203	19.214	22.226	25.237
	15,97%	6.281	8.921	11.560	14.199	16.839	19.478	22.117
	16,97%	5.565	7.903	10.241	12.579	14.918	17.256	19.594

		Royalty rate						
	22.025	2,38%	3,38%	4,38%	5,38%	6,38%	7,38%	8,38%
Perpetual growth rate	3,97%	8.123	11.537	14.950	18.363	21.776	25.189	28.602
	4,47%	8.457	12.010	15.563	19.117	22.670	26.223	29.777
	4,97%	8.832	12.543	16.254	19.965	23.676	27.387	31.098
	5,47%	9.257	13.147	17.037	20.926	24.816	28.706	32.595
	5,97%	9.744	13.837	17.931	**22.025**	26.119	30.213	34.307
	6,47%	10.305	14.634	18.964	23.294	27.623	31.953	36.283
	6,97%	10.959	15.564	20.169	24.773	29.378	33.983	38.588
	7,47%	11.733	16.663	21.593	26.523	31.453	36.383	41.312
	7,97%	12.662	17.982	23.302	28.623	33.943	39.263	44.583

Table 36 - Royalty relief sensitivities

The Royalty Relief method results in a $22.025 m brand value for Tesla Motors, Inc.

III. Price premium method

Brand equity strength generates price differences among consumers generating different income streams for the same types of products. This form of income approach brand valuation method needs the use of unbranded benchmarks. The case study uses the Nissan Motor Company, more specifically its electric car model Nissan Leaf, as the unbranded benchmark.

Two facts have caused the use of the Nissan Leaf, an electric car offered by the Nissan Motor Company, as benchmark upon which the Tesla Motors, Inc. brand value is calculated.

First, the lack of comparable, not even close enough, companies. Full electric vehicle enterprises with similar product offering, not only from a price perspective but also

from a characteristics perspective (range, charging time etc.) are inexistent. Secondly, the lack of available information.

To solve for these issues, the Nissan Leaf car was used as benchmark. Though the Nissan Motor Company is a very well known brand, its electric car can be considered as the unbranded version of the Tesla Motors Inc. product offering.

To execute this model, a number of input variables had to be included. Mainly, inflation and initial product prices. These variables are the main drivers of the Price Premium brand valuation tool.

The initial price for the Nissan Leaf was calculated by allocating the proportional brand expense to its electric car division. Inflation data was obtained through the World Bank and International Monetary Fund databases. The Nissan Motor Company 2015 Annual Report provides with the necessary information to determine the initial unbranded product price. Table 37 provides with the initial assumptions used.

Hypothesis		
Non-branded company chosen	Nissan Leaf	*Own hypothesis*
Inflation on branded product mix prices	1,70%	*From World Bank (US)*
Inflation on non-branded product mix prices	0,75%	*From World Bank (Japan)*
Tesla product volume growth rate	5,97%	*See common hypothesis*
Tax rate	20%	*See common hypothesis*
Discount rate	12,97%	*See common hypothesis*
Perpetual brand earnings growth rate	5,97%	*See common hypothesis*
Lifetime of the brand	Indefinite	*See common hypothesis*
Nissan Leaf Initial Price ($)	34.200	*From Nissan Website*

Table 37 - Price premium hypothesis

Appendix 5 contains in more detail further estimates made regarding the Nissan Leaf car model Selling, General and Administrative expenses used in the results table below.

Appendix 8 discloses further details regarding the number of Tesla units sold per year and the Tesla average car assumed in the following table for the calculation of the company's brand equity.

Year ($m)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tesla units sold (in 000)	51	74	80	99	167	331	723	1.009	1.288	1.494	1.557
Average Tesla price ($)	38.500	39.155	39.820	40.497	41.186	41.886	42.598	43.322	44.058	44.807	45.569
Nissan Leaf average price ($)	34.200	34.457	34.715	34.975	35.238	35.502	35.768	36.036	36.307	36.579	36.853
Price difference ($)	**4.300**	**4.698**	**5.105**	**5.522**	**5.948**	**6.384**	**6.830**	**7.285**	**7.752**	**8.228**	**8.716**
Price premium cash flows before tax	**218**	**347**	**410**	**545**	**992**	**2.112**	**4.941**	**7.350**	**9.987**	**12.292**	**13.567**
Taxes	(44)	(69)	(82)	(109)	(198)	(422)	(988)	(1.470)	(1.997)	(2.458)	(2.713)
Price premium cash flows after tax	**174**	**277**	**328**	**436**	**794**	**1.690**	**3.953**	**5.880**	**7.990**	**9.834**	**10.584**
Tesla research and development	629	631	980	989	1.149	1.603	1.732	1.870	2.020	2.181	2.356
Tesla selling, general and administrative	833	1.112	1.003	989	1.330	1.844	2.014	2.199	2.401	2.622	2.863
Tesla Expenses	1.461	1.743	1.983	1.979	2.479	3.447	3.745	4.069	4.421	4.803	5.219
Salinas ratio	75,0%										
Expenses attributable to Tesla brands	**1.096**	**1.307**	**1.487**	**1.484**	**1.860**	**2.585**	**2.809**	**3.052**	**3.316**	**3.603**	**3.914**
Nissan Leaf Selling General and Administrative	892	869	913	919	935	952	970	988	1.006	1.024	1.043
Salinas ratio	75%										
Expenses attributable to Nissan Leaf Brand	**669**	**652**	**685**	**690**	**701**	**714**	**727**	**741**	**754**	**768**	**782**
Expenses related to brand management	**427**	**655**	**803**	**795**	**1.158**	**1.871**	**2.082**	**2.311**	**2.561**	**2.834**	**3.132**
Taxes	(85)	(131)	(161)	(159)	(232)	(374)	(416)	(462)	(512)	(567)	(626)
Brand expenses cash flow after tax	**342**	**524**	**642**	**636**	**927**	**1.497**	**1.665**	**1.849**	**2.049**	**2.267**	**2.506**
Brand earnings	**(168)**	**(247)**	**(314)**	**(199)**	**(133)**	**193**	**2.288**	**4.031**	**5.941**	**7.566**	**8.348**
Discount factor		1,00	0,89	0,78	0,69	0,61	0,54	0,48	0,43	0,38	0,33
Present value of brand earnings		(247)	(278)	(156)	(92)	118	1.244	1.940	2.530	2.853	2.787
Sum of discounted royalty income		10.699									
Terminal value											42.238
Present value of terminal value		14.099									
Brand value		**24.797**									

Table 38 - Price premium results

The result is of $24.797m. As seen throughout this case study, income and market approach methods give higher values than cost approach methods.

The main drawback of forecasted income approaches is, although they are very precise if the fundamentals are very well determined, estimating future developments and metrics is complex and uncertain, which results in high estimate instability.

The sensibility analysis, Table 39, is in line with the income approach conclusions observed until now. Uncertainty obtained with income valuation tools is high compared with other brand valuation methods.

		Non-branded average price ($)							
	24.797	25.200	28.200	31.200	34.200	37.200	40.200	43.200	46.200
Tesla average price ($)	26.500	12.670	-7.844	-28.357	-48.870	-69.384	-89.897	-110.410	-130.924
	29.500	30.433	11.870	-6.693	-25.256	-43.818	-62.381	-80.944	-99.507
	32.500	45.172	28.199	11.227	-5.746	-22.718	-39.691	-56.663	-73.636
	35.500	57.652	42.001	26.350	10.700	-4.951	-20.602	-36.253	-51.904
	38.500	68.403	53.868	39.332	**24.797**	10.262	-4.274	-18.809	-33.344
	41.500	77.799	64.218	50.637	37.056	23.475	9.894	-3.687	-17.268
	44.500	86.114	73.358	60.603	47.848	35.092	22.337	9.582	-3.174
	47.500	93.553	81.519	69.485	57.451	45.417	33.383	21.349	9.315
	50.500	100.272	88.873	77.475	66.077	54.678	43.280	31.882	20.483

Table 39 - Price premium sensitivities

Negative brand values should be read as the Tesla Motors Inc. brand being inferior in value to the Nissan Motor Company brand. This occurs when Non-branded average prices, i.e. Nissan Leaf average prices, are superior to Tesla Motors Inc. prices. This causes a negative margin or price differential.

Again variability is high inside despite relatively low price increments. The result is brand value deviations of more than $10.000m.

IV. Margin comparison method

This brand valuation fundament is through a Gross, EBITDA or EBIT margin comparisons between the valued brand and a given unbranded benchmark. This case study is constructed on a Gross margin earnings differential approach. Tesla Motors, Inc. short history, growth stage and industry environment make operation margins as a more precise and visible proxy of its operations.

An unbranded company is the ideal reference point as it is considered as a zero brand value enterprise. However, the lack of unbranded comparable companies has been solved by the use of Ford Motor Company as a value benchmark. The model value output should be added to the estimated Ford Motor Company brand value to obtain the resulting brand value. It is an adaptation made due to not having a zero value benchmark, i.e. an unbranded comparable.

Tesla Motors, Inc. reference model will be the Tesla Model 3. Company Reports (Tesla 2016 Annual Report) and Barclays Brokers Report point out the objective of achieving a 25% gross margin for their future reference model (Appendix 6). A five-year soft landing period is applied for estimates posterior to 2020 after which a perpetual gross margin of 25% is established.

For Ford Motor Company, a constant gross margin of 11,2% after 2018 is applied. Previous estimates forecasted close to 11,2% gross margin rates with small yearly variability. Given its highly capital-intensive business model with major focus on volume and economies of scale, achieving an 11,2% perpetual gross margin, after 2018, is a realistic assumption. Table 40 develops this model.

Hypothesis		
Tax rate	20,0%	*See common hypothesis*
Discount rate (WARA)	12,97%	*See common hypothesis*
Perpetual brand earnings growth rate	5,97%	*See common hypothesis*
Tesla sales perpetual growth rate	5,97%	*Own hypothesis*
Lifetime of the brand	Indefinite	*See common hypothesis*

Table 40 - Margin comparison method hypothesis

$m	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tesla gross margin	23,7%	22,9%	25,4%	24,5%	22,6%	22,2%	22,8%	23,3%	23,9%	24,4%	25,0%
Ford brand product gross margin	12,1%	12,4%	11,9%	11,5%	11,2%	11,2%	11,2%	11,2%	11,2%	11,2%	11,2%
Gross margin difference	**11,5%**	**10,6%**	**13,5%**	**13,0%**	**11,4%**	**11,0%**	**11,6%**	**12,1%**	**12,7%**	**13,3%**	**13,8%**
Tesla sales	5.292	7.596	7.839	8.603	12.094	20.042	30.819	43.707	56.763	66.936	70.935
Gross margin premium cash flows before tax	610	802	1.057	1.115	1.384	2.209	3.569	5.305	7.206	8.870	9.795
Taxes	(122)	(160)	(211)	(223)	(277)	(442)	(714)	(1.061)	(1.441)	(1.774)	(1.959)
Margin premium cash flows after tax	**488**	**642**	**845**	**892**	**1.107**	**1.767**	**2.855**	**4.244**	**5.765**	**7.096**	**7.836**
Discount factor		1,00	0,89	0,78	0,69	0,61	0,54	0,48	0,43	0,38	0,33
Present value of brand earnings		642	748	699	768	1.085	1.552	2.042	2.455	2.676	2.616
Sum of discounted royalty income		15.283									
Terminal value											
Present value of the terminal value		13.233									39.645
Brand value		**28.517**									

Table 41 - Margin comparison method results

Appendix 6 provides further details regarding Tesla target gross margin (Model 3).

The differential brand value obtained is of $28.517m. This value has to be added to Ford Motor Company's brand value. Interbrand's 2015 value for Ford Motor Company was of $11.57bn. Tesla Motors Inc. resulting brand value is then of $40.095m, a value much higher than those obtained until now.

High-tech, high-margin approach is though as one of the main explanations for this notable value divergence. Obtaining gross margins of 25% on mass-market products is unheard of in the car manufacturing industry. The high-tech appeal and the design-enhanced products, highly appreciated by consumers, could be the root reason for this outlier performance.

Yet looking at valuation methods developed until now, we observe a valuation that ranges between $3bn and $25bn depending on the method used. Income approaches obtain values closer to the high-end range while cost approaches output values close to the lower end. There are many standard deviations between the value given in this method and a normal distributed value range with a minimum value of $3bn and a maximum value of $25bn. Moreover, the Demand Driver approach makes use of differential earnings, calculated through EBITDA difference, and results in an $11bn value. This evidence calls for the use of a different approach when valuing Tesla Motors, Inc.'s brand.

The sensibilities table constructed, Table 42, exhibits low value volatility for growth rates close to 5,97% and discount rates close to 12,97%.

		Tesla sales perpetual growth rate						
	28.517	2,97%	3,97%	4,97%	5,97%	6,97%	7,97%	8,97%
Discount rate	8,97%	47.732	53.818	62.954	78.198	108.750	200.922	-
	9,97%	38.855	42.575	47.786	55.608	68.659	94.817	173.730
	10,97%	32.531	34.923	38.112	42.580	49.286	60.476	82.902
	11,97%	27.852	29.448	31.502	34.240	38.076	43.833	53.440
	12,97%	24.281	25.379	26.752	**28.517**	30.871	34.169	39.119
	13,97%	21.486	22.259	23.204	24.385	25.905	27.932	30.770
	14,97%	19.249	19.804	20.470	21.285	22.304	23.613	25.360
	15,97%	17.424	17.830	18.309	18.884	19.587	20.466	21.597
	16,97%	15.912	16.212	16.562	16.976	17.473	18.081	18.841

Table 42 - Margin comparison sensibilities

V. Excess cash flow method

The required returns of non-brand assets need to be determined in this income approach method. The forecasted cash flows to the firm of the company are corrected with these expected returns to obtain brand driven cash flows. Cash flows are then discounted with the required rate of return on intangible assets.

The precision of the method can be improved by increasing segmentation of non-branded assets. It is conditional, however, on the availability and accuracy of the new included rates of return. This is a generous assumption given that the more variable inputs a model has, the more oscillations it is prone to. Brand values obtained for this case study are highly variable, especially depicted by the sensibilities tables, due to the early growth stage and the overall environment that surrounds Tesla Motors Inc.

On the contrary, if the studied company does have predictable and easily forecastable future earnings & cash flows, then this method can achieve the highest of the precisions. Common literature refers to Utility & Power enterprises as the optimal target for this brand valuation method.

The required rates of return by non-branded assets assumed in the case study are the following:

- Working Capital: For Tesla Motors, Inc. Working Capital Requirements turnover rate (WCR/Sales*365) expressed in number of days is inferior to 30 days. We can consider then working capital as a one-month illiquid financial security. US one-month rate is 0,21% from Financial Times (as of May 4th, 2016).
- Tangible Fixed Assets: Tangible fixed assets are mainly formed by Real Estate and Machinery. Given the sector is highly capital intensive and the big investments in Greenfield constructions done until the moment, using rental yields on US industrial property is a very reasonable approach. Inputs of 3,91% reported by the real estate specialized database Global Property Guide, required rates of return on intangible assets are used.
- Financial Assets: This transaction is mainly made of cash, cash equivalents and restricted cash. Given the high liquid nature of this type of financial assets using short term interest rate on US government debt is used. The one-month interest rate on US government debt is 0,21% (as of May 4th, 2016).

- Goodwill, brand and other intangible assets: Given the start-up and growth stage of Tesla Motors Inc., its balance sheet does not account for any intangible or brand acquired. The company has not been involved yet, and no Broker's Reports advice suggest in the not so near future, in any M&A transaction. Therefore no required rate of return is used.
- Operating leases: Tesla Motors, Inc. business model accounts for car lease. This is a 36 to 39 month program after which the asset is redeemable by the user, if desired. This type of contract lease of medium term liquidity resembles to two-year US government debt currently at a 0,76% rate according to the Financial Times (as of May 4th, 2016).

Hypothesis		
Discount rate	12,97%	*See common hypothesis*
Perpetual growth rate	5,97%	*See common hypothesis*
Lifetime of the brand	Indefinite	*See common hypothesis*
WC required return	0,21%	*1 month US government bond rate*
Tangible fixed assets required return	3,91%	*Industrial rental yields*[17]
Financial assets required return	0,21%	*1 month US government bond rate*
Operating lease	0,76%	*2 year US government rate*

Table 43 - Excess cash flow hypothesis

[17] 2016 Global Property Guide

Year ($m)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Company free cash flow		(709)	81	(1.598)	602	(586)	659					
	Required Return											
Working capital requirements	0,21%	233	(200)	1.710	905	1.964	2.196					
Operating leases	0,76%	1.791	3.295	4.461	5.445	6.472	8.447					
Tangible fixed assets	4,00%	762	1.873	3.478	4.703	5.509	6.041					
Financial assets	3,80%	1.251	1.332	(265)	337	(250)	409					
Brands & other intangible assets	0,00%	0	0	0	0	0	0					
Goodwill	0,00%	0	0	0	0	0	0					
Assets employed x required return		47	101	173	228	268	306					
Free cash flow attributable to the brand		(755)	(19)	(1.770)	374	(854)	353	756	1.414	2.264	3.012	3.192
FCF growth rate			97%	(9.106)%	121%	(328)%	141%	114%	87%	60%	33%	6%
Discount factor			1,00	0,89	0,78	0,69	0,61	0,54	0,48	0,43	0,38	0,33
Present value of royalty income			(19)	(1.567)	293	(593)	217	411	681	964	1.136	1.066
Sum of discounted royalty income			2.588									
Terminal value												48.386
Present value of terminal value			16.151									
Brand value			**18. 739**									

Table 44 - Results of Excess cash flow method

The brand value obtained was of $18.739m. The majority of the valuation weight is born by the terminal value. Consequently, perpetual growth and discount rates assumptions will vary highly brand results obtained. The sensibilities table proof these facts.

		Perpetual Growth Rate						
	18.739	2,97%	3,97%	4,97%	5,97%	6,97%	7,97%	8,97%
Discount Rate	8,97%	27.320	33.058	41.671	56.041	84.838	171.711	-
	9,97%	21.996	25.889	31.340	39.523	53.174	80.531	163.058
	10,97%	18.068	20.843	24.543	29.725	37.502	50.477	76.480
	11,97%	15.068	17.120	19.759	23.278	28.206	35.602	47.941
	12,97%	12.713	14.275	16.228	**18.739**	22.087	26.775	33.812
	13,97%	10.825	12.042	13.529	15.388	17.778	20.965	25.428
	14,97%	9.285	10.251	11.410	12.826	14.596	16.872	19.908
	15,97%	8.010	8.789	9.709	10.813	12.163	13.850	16.019
	16,97%	6.942	7.579	8.321	9.199	10.251	11.538	13.146

Table 45 - Excess cash flow perpetual growth vs. discount rates sensibility table

Table 45 illustrates the high variability of the results obtained. As commented previously, when the terminal value accounts for more than 85% of the valuation result, slight modifications of the perpetual growth and discount rates used cause instabilities in the calculations.

Initial or, very close rates, table values should not be considered, as the denominator for the Gordon & Shapiro formula, used to compute the present value of the terminal value, is infinitesimal. The same effect happens with Table 46, that analysis the effect of the working capital requirements and tangible fixed assets required rates on the overall brand value.

		Tangible Fixed Assets Required Return						
	18.739	2,41%	2,91%	3,41%	3,91%	4,41%	4,91%	5,41%
WCR Required Return	0,01%	29.490	25.667	22.246	19.168	16.385	13.856	11.547
	0,06%	29.329	25.524	22.117	19.052	16.280	13.760	11.460
	0,11%	29.184	25.394	22.001	18.947	16.185	13.674	11.381
	0,16%	29.040	25.265	21.885	18.843	16.090	13.587	11.302
	0,21%	28.896	25.137	21.770	**18.739**	15.995	13.501	11.223
	0,26%	28.753	25.009	21.655	18.635	15.901	13.415	11.145
	0,31%	28.610	24.881	21.541	18.531	15.808	13.330	11.066
	0,36%	28.468	24.754	21.426	18.428	15.714	13.245	10.988
	0,41%	28.326	24.628	21.313	18.326	15.621	13.160	10.911

Table 46 - Excess cash flow WCR vs. Tangible fixed assets required return rates sensibility table

VI. Historical costs method

This method requires capitalizing all past brand building expenses to the present value. It is important to note that the cost of brand creation does not reflect its current fair market value, as it does not take into account realities like obsolescence factors, late market entry or increased competition among others.

Other minor flaws besides ignoring the future brand potential are: a misrepresentation of brand efficiency costs (Tollington 1999), not considering for inflation or change in the value of money and not taking into account the positioning of the brand.

Salinas (2009) simplifies the different types of costs incurred when creating a brand by applying a 75% rate to the total brand related operating expenses. This number is a rule of thumb that considers a linear split between asset-related and brand-related expenses. In reality this is not applicable, however, the approximation helps establish a valuation minimum value or "floor value".

Using Tesla Motors Inc. past Income Statement Sec Filings we have been able to model its operating expenses and compute the brand-building related investments made until now. This results in a $3.293m brand valuation.

Tesla Motors, Inc. has never had any advertising agency or run in-house marketing campaigns. Proof of this is its low brand-related expenditure. The reason for this low level of brand expenditure resides in Tesla Motors, Inc. dependability on word-of-mouth, social media & internet related marketing communication tools as well as on its founder, Elon Musk ability to generate media buzz.

$m	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Automotive				0	0	15	112	97	149	386	1.922	3.007	3.741
Services and Other				0	0	0	0	20	56	28	92	191	305
Total Revenues				**0**	**0**	**15**	**112**	**117**	**204**	**413**	**2.013**	**3.198**	**4.046**
Automotive				0	0	16	102	80	115	372	1.483	2.146	2.823
as a % of sales				-	-	*107,7%*	*91,5%*	*68,5%*	*56,5%*	*89,9%*	*73,7%*	*67,1%*	*69,8%*
Services and Other				0	0	0	0	6	27	12	74	171	299
as a % of sales				-	-	*0,0%*	*0,0%*	*5,2%*	*13,3%*	*2,8%*	*3,7%*	*5,3%*	*7,4%*
Cost of revenues				0	0	17	103	87	143	384	1.558	2.317	3.123
as a % of sales				-	-	*115,0%*	*92,3%*	*74,3%*	*70,1%*	*92,9%*	*77,4%*	*72,5%*	*77,2%*
Gross Profit				0	0	(2)	9	30	61	29	456	881	923
as a % of sales				-	-	*(15,0)%*	*7,7%*	*25,7%*	*29,9%*	*7,1%*	*22,6%*	*27,5%*	*22,8%*
Research and Development				**25**	**63**	**54**	**19**	**93**	**209**	**274**	**232**	**465**	**718**
as a % of sales				-	-	*364,4%*	*17,2%*	*79,7%*	*102,3%*	*66,3%*	*11,5%*	*14,5%*	*17,7%*
Selling, general and administrative				**5**	**17**	**24**	**42**	**85**	**104**	**150**	**286**	**604**	**922**
as a % of sales				-	-	*160,4%*	*37,7%*	*72,4%*	*51,0%*	*36,4%*	*14,2%*	*18,9%*	*22,8%*
Total operating expenses	**0**	**0**	**0**	**30**	**80**	**77**	**61**	**178**	**313**	**424**	**518**	**1.068**	**1.640**
as a % of sales				-	-	*524,8%*	*54,9%*	*152,1%*	*153,3%*	*102,7%*	*25,7%*	*33,4%*	*40,5%*
Salinas (2009) ratio	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Tesla brand-related expenses	**0**	**0**	**0**	**23**	**60**	**58**	**46**	**133**	**235**	**318**	**388**	**801**	**1.230**
Tesla estimated brand value													**3.293**

Table 47 - Results of the historical costs method

The sensibility table, Table 48, depicts how a 3,00% increase/decrease of the Salinas (2009) rate varies the value of the brand. The value oscillation is of around 4,00% increase/decrease benchmarking with a 75% rate and of a 1,50% increase/decrease for an increase/decrease of a 1,00% of the Salinas (2009) rate.

	Salinas (2009) Ratio of Brand Expenses							
	66,00%	69,00%	72,00%	75,00%	78,00%	81,00%	84,00%	87,00%
3.293	2.898	3.029	3.161	**3.293**	3.424	3.556	3.688	3.820

Table 48 - Historical method sensitivities

There is a lineal relationship, Figure 4, between the brand value and the change in the Salinas (2009) rate. The brand value moves inside the range $[0 – 4.390] m. This, in conjunction with the Replacement costs method, establishes a valuation floor. The next smallest valuation obtained, based on forecasts and current market benchmarks not past events, is of $6.693m as we will see in the transaction multiple method.

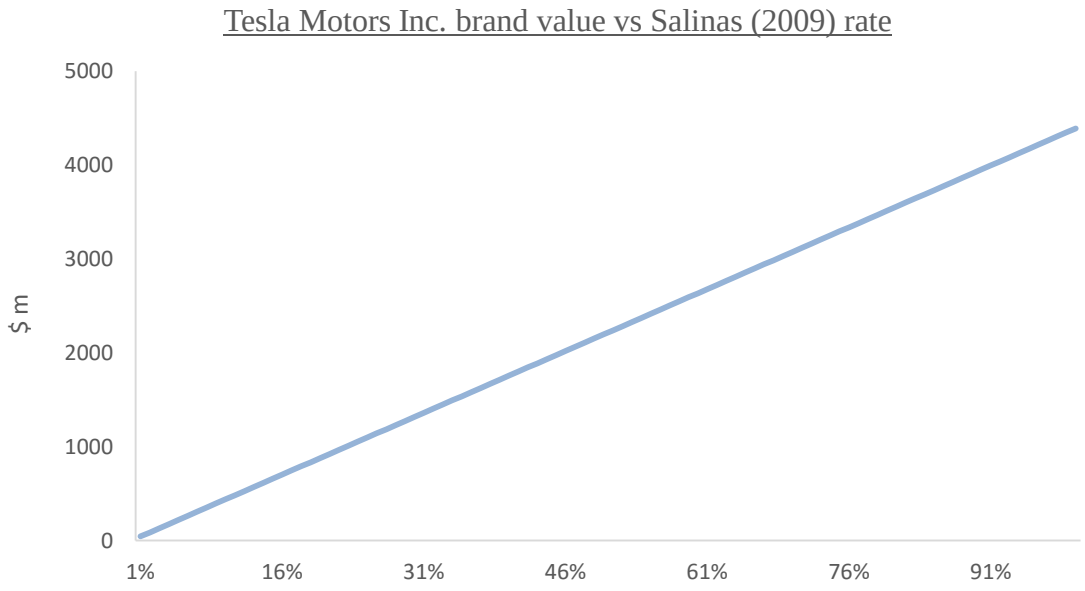

Figura 4 - Tesla Motors, Inc. brand value vs. Salinas (2009) rate

VII. Replacement costs method

There are a lot of similarities between the Replacement costs method and the Historical costs method. They both fundament their valuation on the brand recreation costs until now. The main addition to the Historical costs method is the presence of an inflation factor that helps track the time value of money.

The primary disadvantage with this method is assuming all prices are equal across countries. As theory very well explains, prices of the same goods and services have to be equal across countries. If not a hedging opportunity appears which shifts the demand and supply curves accordingly. Reality is, indeed, much different due to the presence of: taxes, transport costs and legislation among others. Tesla Motors, Inc. has a product offering with standardized prices, meaning that the theoretical Purchase Price Parity (PPP) withholds in its products. The Replacement costs method accounts more accurately inflation effects when used to value brands of other businesses and sectors, such as Consumer Goods enterprises.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
US Inflation (%)	2,30%	2,70%	3,40%	3,20%	2,90%	3,80%	-0,40%	1,60%	3,20%	2,10%	1,50%	1,60%	0,10%
Brand discount rate	12,97%												
Salinas (2009) ratio	75%												

Table 49 - Replacement costs methods hypothesis and US inflation from World Bank data

$m	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Revenues				0	0	15	112	117	204	413	2.013	3.198	4.046
Research and Development				25	63	54	19	93	209	274	232	465	718
Selling, General and Administrative				5	17	24	42	85	104	150	286	604	922
Total operating expenses				**30**	**80**	**77**	**61**	**178**	**313**	**424**	**518**	**1.068**	**1.640**
Salinas Ratio	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Tesla Brand-Related expenses				**23**	**60**	**58**	**46**	**133**	**235**	**318**	**388**	**801**	**1.230**
Inflation factor	1,023	1,027	1,034	1,032	1,029	1,038	0,996	1,016	1,032	1,021	1,015	1,016	1,001
Cumulated inflation factor	1,318	1,288	1,254	1,213	1,176	1,142	1,101	1,105	1,088	1,054	1,032	1,017	1,001
Present value of Tesla brand expenses				**28**	**71**	**66**	**51**	**147**	**255**	**335**	**401**	**815**	**1.231**
Discount Factor	4,32	3,82	3,38	3,00	2,65	2,35	2,08	1,84	1,63	1,44	1,28	1,13	1,00
Capitalized Brand Expenses				**83**	**187**	**156**	**105**	**271**	**416**	**484**	**511**	**921**	**1.231**
Brand Value													**4.364**

Table 50 - Results of the replacement costs method

		Salinas (2009) Ratio of Brand Expenses						
	4.364	60,00%	65,00%	70,00%	75,00%	80,00%	85,00%	90,00%
Discount rate	8,97%	3.219	3.487	3.756	4.024	4.292	4.560	4.829
	9,97%	3.284	3.558	3.832	4.105	4.379	4.653	4.927
	10,97%	3.352	3.631	3.911	4.190	4.469	4.749	5.028
	11,97%	3.422	3.707	3.992	4.277	4.562	4.848	5.133
	12,97%	3.494	3.785	4.076	**4.364**	4.659	4.950	5.241
	13,97%	3.569	3.866	4.164	4.461	4.759	5.056	5.353
	14,97%	3.646	3.950	4.254	4.558	4.862	5.166	5.470
	15,97%	3.727	4.037	4.348	4.658	4.969	5.279	5.590
	16,97%	3.810	4.127	4.445	4.762	5.080	5.397	5.715

Table 51 - Replacement costs sensibilities

The brand value obtained is of $4.364m. This value corresponds to the upper limit of the Historical costs valuation method range. The time value of money is especially present when significant expenses are made at a single point in time. The result obtained is not unsurprising but consistent with the assumptions and tools used.

A sensitivity analysis to compare the effects of the applicable discount rate and the rate Salinas (2009) mentions, was carried out in Table 51. The brand value change in value is in the range of approximately [5,00 – 8,50]% when there is a 5,00% increase/decrease of the Salinas (2009) rate (75%). This is due to a constant brand value change across the Salinas (2009) rate when the discount rate is maintained constant. Value oscillation is slightly higher when using a Historic costs valuation method but much lower when comparing it with the relief from royalty value sensibility.

1,00% change in the Discount rate used has little effect on the estimate situating value change in the range of $[65 – 125] m. We are aware of the different increments used, a 5,00% vs. 1,00% increment. But common sense dictates that the sensibility table should account for adjusted to reality rates. Having 5,00% increments in the discount rate would not give a clear picture on plausible rates and computing brand values for discount rates above 30% makes little to no sense.

VIII. Transaction multiple method

This market based approach uses recent market transactions in the automobile sector as comparable. The brand being valued has to have similar characteristics to its comparable benchmarks: brand image, brand cost efficiencies, market positioning and

reach. Being it difficult enough to achieve a relevant comparable table for enterprises and companies, honing for company specific intangible assets limits greatly the comparable universe.

Volkswagen AG's acquisition of Porsche Holding SE is the only relevant recent acquisition in the automobile sector, greatly damaged by the 2008 crisis and a low growth global environment. The model uses a sales multiple, as suggested by Anson, Noble and Samala (2014), obtained through the Volkswagen AG – Porsche Holding SE transaction. By applying this multiple to Tesla Motors Inc. 2015 sales, we obtain the implicit brand equity of the company.

Table 52 depicts in detail the metrics of the precedent transaction used as comparable and Table 53 carries a sensitivity analysis on the Sales multiple used.

Target	Acquiror	Transaction date	Implied Equity Value	EV	Transaction price ($ m)	Currency	Transaction scope	Brand price at transaction time	Estimated % attributable to brand	Target sales at acquisition (m)	Implied multiple
Porsche Automobil Holding SE	Volkswagen AG	01/08/2012	8.902	15.795	4.460	EUR	50.1% Equity	13.823	87,5%	10.928	1,3x
Average multiple											**1,3x**
Tesla brand 2015 sales											**5.292**
Estimated Tesla brand value											**6.693**

Table 52 - Results of the transaction multiple method

	6.693	5.292
	0,9x	4.763
	1,0x	5.292
	1,1x	5.821
Sales multiple	1,2x	6.350
	1,3x	**6.693**
	1,4x	7.409
	1,5x	7.938
	1,6x	8.467
	1,7x	8.996

Table 53 - Transaction multiple sensibilities

The brand value obtained is of $6.693m.

Market-approaches result in higher values than cost-based approaches although this cannot be established as a definite but rather as a rule of thumb. Market methods usually capture present market sentiment, and prices paid for relatively similar brands, more effectively.

There is a linear correlation between multiple change and value change. Changes of 0,1 units result in brand value changes of $530m approximately.

IX. Demand driver method

The Demand driver method is a market-based tool frequently used by brand valuation companies such as: Interbrand, Millward Brand, Saffron etc. As covered previously, the Demand driver method requires the estimation of future earnings, as well as current and past ones, from the studied brand and a comparable unbranded one. Salinas (2009) and Haigh (1994) restate the importance of the use of three-year weighted average to smooth possible distortions caused by short-term business cycles. The weighing process has to place more importance to future earnings than to present and past ones. This situation is especially critical in the case study given the internal and external company environment it currently finds itself in.

As commented previously, the current market stage of Tesla Motors, Inc., a blend between start-up and growth, makes its income statement difficult to compare with established car businesses. Commonly associated with oligopolies, car manufacturers are characterized by achieving huge economies of scale and strong margin protection policies.

The lack of an unbranded electric car manufacturer comparable in product characteristics/offering also calls for more weighting on future earnings. Currently, Tesla Motors, Inc. is at the upfront of the electric car manufacturing business, no sole electric manufacturers that can resemble it exists.

To take into account these two factors, we have placed much more importance to future earnings than to the past and on-going ones. The forecast span has also been increased. We have moved from a two-year forward coverage to a model that covers five years.

As comparable margins, EBITDA/Sales have been used. EBITDA margins are a more visible source of operations and serve as a better cash flow proxy than EBIT margins. Averaged EBITDA/Sales margin for Nissan Motor Company Limited and Ford Motor Company are used as benchmark values. These two automotive companies have established well-known brands but their electric car offering can be considered as an unbranded product in comparison to Tesla Motors, Inc.

The valuation model has been developed in four stages:

a) Calculation of brand differential earnings, Table 55: Calculated as the percentage difference between the EBITDA/Sales margins between Tesla Motors, Inc. and the average between Nissan Motor Company and Ford Motor Company. The results are corrected for inflation, for capital remunerations and for adequate weighting on future earnings. Capital remunerations are Vishwanath S.R. (2000), "charges for capital tied up in the production of the brand, which one might have earned by producing the generic". This corresponds to the average ROCE rate of the USA industry as of February 13th, 2016 and needs to be subtracted from the earnings achieved.
b) Brand strength factor, Table 56: This is a subjective classification that evaluates Tesla Motors Inc.'s brand in seven fields known to have a high correlation with brand equity. These fields have each a maximum score and together they add up to 100.
c) S-curve construction, Table 57 and Figure 5: An S-Curve is constructed assuming a normal distribution between the P/E multiple and the brand score. Here 50 is the industry average. The minimum/maximum P/E averages are also required to construct the S-Curve and table. Once done, the P/E corresponding to Tesla Motors Inc.'s brand score is obtained.
d) Final result: With the earnings and the multiple to apply, the brand value is calculated.

Hypothesis		
Tax rate	20,00%	*See common hypothesis*
WARA	12,97%	*See common hypothesis*

Table 54 - Demand driver common hypothesis

$m	year -1 2014	year 0 2015	year +1 2016	year +2 2017	year +3 2018	year +4 2019	year +5 2020
Tesla EBITDA	284	214	673	1398	1747	2023,8	2951,1
Tesla EBITDA margin (%)	7,90%	4,03%	8,86%	17,84%	20,31%	16,73%	14,72%
Ford company EBITDA margin (%)	7,26%	9,75%	9,71%	9,75%	8,27%	8,12%	7,96%
Nissan company EBITDA margin (%)	8,20%	8,70%	9,65%	9,70%	9,25%	10,00%	10,20%
Average unbranded EBITDA profit margin (%)	**7,73%**	**9,23%**	**9,68%**	**9,72%**	**8,76%**	**9,06%**	**9,08%**
EBITDA margin difference (%)	0,17%	(5,19)%	(0,83)%	8,11%	11,54%	7,67%	5,64%
Brand EBITDA differential	0	(11)	(6)	113	202	155	167
Inflation adjustment	1,00	1,00	1,01	1,03	2,05	2,10	2,15
Brand EBIT differential inflation adjusted	0	(11)	(6)	117	414	327	358
Present value of brand's differential EBITDA	**1**	**(11)**	**(5)**	**91**	**287**	**200**	**195**
Weighting factor	1	2	3	4	5	6	7
Brand's weighted financial EBITDA		**155**					
Allowance for future reduction of EBITDA							
Capital remuneration		82					
Brand's differential earnings before tax		73					
Tax		15					
Brand's differential earnings		**58**					

Table 55 - Results of the Demand driver method

Table 55 outputs brand differential earnings of $58m. Nissan Motor Company and Ford Motor Company, though very well known, have been used as comparable. Their product offering: Nissan Leaf[18] and Ford Focus Electric[19] can be considered as substitutes to Tesla Motors, Inc.'s product offering. Their forecasted EBITDA margins are obtained by averaging UBS, BNP and Morgan Stanley Brokers Reports as of February 2016. The calculations made for inflation are obtained through the IMF database and the ROCE rate used to correct for capital remuneration is the Auto & Parts US industry average as of April 13th, 2016[20]. No allowances for future EBIT reductions were considered and the weighting factor was increased by one unit for every increased year. The higher influence future earnings had on the final result, the more market resemblance could be established between the studied brand and the benchmark used.

Strength factor	**Maximum**	**Tesla**
Leadership	25	12,5
Stability	15	5
Market	10	10
Internationality	25	12,5
Trend	10	10
Support	10	10
Protection	5	5
Brand Strength	**100**	**65**

Table 56 - Brand strength table computation

Table 56, is a subjective calculation to assess brand strength. The higher the brand strength score, the closer to the sector higher P/E ratios the company will be. Higher multiples imply higher brand valuations.

Interbrand's proprietary framework makes possible to better calculate intangible aspects that drive brand equity worth and strength. Ratings given in each field are subjective and susceptible to change but a Strength Score vs. Brand Earnings sensibility analysis, Table 59, concludes that brand value variability is very small and approximately increases/decreases 0,20% for a five-unit brand score change. The points given for each segment were based on the following:

- Leadership: Defined as "The ability of a brand to function as a market leader and hold a dominant position"[21]. The mass-market car-manufacturing sector is an

[18] www.nissanusa.com/electric-cars/leaf/
[19] www.ford.com/cars/focus/trim/electric/
[20] pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html
[21] Gabriela Salinas, 'The International Brand Valuation Model', 2009, Wiley & Sons Ltd.

oligopoly dominated by Toyota Motors Corp, Volkswagen AG, General Motors etc.[22]. Their global market share spans in the range of [4,00 – 11,00]% Tesla Motors, Inc.'s car produced cannot account for even a 0,10% of the global car production. The score given is average, 12,5/25, for two reasons. First, it is a company in a transformation process moving towards a mass-market business model. Secondly, it is the best-positioned company in the electric car market, one of the fastest growing automotive segments.

- Stability: "The ability of a brand to retain its image and consumer loyalty over long periods of time"[21]. Tesla Motors Inc. is not an established competitor and its ability to maintain customer loyalty is yet to proof. A short period of time has passed since its inception and its product offering is not wide enough to evaluate if the consumer segment it targets can be classified as brand engaged or not. The company is clearly below average though with huge potential, captured with an overall score of 5/15.
- Market: "Brands in growing and stable markets with strong enough barriers" (Salinas 2009). The electric car market in the USA and Europe, very stable markets, is one of the fastest growing sectors with huge barriers to entry. Mass-market manufacturing companies have high CAPEX, D&A and economies of scale. The fact that Tesla Motors Inc. invested $10bn to achieve economies of scale in its mass-market transition[23] is also captured in an overall result of 10/10.
- Internationality: A brand with internationally diversified revenue streams is of higher value. Currently Tesla Motors Inc., though not a regional operator, operates in the USA and North Europe. It intends to diversify its operations internationally though achieving a distribution similar to current competitors is a long distance plan. Therefore it has been classified as industry average, 12,5/25.
- Trend: "The ability of a brand to remain relevant and consistent to consumers" (Salinas 2009). Tesla Motors Inc. remains relevant and consistent to consumers to unexpected levels. The periodic release of new products is compared to Apple's new product release offering. Moreover, the unexpected amount of pre-

[22] www.statista.com/statistics/316786/global-market-share-of-the-leading-automakers/
[23] www.thecountrycaller.com/19246-can-the-tesla-motors-inc-tsla-gigafactory-really-slash-battery-costs-by-30/

orders on its Model 3 car[24] validate its high consumer relevance. The result given is 10/10.

- Support: Measured as the brand investment of a company. It is normally measured as the amount of capital dedicated to brand investment. However, the case of Tesla Motors Inc. is special given that it has achieved a big brand support by making use of low-cost brand building strategies: mainly social media and word-of-mouth. An overall result of 10/10 was given.
- Protection: The trademark legal protection.

Sector P/E ratios	
High	23,00x
Low	7,00x
Average	13,00x

Brand Score	**P/E Multiplier**
0	7,00x
5	8,98x
10	9,64x
15	10,20x
20	10,70x
25	11,13x
30	11,49x
35	11,94x
40	12,26x
45	12,58x
50	12,91x
55	13,25x
60	13,62x
65	14,02x
70	14,45x
75	14,86x
80	15,36x
85	16,01x
90	16,86x
95	18,10x
100	23,00x

Table 57 - S-Curve construction

[24] www.hollywoodreporter.com/news/model-3-orders-400000-884898

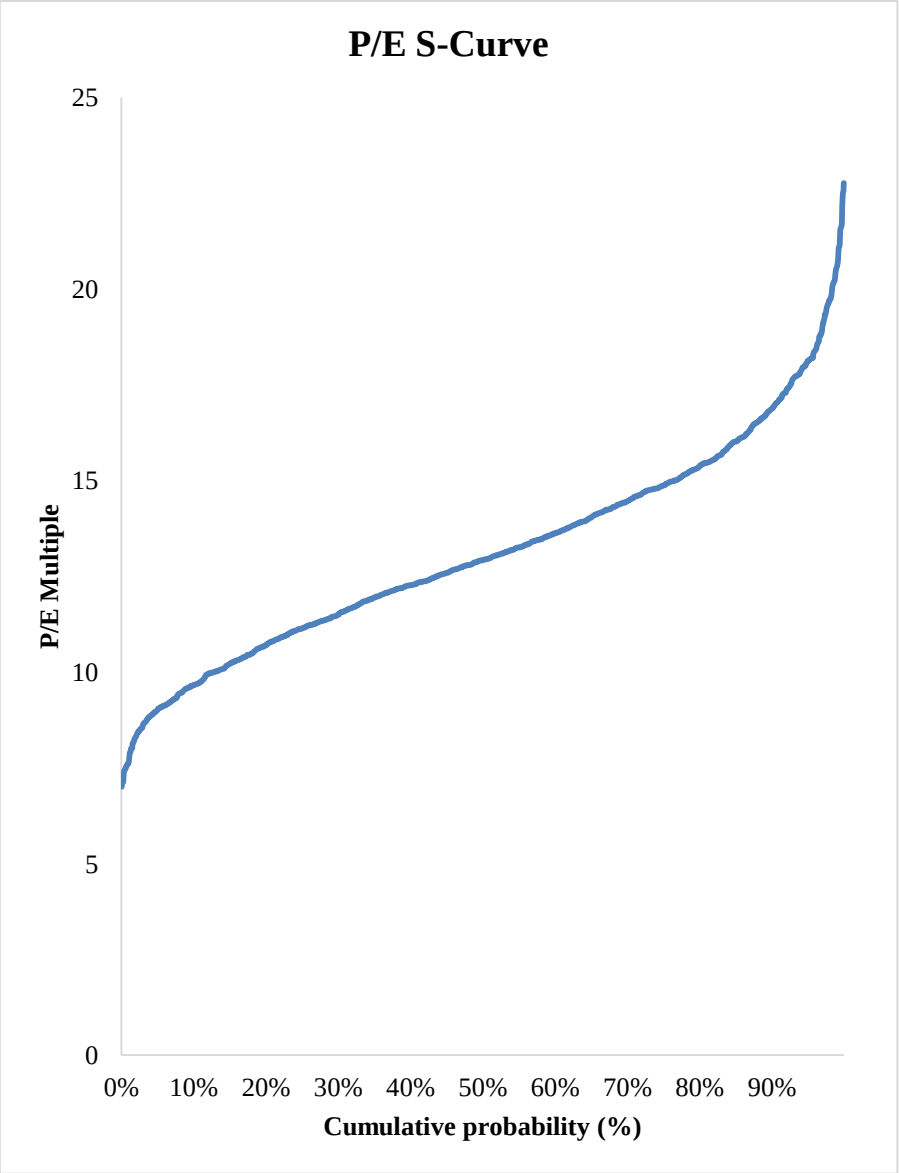

Figure 5 - S-Curve chart

Strength score	65
Multiple	x14,02
Brand's differential earnings ($M)	58
Tesla Brand Value ($M)	**813**

Nissan Motor Company Interbrand 2015 Brand Equity ($M)	9.082
Ford Motor Company Interbrand 2015 Brand Equity ($M)	11.578
Differential Brand Value ($M)	813
Tesla Brand Value ($M)	**11.143**

Table 58 - The results of the Demand driver method

		Strength score						
	11.145	50	55	60	65	70	75	80
	46	10.924	10.940	10.956	10.975	10.995	11.014	11.037
	49	10.963	10.979	10.997	11.017	11.038	11.058	11.083
	52	11.001	11.019	11.038	11.059	11.082	11.103	11.129
Brand	55	11.040	11.059	11.079	11.101	11.125	11.147	11.175
earnings	58	11.079	11.099	11.120	**11.143**	11.168	11.192	11.221
($ m)	61	11.118	11.138	11.161	11.185	11.212	11.237	11.267
	64	11.156	11.178	11.202	11.227	11.255	11.281	11.313
	67	11.195	11.218	11.242	11.269	11.298	11.326	11.359
	70	11.234	11.258	11.283	11.311	11.342	11.370	11.405

Table 59 - The results of the demand driver method

The initial value obtained is $813m. It would seem that the result is the lowest by far, but it is misleading. As previously explained, we benchmarked Tesla Motors Inc. with Nissan Motor Company and Ford Motor Company, two well-established and known brands with a high brand equity value. Interbrand 2015[25] global brand classification values each brand at $9.082m and $11.578m respectively. The result obtained has to be added to the average between said brand equity values. This is final step needed to correct for the lack of comparable unbranded companies.

The brand valued is then of $11.143m a valuation much more consistent with market valuations obtained until now.

X. Price to sales difference ratio

In this methodology, we are comparing the price to sales ratio of a "branded" company (Tesla Motors, Inc.) to a "non-branded" one. In the case of Tesla Motors, Inc., it has been really difficult to find a "generic" company in the automotive industry specialised in electric vehicles. Only unlisted, recently created companies exist and data access was the main problem. As a consequence, once again, we decided to pick a listed company from the automotive industry that manufactures pure electric vehicles and has similar operational risks to Tesla Motors, Inc. Ford Motor Company was the chosen one.

Controversy can arise from the fact that the Ford Motor Company brand equity value is higher than Tesla Motors, Inc.'s one. Being Tesla Motors, Inc. a pure electric vehicle

[25] interbrand.com/best-brands/best-global-brands/2015/ranking/

player and being that the case study analyses pure electric companies, the choice of the Ford Motor Company is thought as a conservative and reasonable approach.

To compute the value of Tesla Motors, Inc. brand equity two approaches are used. The first one, based on Damodaran's formula and the second on price to sales ratio provided by Reuters.

The Damodaran method assumes the following hypothesis:

Tesla Motors, Inc.:

- EBIT margin of 5,00%, which is the value that Barclays Broker Report estimates for 2020. As of 2015, Tesla has a negative EBIT margin, which is not representative of its future state.
- Tesla Motors, Inc. does not pay dividends[26], and it is expected to continue without paying dividends in the foreseeable future. Assuming a 0,00% dividend pay-out rate and perpetuity pay-out rate would lead us to a $0m brand equity value. In order to apply this methodology, we chose a present dividend pay-out of 0,00% and a perpetuity pay-out rate of 1,00%. This 1,00% is below the automotive industry average of 3,00%[27].
- In order to compute the current growth rate, we averaged last two years rates, of 41,8%, are used as proxy. Considering the last five years average growth, its value would be of 103,2%, which is not representative of the actual situation. The perpetuity growth rate, as we stated in our hypothesis, is 5.97%.

Table 60 summarizes assumptions made:

Tesla Motors, Inc. hypothesis		
EBIT	5,0%	*Forecasted in 2020 by Barclays*
Sales ($m)	5.292	*From Tesla annual report 2015*
Current payout ratio	0,00%	*From Tesla annual report 2015*
Perpetual payout ratio	1,00%	*From Tesla annual report 2015*
Current growth rate	41,8%	*Own assumptions*
Perpetual growth rate	5,97%	*Own assumptions*
Current discount rate (WACC)	9,97%	*Own estimates*
Perpetual discount rate (WACC)	9,97%	*Own estimates*

Table 60 - Tesla Motors, Inc. hypothesis for the price to sales valuation

[26] Tesla Motors, Inc. 2016 10-K Annual Report's dividend's policy
[27] Reuters

Ford Motor Company:

- Ford Motor Company's weighted average cost of capital is explained in Table 61. The same approach as Tesla Motors, Inc.'s WACC computation has been used. This results in a WACC of 4,60%.
- Current growth rate is estimated using the past five years averages obtaining a value of 3.3%. The perpetuity growth uses the same value.

The below tables, Table 61 / Table 62 / Table 63 / Table 64 / Table 65 contain the details of Ford Motor Company WACC calculations and the hypothesis used.

Ford Motor WACC calculation		
Beta	1,40	*From Reuters*
Risk-free rate	1,80%	*US 10 yrs government bond*
ERP	6,76%	*Own estimate*
Cost of equity	**11,3%**	
Cost of debt	2,20%	*From Wright Investor Services*
Tax rate	20%	*From Reuters*
After tax cost of debt	**1,80%**	
Gearing	**70,40%**	*Own estimate*
Estimated WACC	**4,60%**	

Table 61 - Ford Motor WACC calculation

		Sales 2015 ($m)	% of total	Damodaran ERP estimates
United States	North America	93.142	62,3%	6,25%
United Kingdom	Western Europe	11.451	7,7%	6,29%
Canada	North America	8.978	6,0%	6,25%
Germany	Western Europe	6.950	4,6%	6,25%
All Other		29.037	19,4%	8,86%
Total		**149.558**	**100,0%**	**6,76%**

Table 62 - Ford Motor risk premium calculation

	Damodaran ERP estimates[28]
South America	10,83%
West Europe	7,50%
East Europe	10,03%
Middle East and Africa	7,40%
Africa	12,22%
Asia Pacific	7,79%
Pacific	6,26%
Average	**8,86%**

Table 63 - Ford Motor ERP calculation for All Other

Ford Motors Capital Structure		
Number of shares outstanding	3.969.513.255	*From Annual Report*
Share price as of April 10th, 2016	12,55	*From yahoo!*
Equity (Market Cap) ($m)	**49.817**	
Long-term debt	132.854	*From Annual Report*
Short-term debt	0	*From Annual Report*
Cash and cash equivalents	14.272	*From Annual Report*
Net Debt	**118.582**	
Equity (Market Cap)	49.817	29,60%
Net Debt	118.582	70,40%
Total Capitalization	**168.399**	**100,00%**

Table 64 - Ford Motor capital structure as of April 10th, 2016

Ford Motor hypothesis		
EBIT	6,80%	*JP Morgan*
Sales ($m)	140.566	*JP Morgan*
Current payout ratio	30,90%	*JP Morgan*
Perpetual payout ratio	30,90%	*JP Morgan*
Current growth rate	3,30%	*Own assumptions*
Perpetual growth rate	3,30%	*Own assumptions*
Current discount rate (WACC)	4,60%	*Own estimates*
Perpetual discount rate (WACC)	4,60%	*Own estimates*

Table 65 - Ford Motor hypothesis for the price to sales valuation

[28] These ERP by region are weighted average with the GDP

Finally, perpetuity growth assumptions consider a 15-year-span, (n=15) after a period of growth stabilization for both companies. As already pointed out, Tesla Motors, Inc. has start-up characteristics.

Computing the brand value with the price to sales difference methodology using both methods give the following results:

Damodaran approach	
Tesla price to sales ratio	2,27
Non-branded price to sale ratio	0,36
P/S ratios difference	**1,91**
Sales ($m)	5.292
Tesla Brands value ($m)	**10.114**

Table 66 - Tesla brand equity valuation with Damodaran approach

Market approach		
Tesla share price to sales ratio	8,16	*From Reuters*
Non-branded share price to sale ratio	0,33	*From Reuters*
P/S ratios difference	**7,83**	
Sales ($m)	5.292	*From Annual*
Tesla brands value ($m)	**41.432**	

Table 67 - Tesla brand equity valuation with market approach

The sensitivity table, Table 68, analysis different hypothesised parameters when applying the Damodaran approach:

Perpetual growth rate	Number of years before perpetuity considerations							
	10.114	12	13	14	15	16	17	18
	3,97%	-857	850	3.053	5.952	9.833	15.098	22.322
	4,47%	-592	1.227	3.587	6.709	10.905	16.618	24.476
	4,97%	-273	1.679	4.227	7.616	12.192	18.442	27.062
	5,47%	116	2.231	5.010	8.726	13.765	20.673	30.223
	5,97%	604	2.922	5.989	**10.114**	15.733	23.462	34.177
	6,47%	1.231	3.810	7.249	11.900	18.264	27.050	39.263
	6,97%	2.067	4.996	8.929	14.282	21.641	31.837	46.049
	7,47%	3.239	6.657	11.285	17.621	26.373	38.545	55.559
	7,97%	4.999	9.153	14.822	22.635	33.482	48.622	69.843

Ford Motors Company brand current discount rate	Tesla Motors, Inc. brand current discount Rate						
10.114	6,97%	7,97%	8,97%	9,97%	10,97%	11,97%	12,97%
0,57%	33.057	7.860	-489	-4.652	-7.146	-8.806	-9.990
1,57%	33.495	8.298	-51	-4.214	-6.708	-8.368	-9.552
2,57%	29.755	4.559	-3.790	-7.953	-10.447	-12.107	-13.292
3,57%	72.039	46.842	38.494	34.330	31.836	30.176	28.992
4,57%	47.823	22.627	14.278	**10.114**	7.621	5.960	4.776
5,57%	46.208	21.012	12.663	8.499	6.005	4.345	3.161
6,57%	46.087	20.891	12.542	8.378	5.885	4.224	3.040
7,57%	46.320	21.124	12.775	8.611	6.118	4.458	3.273
8,57%	46.651	21.455	13.106	8.942	6.449	4.788	3.604

Ford Motors Company brand perpetual discount rate	Tesla Motors, Inc. brand perpetual discount rate						
10.114	6,97%	7,97%	8,97%	9,97%	10,97%	11,97%	12,97%
0,57%	57.759	33.473	25.423	21.406	18.999	17.395	16.250
1,57%	59.728	35.443	27.393	23.376	20.969	19.365	18.220
2,57%	66.835	42.549	34.499	30.482	28.075	26.471	25.326
3,57%	12.942	-11.343	-19.393	-23.410	-25.817	-27.421	-28.566
4,57%	46.467	22.181	14.131	**10.114**	7.707	6.103	4.958
5,57%	49.965	25.679	17.629	13.612	11.205	9.601	8.457
6,57%	51.299	27.013	18.963	14.946	12.539	10.936	9.791
7,57%	52.003	27.717	19.667	15.650	13.243	11.639	10.494
8,57%	52.437	28.152	20.102	16.085	13.678	12.074	10.929

Table 68 - Difference price to sales ratio sensibilities

The Damodaran method output gives a brand equity value of $10.114m and the market approach a value of $41.432m.

XI. Real options method

Growth opportunities embedded in the brand and their required investment over time are used as brand value drivers. Like developed by González Londoño, Zuluaga Carmona and Maya Ochoa (2012), brand marketing expenses can be viewed as growth options where each opportunity represents an option at a given stage and time.

Calculating the payoff of each option and adding the cumulative payoffs to a no growth situation is the case study calculated brand value.

Growth opportunities can be classified in three basic divisions: brand expansion, brand extension and customer relationship & retention. In the long term, Tesla Motors Inc. as reported in its 2016 10-K Sec Filings Annual Report is focusing exclusively on entering new markets. Option valuation is, as a result, not considered for brand extension or customer relationship & retention growth opportunities: "Since we now offer our vehicles in many countries throughout North America, Europe and Asia, our expansion will primarily occur in geographic areas in which we already have a presence".

Identifying Tesla Motors Inc.'s strategic plan is the first step of the process. Brand development will be carried out through market expansion mainly: North America (US and Canada), China and Europe. 2016 10-K Sec Filings Annual Report also points out that the expected long-term international sales trend will eventually represent 50% of the worldwide automotive revenue. "We expect our long-term sales outside of North America will be almost half of our worldwide automotive revenue".

The second stage of the Real Options valuation method is establishing a no growth situation as the valuation base upon which to add the value of the future brand growth opportunities studied (Table 70). A no growth situation is given after the expansion investments done in the previous years are completed. At this point in time maintenance investments is assumed and a 0% revenue growth perpetuity. Brand valuation literature considers two to three years as the amount of time required by already done investments to payoff. The case study establishes 2018 as the first no growth year.

Once the no growth situation is established, a classic valuation method is used to obtain the base brand value upon which the three different option values calculated are added. This base brand value is calculated using a Royalty relief method using the same royalty rates as the method developed in section E.II.

2018 is the point at which all investments made until now will have payed off. It is precisely at this point in time, when Tesla Motors, Inc. should decide whether to pursue or not its brand expansion strategy in the three selected markets. Barclays Broker

Report estimates reach 2020, 2018's next strategic decision year. At this point, the 2018 investment decision will have already paid-off.

The 2018 strategic decision grants the company with two possibilities:

- No growth: This option implies maintenance investment to protect, but not grow revenues.
- Growth: This option implies a higher CAPEX but gives entry to sales growth.

Option valuation of each strategic market is then calculated using Black & Scholes formula. It is important to emphasis on the fact that said procedure makes use of revenue change as a proxy for brand growth option and that the lack of available strategic information has caused the use of certain assumptions that could make the value obtained differ greatly from other methods or future realities.

Table 69 depicts the hypothesis used and Table 70 the base income statement used to obtain by means of a Relief from royalty method. All rate assumptions made at this point are in line with the rest of the valuation models created (common hypothesis). Option values are obtained by applying the Black & Scholes formula for each market expansion and are added to the base valuation but only if their value is positive.

The investment schedule, Table 71, is the second part of the valuation process. It basically values the necessary amount to capitalize each brand growth option and can be thought as the required initial investment to implement it. The case study has assumed as valid the 2016 10-K Annual Report premise of Tesla Motors Inc. stating that it would make 50% of its revenues outside North America. The company does not disclose in any of its investor relationship documents the exact future revenue or CAPEX mix so an equal distribution between the European and Chinese market is assumed. The study allocates an equal CAPEX to these two markets, 25% each, and the rest, 50%, to North America. The total growth investment amounts to $2.274bn[29], the Gigafactory $5bn investment has already been made and is therefore not included in the investment schedule of future growth opportunities. The pay-off time for this investment is presumed to be 2018, point at which the manufacturer will be capable of operating at full potential and be able to meet all demand.

[29] Tesla Motors, Inc.'s 2016 10-K Sec Filings

Real options hypothesis		
Royalty rate	5,38%	*Royalty relief hypothesis*
Discount rate	12,97%	*See common hypothesis*
Tax rate	20,00%	*See common hypothesis*
Perpetual growth rate	0,00%	*No growth hypothesis*
Lifetime of the brand	Indefinite	*See common hypothesis*
Attributable to brand	70,00%	*Patrick Legland*

Table 69 - Real options hypothesis

$m	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Year	0	1	2	3	4	5	6	7	8	9	10
Sales	5.292	7.596	7.839	8.603	8.603	8.603	8.603	8.603	8.603	8.603	8.603
% Growth	*499,50%*	*43,54%*	*3,20%*	*9,75%*	*0,00%*	*0,00%*	*0,00%*	*0,00%*	*0,00%*	*0,00%*	*0,00%*
Pretax royalty income	285	409	422	463	463	463	463	463	463	463	463
Taxes	(57)	(82)	(84)	(93)	(93)	(93)	(93)	(93)	(93)	(93)	(93)
After taxes royalty income	**228**	**327**	**337**	**370**	**370**	**370**	**370**	**370**	**370**	**370**	**370**
Discount factor	1	0,88	0,78	0,69	0,61	0,54	0,48	0,43	0,38	0,33	0,29
Present value of royalty income		289	264	257	227	201	178	157	139	123	109
Sum of discounted royalty income	1.945										
Terminal value											2.848
Present value of terminal value	826										
Brand no growth value	**2.771**										

Table 70 - Real options no growth model base model calculated through a Relief from royalty method

$m		2018	2019
Tesla Capex forecasts		2.151	2.419
(D&A)		1.620	1.766
Total Capex dedicated to growth		531	653
Attributable to brand		70,00%	70,00%
Capex to expense for one year		372	457
Capex value in 2018 (discounted WACC)	13,00%	372	405
Target investment costs		**776**	
North America	50,00%	388	
Europe	25,00%	194	
China	25,00%	194	
Total Investment		**776**	

Tabla 71 - 2018 to 2020 investment schedule

The next step of the process is valuing individually each growth opportunity. Marketline Hybrids & Electric Vehicles market study, as of December 2015, includes estimates and current figures of the electric vehicles market size in 2018 and 2020 for each of the studied regions. In conjunction with Barclays Broker Report the case study is able to estimate the brand´s attributable revenue difference between 2020 and 2018. It is considered that, in the event that Tesla Motors, Inc. decides not to pursue a growth expansion opportunity, the revenues of the company will not grow beyond 2018.

The difference in brand allocable expected revenues in 2020 between calling, or not, in 2018 the brand region growth option is calculated. Discounting this difference to the present value and applying a Black & Scholes procedure determines the value of the option. If positive, said value will be added to the no growth base case.

The Black & Scholes formula makes use of the hypothesis of a normal cumulative distribution and requires the input of expected volatility, present value of the investment and differential revenue streams. It is important to note in this valuation stage that due to the lack of available information and with the desire to be as conservative as possible, volatility values applied have an imbedded margin of safety in them, specifically a 1.5 multiplying factor. The main reason is the high market share price volatility caused by the more than significant market buzz around Tesla Motors Inc. due to the release of their new car the Tesla Model 3.

Table 72 and Table 73 contain the value and calculations made for the North America brand expansion option. Different WACC calculations are required for each region of study. The cash flow's risk depends on the region of study meaning that the case study will create three WACCs, one for each region. Brand risk is not applicable since the cash flows obtained concern only operations in the selected regions and the risk associated to them.

The value is of $2.781m.

Tesla Motors, Inc. 2016	
Attributable to brand (% of Sales)	70,00%
Estimated Tesla brand sales	2031
Estimated Tesla brand market share	10,51%

Current 2016	Current 2016	2018 objective	2020 objective
Market Size ($m) [30]	19.321	18.992	32.613
Market Size (units) [30]	533.663	625.459	815.186
Estimated Tesla Revenue ($m) [31]	2.901	4.302	10.021
Estimated Tesla market share	15,02%	22,65%	30,73%
Tesla brand sales	**2.031**	**3.011**	**7.015**
Estimated brand sales (no market share growth)	-	(2.031)	(3.011)
Expected cash flow	**-**	**980**	**4.004**

Table 72 - North America call option hypothesis and differential cash flows

[30] Marketline Hybrids & Electric Vehicles market study, as of December 2015
[31] Barclays Brokers Report as of 2/11/2016

Black & Scholes			
2020 Target investment	388	Risk free rate	1,72%[32]
PV of 2020 expected cash flows	3.153		
Investment decision delay (years)	2	Tesla Motors, Inc. Beta	1,37[33]
Risk free rate discrete	1,72%[32]		
Riske free rate continuous	1,71%	Equity Risk Premium	6,12%[34]
Estimated volatility of the 2020 investment cash flows	65,40%	Cost of equity	10,10%
S	3.153	Cost of debt	3,50%[35]
E	388	Effective tax rate	20%
d1	2,764295735	Gearing ratio	2,49[33]
d2	1,839400065	**Estimated WACC**	4,89%
fi(d1)	0,997		
fi(d2)	0,967		
Call option value	**2.781**		

Tabla 73 - North America Black & Scholes option calculation

The option value is of $2.781m.

[32] 10Y USA Government Bond as of 5/5/2016
[33] Financial Times Tesla Motors, Inc. Market as of 5/5/2016
[34] Damodaran's American Equity Risk Premium current data, as of January 2016: people.stern.nyu.edu/adamodar/New_Home_Page/datacurrent.html
[35] Tesla Motors, Inc. 2016 10-K Sec Filings Annual report

Tesla Motors, Inc. 2016	
Attributable to brand (% of Sales)	70,00%
Estimated Tesla brand sales	1.197
Estimated Tesla brand market share	7,82%

	Current 2016	**2018 objective**	**2020 objective**
Market Size ($m) [36]	15.319	33.503	57.255
Market Size (units)[36]	375.846	748.220	1.229.761
Estimated Tesla Revenue ($m) [37]	1.711	2.151	10.021
Estimated Tesla market share	11,17%	6,42%	17,50%
Tesla brand sales	1.197	1.506	7.015
Estimated brand sales (no market share growth)	-	(1.197)	(1.506)
Expected cash flow	**-**	**308**	**5.509**

Table 74 - European call option hypothesis and differential cash flows

[36] Marketline Hybrids & Electric Vehicles market study, as of December 2015
[37] Barclays Brokers Report as of 2/11/2016

Black & Scholes			
2020 Target investment	194	Risk free rate	0,69%[38]
PV of 2020 expected cash flows	1.173		
Investment decision delay (years)	2	Tesla Motors, Inc. Beta	1,37[39]
Risk free rate discrete	0,69%[38]		
Riske free rate continuous	0,69%	Equity Risk Premium	7,45%[40]
Estimated volatility of the 2020 investment cash flows	65,40%	Cost of equity	10,90%
S	1.173	Cost of debt	3,50%[41]
E	194	Effective tax rate	20%
d1	2,422300214	Gearing ratio	2,49[33]
d2	1,497404544	**Estimated WACC**	5,12%
fi(d1)	0,992		
fi(d2)	0,933		
Call option value	**985**		

Table 75 - Europe Black & Scholes option calculation

For the European market the procedure used is the same (Table 75). WACC assumptions are modified accordingly. Likewise to the North America market growth strategy, a Tesla Motors, Inc. future revenue mix of 25% Europe, 25% China and 50% North America is hypothesised. This way consistency with its 2016 10-K Annual Sec Filings report is maintained.

The value obtained is of $967m, inferior to North American market. Though the European population is bigger, a smaller GDP per capita and a still infant electric vehicle market and infrastructure seriously lags expected European brand growth option value.

The option value is of $985m.

[38] 10Y USA Government Bond as of 5/5/2016
[39] Financial Times Tesla Motors, Inc. Market as of 5/5/2016
[40] Damodaran's American Equity Risk Premium current data, as of January 2016: people.stern.nyu.edu/adamodar/New_Home_Page/datacurrent.html
[41] Tesla Motors, Inc. 2016 10-K Sec Filings Annual report

Tesla Motors, Inc. 2016	
Attributable to brand (% of Sales)	70,00%
Estimated Tesla brand sales	468
Estimated Tesla market share	7,47%

	Current 2016	**2018 objective**	**2020 objective**
Market Size ($m) [42]	6.258	41.801	119.453
Market Size (units)[42]	375.846	748.220	1.229.761
Estimated Tesla Revenue ($m) [43]	668	2.151	10.021
Estimated Tesla market share	10,68%	5,15%	8,39%
Tesla brand sales	**468**	**1.506**	**7.015**
Estimated brand sales (no market share growth)	-	(468)	(1.506)
Expected cash flow	**-**	**1.038**	**5.509**

Table 76 - China call option hypothesis and differential cash flows

[42] Marketline Hybrids & Electric Vehicles market study, as of December 2015
[43] Barclays Brokers Report as of 2/11/2016

Black & Scholes			
2020 Target investment	194	Risk free rate	2,92%[44]
PV of 2020 expected cash flows	4.639		
Investment decision delay (years)	2	Tesla Motors, Inc. Beta	1,37[45]
Risk free rate discrete	2,92%[44]		
Riske free rate continuous	2,88%	Equity Risk Premium	7,18%[46]
Estimated volatility of the 2020 investment cash flows	65,40%	Cost of equity	12,76%
S	4.639	Cost of debt	3,50%[47]
E	194	Effective tax rate	20%
d1	3,957082283	Gearing ratio	2,49[33]
d2	3,032186613	**Estimated WACC**	11,31%
fi(d1)	1,000		
fi(d2)	0,999		
Call option value	**4.456**		

Table 77 - China Black & Scholes option calculation

For the Chinese market, Table 77, contains the hypothesis and calculations done but adapted accordingly to the region. Again, all modifications to adapt the model to the region have been made.

The resulting value is of $4.456m, much higher than the European or North American growth options. It is reasonable given the bigger size of the Chinese market, the large expected growth rates and the public policy to shift to more sustainable sources due to an increase in contamination metrics. The addition of the calculated option values to the base scenario results in the overall brand valuation by means of real options (Table 78).

Real Options brand value summary	
Brand value (classic method)	2.771
North America	2.781
Europe	985
China	4.456
Overall brand value	**10.993**

Table 78 - Black & Scholes option calculation

[44] 10Y USA Government Bond as of 5/5/2016
[45] Financial Times Tesla Motors, Inc. Market as of 5/5/2016
[46] Damodaran's American Equity Risk Premium current data, as of January 2016: people.stern.nyu.edu/adamodar/New_Home_Page/datacurrent.html
[47] Tesla Motors, Inc. 2016 10-K Sec Filings Annual report

E. Results and conclusions on Tesla Motors, Inc. brand valuation

The following table classifies the different results calculated by methodologies used and general approaches:

Brand Value ($m)		
Benchmark	Brand Finance	2.823
	Market Goodwill Approach	20.291
Cost-Based	Historical Costs Method	3.293
	Replacement Cost Method	4.364
Market-based	Price to Sales difference ratio	10.114
	Transaction Multiple Method	6.693
	Royalty Relief method	22.025
Income-based	Price Premium Method	24.797
	Demand Driver Approach	11.143
	Real Options	10.993
	Margin Comparison Method	28.517
	Excess Cash Flow Method	18.739
	Max	**28.517**
	Min	**2.823**
	Average	**14.634**

Table 79 - Summary of Tesla Motors, Inc. brand equity value results obtained

Brand value results largely vary depending on the methodology and approach used. The value range spans from a minimum value of $2.823 m from Brand Finance and a maximum value $28.517 m with the margin comparison method.

Four methodologies result in outputs higher than the market goodwill method ($20.291 m) which is considered to be the highest possible value and benchmark for Tesla Motors, Inc. Comparing results with the current market goodwill value of $28.987m (as of 03/05/2016) computed in section D-d-I, it is observed that none of the brand equity values obtained surpasses $28.987 m. Two potential lectures can explain this idea:

- In the case of Tesla Motors, Inc., the possibility that brand goodwill accounts for more than 70%. If true, all values obtained would remain below this theoretical ceiling.
- The second lecture, and possibility the most realistic one, is that results are very sensitive to assumptions made and output values bigger than $20.291 m.

An important objection to be done here is that the market goodwill value is linked to the Tesla Motors, Inc.'s share price. Looking at its evolution over the last months we can see the share price moving from $143.67[48] on the 10th of February 2016 to $253.74[49] on the 26th of April 2016. This signifies that the market goodwill value also has a significant variation over the last months in line with the share price evolution. At any given point in time, the ceiling value could be underestimated or overestimated, depending on investors preferences.

Another point depicted by the table is that cost-based results are, in general, lower than market-based or income-based results. As covered in the academic research literature section, cost-based methodologies can sometimes, but not always, provide a brand valuation floor.

Finally, it is important to mention that methodologies in which assumptions do not play a relevant role, i.e. cost-based approaches, have a lower disparity than the ones where they play a key role in estimating Tesla Motors, Inc.'s brand equity value. Given that the case study company is at a growth stage, many assumptions had to b taken due to the lack of accurate sources of information.

[48] From yahoo!
[49] From yahoo!

F. Further recommendations

Goal definition should be the first step when valuing brands. Given the intangible and subjective essence of these intangible assets, having clear objectives enhances output reliability and efficiency. Brand value requirements and methods used are not the same when valuing for operational purposes than when valuing for financial transactions, i.e. mergers or acquisitions.

The following step is defining the approach to be used. A sufficiently exhaustive company business model study should be made to ensure that the adequate methodologies are applied. A recurring statement throughout the research project is that no precise and universal valuation methodology exists. For example, not all start-up and growth stage companies can be valued by means of a Historical cost method since their lifecycle is too short for meaningful brand value driving variables to significantly appear in the resulting value. If they do, the resulting noise captured through the sensibilities table can generate negative brand values or big distortions.

Variability in brand values obtained is common and very dependent on the assumptions made. Using a carefully selected and previously planned valuation method permits to smooth results obtained. It is recommended then to explore different benchmarks and input variables to cover for short-term cycles and unexpected movements. Shifts in the fundamental data that should be introduced in the valuation model can output significantly over or under valued estimates.

Finally, a feedback process is a must, this is a procedure that should always be done indistinguishably of the results obtained or one's confidence in the method used. Revision should occur even if results are in line with expectations. Still, well thought procedures and correctly inputted variables should reassure one of the resulting values obtained.

Appendices

Appendix 1 - Tesla Motors, Inc. balance sheet - accounting view

($m n except per share data)	2013 FY	2014 FY	2015 FY
BALANCE SHEET			
ASSETS			
Current Assets			
Cash and Cash Equivalents	846	1.906	1.197
Restricted Cash	3	18	23
Accounts Receivables, net	49	227	169
Inventory	340	954	1.278
Prepaid Expenses and other current assets	28	95	125
Total Current Assets	**1.266**	**3199**	**2.792**
Operating lease vehicles, net	382	767	1.791
Property, plant and equipment, net	739	1.829	3.403
Restricted Cash	6	11	31
Other Assets	24	43	75
Total Assets	**2.417**	**5.849**	**8.092**
LIABILITIES			
Current Liabilities			
Accounts Payable and Accrued Liabilities	412	1.047	1.339
Accounts payable	*304*	*778*	*950*
Accrued liabilities	*108*	*269*	*389*
Deferred revenue	273	484	1.007
Capital lease obligations, current portion	21	22	33
Reservation Payments	163	258	283
Total Current Liabilities	**869**	**1.810**	**2.662**
Long-term debt	586	2.408	2.641
Other long-term liabilities	295	661	1659
Total liabilities	**1.750**	**4.879**	**6.962**
Non-controlling interest			
SHAREHOLDERS' EQUITY			
Total stockholders' equity	**667**	**9.670**	**1.131**
Total liabilities and SE	**2.417**	**5.849**	**8.092**

Table 80 - Tesla Motors, Inc. Balance sheet - accounting view

Appendix 2 - Tesla Motors, Inc. Barclays forecasts

Balance sheet

($m n except per share data)	2016 FYE	2017 FYE	2018 FYE	2019 FYE	2020 FYE
BALANCE SHEET					
ASSETS					
Current Assets					
Cash and Cash Equivalents	1.278	(320)	283	(304)	355
Restricted Cash	23	23	23	23	23
Accounts Receivables, net	225	419	288	706	941
Inventory	1.542	2.664	2.972	4.318	7.252
Prepaid Expenses and other current assets	140	140	155	224	373
Total Current Assets	**3.208**	**2.926**	**3.721**	**4.967**	**8.944**
Operating lease vehicles, net	3.295	4.461	5.445	6.472	8.447
Property, plant and equipment, net	4.628	5.435	5.966	6.619	7.278
Restricted Cash	32	32	32	32	32
Other Assets	75	75	75	75	75
Total Assets	**11.237**	**12.927**	**15.239**	**18.164**	**24.776**
LIABILITIES					
Current Liabilities					
Accounts Payable and Accrued Liabilities	2.107	1.513	2.510	3.284	6.370
Accounts payable	*1.456*	*947*	*1.724*	*2.122*	*4.286*
Accrued liabilities	*651*	*566*	*787*	*1.162*	*2.084*
Deferred revenue	2.991	4.589	5.921	7.267	9.829
Capital lease obligations, current portion	33	33	33	33	33
Reservation Payments	358	542	822	1.392	2.088
Total Current Liabilities	**5.489**	**6.677**	**9.286**	**11.976**	**18.319**
Long-term debt	2.641	2.641	2.641	3.021	3.021
Other long-term liabilities	1.659	1.659	1.659	1.659	1.659
Total liabilities	**9.789**	**10.976**	**13.586**	**16.656**	**22.999**
Non-controlling interest					
SHAREHOLDERS' EQUITY					
Total stockholders' equity	**1.448**	**1.951**	**1.653**	**1.508**	**1.777**
Total liabilities and SE	**11.237**	**12.927**	**15.239**	**18.164**	**24.776**

Table 81 - Tesla Motors, Inc. forecasted balance sheet - accounting view

Income statement

($m n except per share data)	2016 FYE	2017 FYE	2018 FYE	2019 FYE	2020 FYE
INCOME STATEMENT (PRO FORMA REVENUES)					
Total Revenues	**7.596**	**7.839**	**8.603**	**12.094**	**20.042**
% Growth - YoY	43.5%	3.2%	9.8%	40.6%	65.7%
Stock based compensation	17,2	17,8	17,8	18,9	20,8
Cost of Revenue (incl. stock based comp):	5.871	5.864	6.515	9.376	15.611
Total Cost of Revenue (ex stock based comp)	5.854	5.846	6.497	9.357	15.590
Gross Profit (loss) (Non-GAAP)	**1.741**	**1.993**	**2.106**	**2.737**	**4.452**
Operating expenses					
Research and development	631	980	989	1.149	1.603
Selling, general and administrative	1.112	1.003	989	1.330	1.844
Stock based compensation	164	170	170	180	198
Total Operating Expenses	1.907	2.153	2.148	2.660	3.645
Operating Income / (Loss)	**(183)**	**(178)**	**(60)**	**59**	**786**
Adjusted EBIT	**(1)**	**10**	**127**	**258**	**1.005**
Adjusted EBITDA	**673**	**1.398**	**1.747**	**2.024**	**2.951**
Interest income	1	1	1	1	1
Interest expense	(48)	(48)	(48)	(57)	(58)
Other (expense) income, net	(48)	(24)	(12)	(6)	(3)
Income (loss) before income taxes	(277)	(248)	(118)	(3)	727
Change in fair value of warrant liabilities	-	-	-	-	-
PF Income (Loss) before income taxes	(96)	(61)	69	197	945
Provision for income taxes (Non GAAP)	5	(25)	(14)	(0)	131
Net Income - non-GAAP revs, with stock expense	**(285)**	**(223)**	**(104)**	**(2)**	**596**
PF non-GAAP Net Income	(100)	(36)	83	197	814
Net income (loss) per share attributable to stockholders	(2,19)	(1,63)	(0,75)	(0,01)	4,17
PF non-GAAP EPS - diluted	(0,77)	(0,26)	0,60	1,40	5,70
Weighted average number of diluted shares	130	137	139	141	143
Weighted average number of common shares	130	137	139	141	143

Table 82 - Tesla Motors, Inc. forecasted income statement - accounting view

Appendix 3 - Tesla Motors, Inc. Annual report - dividend policy

Dividend policy:

"We have never declared or paid dividends on our common stock. We currently do not anticipate paying cash dividends in the foreseeable future. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors may deem relevant." From Annual Report 2015

Appendix 4 - Royalty contracts from RoyaltySource

Royalty contracts

Type of contract	Licensee	Licensor	Low range	High range	Average	Restricted territory	Licensed property
Trademark: Industrial & Commercial	Renault Samsung Motors	Samsung Card	0,80%	0,80%	0,80%	South Korea	Korean conglomerate licenses the name Samsung to another South Korean company making cars. The parties recently met to renew a cooperation contract for another 10 years. The contract, originally due to expire in 2010, allows the licensee to use the Samsung brand name on vehicles produced in South Korea.
Trademark: Automobile Related (Parts)	Carroll Shelby Licensing INC	Carroll Shelby Trust	10%	15%	12,50%	N/A	The Company's subsidiary amended the license agreement between it and the Licensor(Trust) to provide for, among other matters, a grant in perpetuity of exclusive rights to Licensor's intellectual properties in connection with all automotive products and related merchandise.
	Shelby Automobiles INC	Carroll Shelby Licensing INC	5%	10%	7,50%	N/A	The Company's principal shareholder was responsible for the creation of the trademarks, trade names and trade dress now licensed through Licensor and is subject to its licensing agreements. Originally, Licensor entered into a non-exclusive licensing agreement for use of the trademarks with Autos, its sister company.
	Ducati Motor Holding SPA	Ducati Corse SRL	5%	5%	5,00%	N/A	The Italian Company entered into a license agreement pursuant to which the Italian Licensor, a related party, grants to the Company the right to use (i) the "Ducati Corse" trademark on the Ducati Corse replica bikes manufactured by the Company and (ii) the Ducati Corse racing activities images in promotional materials.
	Various	Ford Motor Co	7%	7%	7,00%	N/A	Ford Motor Co.'s three-pronged Trademark Licensing Program for consumer products using Ford designs. Ford is not seeking to ban any items, but is asking producers to apply for licensing. Producers must submit parts for review and certification. When Ford has blessed the design, materials and construction, products must carry an Official Licensed Product logo.
	IJI Acquisition Corp	International Jensen INC	1%	5%	3,00%	Worldwide	Licensor hereby grants to Licensee, a related party, the exclusive right to use the Trademarks in the countries where Licensor has registered rights for the Trademarks (and in those countries where Licensor subsequently acquires registered rights for the Trademarks) for Speaker Equipment sold to Vehicular original equipment manufacturers through the OEM Business (OEM Speaker Equipment).
Trademark: Automobile Brand Extension Related (manufacturer)	Corgi International LTD	Automobile Association Limited	7%	7%	7,00%	Worldwide	The Licensor granted the Licensee the worldwide license to create a scale reproduction of certain vehicles; Collector AA Renault Traffic & AA Trackside Releases.
	Corgi International LTD	Born Free Foundation	3,50%	3,50%	3,50%	N/A	The Licensor granted the UK Licensee a license to create a scale reproduction of certain vehicles: Born Free Land Rover Defender (VA09706).The Licensee designs, produces, markets and distributes a broad product line of innovative, high-quality licensed and non-licensed pop culture collectibles, gifts and toys, ranging from high-end movie and television prop replicas to lower price point gifts and toys.
	ERTL, Revell and Bburago	Chrysler Corp	5%	5%	5,00%	N/A	Licensor lends the scale-model makers the blueprints to its exotic two-seater car, Dodge Viper.
	Various	Ferrari	2%	3%	2,50%	N/A	Licensing transactions of unknown date between an Italian auto manufacturer and model car companies to license to the Ferrari name and logo (trademark).
		Average Parts	5,6%	8,4%	7,0%		
		Average Manufacturer	4,4%	4,6%	4,5%		
		Average Total	**4,6%**	**6,1%**	**5,4%**		

Source: Royalty Source

Appendix 5 - Nissan Leaf Selling General and Administrative expenses details

	2015	
Sales (Yen m)	11.375.207	*From Annual Report*
Exchange rate (Yen/$)	110	*From UBS broker Report as of April 5 2016*
Total Sales (USD m)	**103.599**	
Leaf Units Sold	200.000	*From Annual Report*
Leaf Price ($)	37.620	*From Nissan Website*
Leaf Sales (USD m)	**7.524**	
Leaf % of total sales	**7,3%**	

Table 83 - Nissan Leaf Selling General and Administrative expenses (% of total sales)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Sales (Y bn)	11.375	12.130	11.670	11.750	11.950	12.170	12.394	12.622	12.855	13.091	13.332
% Growth	8,51%	6,6%	(3,8)%	0,7%	1,7%	1,8%	1,8%	1,8%	1,8%	1,8%	1,8%
SGA expenses (Y bn)	1.348	1.438	1.383	1.393	1.416	1.442	1.469	1.496	1.523	1.551	1.580
% of Sales	11,9%	11,9%	11,9%	11,9%	11,9%	11,9%	11,9%	11,9%	11,9%	11,9%	11,9%
Exchange Rate (USD/Yen)	110	120	110	110	110	110	110	110	110	110	110
SGA expenses (USD m)	**12.278**	**11.970**	**12.573**	**12.659**	**12.875**	**13.112**	**13.353**	**13.599**	**13.849**	**14.104**	**14.364**
SGA attributable to Nissan Leaf (USD m)	**892**	**869**	**913**	**919**	**935**	**952**	**970**	**988**	**1.006**	**1.024**	**1.043**

Table 84 - Nissan Leaf Selling General and Administrative expenses from UBS report and own estimates

Appendix 6 - Tesla Model 3 target gross margin

Source: Company reports, Barclays Research

- **Timing, volumes:** Tesla has guided to initial deliveries in late 2017, with 2020 total company (i.e. including S/X) deliveries of 500k units. We do not expect the initial deliveries to occur until 2018 (see above), nor do we expect the company to meet its 2020 delivery guidance of 500k units (we forecast only 331k units – consisting of 248k Model 3, 37k S and 47k X).

- **The unveiling will have working prototypes:** The unveil is expected to feature working prototypes (as was the case for the Model X unveil), which will provide all 800 people in attendance with a test ride – with four people per test drive, we'd assume Tesla will have 10-20 vehicles on hand. Moreover, it's worth noting that in its most recent 10-K Tesla highlighted that completion of the Model 3 Alpha Prototype and Beta Prototype (two of the performance milestones for Elon Musk's stock option grant) were both considered probable of achievement.

- **Gross margins in the range of 20-25%:** Compared to Model S/X target gross margin of 30%, the Model 3 gross margin is expected to be 20-25% (Tesla has previously cited "category leading gross margin").

- **There will likely be a crossover variant:** Just as the Model X is the crossover variant of the Model S, Tesla has previously mentioned that it will have a crossover variant to the Model 3 (which Elon Musk once tweeted out would be the Model Y). Tesla may provide

Figure 6 - Tesla Model 3 target gross margin from Barclays Equity Research

Appendix 7 - Porsche brand value at the time of the acquisition

The reported brand names mainly relate to Porsche (€13,823 million), Scania Vehicles and Services (€1,134 million), MAN Commercial Vehicles (€1,145 million), MAN Power Engineering (€470 million) and Ducati (€404 million).

€18,871 million of the goodwill recognized as of December 31, 2012 relates to Porsche, €3,260 million (previous year: €3,139 million) to Scania Vehicles and Services, €708 million (previous year: €505 million) to MAN Commercial Vehicles, €290 million to Ducati, €257 million (previous year: €254 million) to MAN Power Engineering, €161 million (previous year: €157 million) to ŠKODA and €152 million (previous year: €153 million) to Porsche Holding Salzburg. €176 million (previous year: €98 million) of the remaining amount relates to the Passenger Cars and Light Commercial Vehicles segment, €46 million (previous year: €15 million) to the Financial Services segment and €13 million (previous year: €13 million) to unallocated areas. The recoverability test for recognized goodwill is based on value in use and is not affected by a variation in the growth forecast or in the discount rate of +/–0.5 percentage points.

Of the total research and development costs incurred in 2012, €2,615 million (previous year: €1,666 million) met the criteria for capitalization under IFRSs.

Figura 7 - Porsche brand value at the time of being acquired by Volkswagen, from Volkswagen Annual Report 2012

Further details regarding Volkswagen - Porsche transaction can be found in Mergermarket.

Appendix 8 - Tesla historical and forecasted units sold from Barclays Equity Research report

Historical and forecast Tesla deliveries by model

Units	2012	2013	2014	2015	2016	2017	2018	2019	2020
Roadster	327	0	0	0	0	0	0	0	0
% growth	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Model S	2.663	22.442	31.655	50.446	53.000	49.290	43.375	39.905	36.713
% growth		743%	41%	59%	5%	(7)%	(12)%	(8)%	(8)%
Model X				212	20.700	31.050	40.365	44.402	46.622
% growth				n.a.	9664%	50%	30%	10%	5%
Model 3						0	15.000	82.500	247.500
% growth						n.a.	n.a.	450%	200%
Total	**2.990**	**22.449**	**31.655**	**50.659**	**73.797**	**80.340**	**98.740**	**166.807**	**330.835**

Price ($)	Model 3	Model S	Model X
Base price	35.000	75.000	80.000
Average	46.000	90.000	100.000
Fully loaded price	70.000	144.500	150.000

To compute Tesla average price we will use the sales distribution as of 2020, which will be more representative in the long-term.

	Units	Average
Model S	36.713	90.000
Model X	46.622	100.000
Model 3	247.500	46.000
Total	330.835	**58.493**

Table 85 - Tesla historical and forecasted units sold as well as average price

Bibliography

Tesla Motors, Inc. Website

https://www.teslamotors.com/

Nissan Motor Website

http://www.nissanusa.com/electric-cars/leaf/

Tesla Motors, Inc. (from 2010 to 2015)

Form 10-K or Annual Reports

Volkswagen AG (2012)

Annual Report

Ford Motor (2015)

Annual Report

Nissan Motor (2015)

Annual Report

Brand Finance® (March 2016)

http://brandirectory.com/profile/tesla-motors

Barclays Equity Research (March 30th, 2016)

Tesla Motors, Inc.

J.P. Morgan North America Equity Research (February 11th, 2016)

Tesla Motors, Inc.

Morningstar Equity Research (February 11th, 2016)

Tesla Motors, Inc.

J.P. Morgan North America Equity Research (March 23rd, 2016)

Ford Motor

UBS Global Research (April 5th, 2016)

Nissan Motor (7201)

BNP Paribas Japan (22 March, 2016)

Nissan Motor (7201 JP)

Morgan Stanley Research (24 February, 2016)
Ford Motor Company

MarketLine Industry Profile (December 2015)
Hybrid & Electric Cars in the United States (Reference Code: 0072-2815)

MarketLine Industry Profile (December 2015)
Hybrid & Electric Cars in Europe (Reference Code: 0201-2815)

MarketLine Industry Profile (December 2015)
Hybrid & Electric Cars in China (Reference Code: 0099-2815)

Damodaran website
http://pages.stern.nyu.edu/~adamodar/

Global Data report (April 2015)
Tesla Motors, Inc. (TSLA) - Financial and Strategic SWOT Analysis Review

Reuters
http://www.reuters.com/

Bloomberg
http://www.bloomberg.com/

RoyaltySource database
http://www.royaltysource.com/

Financial Times Markets Data
http://www.ft.com/research/markets

ThomsonOne

Mergermarket
http://www.mergermarket.com/info/

Yahoo! Finance
http://finance.yahoo.com/

World Bank database
http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

Salinas, G. (2009)
"The international Brand Valuation Manual"

Salinas, G. and Ambler, T. (2009)
"A taxonomy of brand valuation practice: Methodologies and purposes"

Reyneke, J., Abratt, R. and Bick, G. (2014)
"What is your corporate brand worth? A guide to brand valuation approaches"

Singh Gill, M. and Dawra, J. (2010)
"Evaluating Aaker's sources of brand equity and the mediating role of brand image"

Anson, W., Noble, D. and Samala J. (2014)
"IP Valuation: What Methods Are Used to Value Intellectual Property and Intangible Assets?"

A. Seetharaman, Zainal Azlan Bin Mohd Nadzir and S. Gunalan (2001)
"A conceptual study on brand valuation", Journal of Product & Brand Management, Vol. 10 Iss 4 pp. 243 - 256

Marc Schauten, Rudolf Stegink and Gijs de Graaff (2010)
"The discount rate for discounted cash flow valuations of intangible assets", Managerial Finance, Vol. 36 Iss 9 pp. 799 - 811

Virvilaitè, R. and Jucaitytè, I. (2008)
"Brand Valuation: Viewpoint of Customer and Company"

Damodaran, A. (2014)
"Tesla: Anatomy of a Run-up - Value Creation or Investor Sentiment?"

Fernández, P. (2002)
"Valuation of brands and intellectual capital"

Abratt, R. and Bick, G.
"Valuing Brands and Brand Equity: Method and Processes"

Kapferer, J. N.
"The new strategic brand management"

González Londoño, Y., Zuluaga Carmona, M., Maya Ochoa, C (2012)
"Enfoque de opciones reales para la valoración financiera de marcas"

Parr, R. , Smith, G. (2005)
"Intellectual Property – Valuation, Exploitation, and Infringement Damages"

Lampere, L. (2014)
"How to value brands properly"

Other - Articles

https://www.millwardbrown.com/brandz/top-global-brands/2014/methodology
http://www.freeswotanalysis.com/automobile/652-tesla-swot-analysis.html
http://www.fool.com/investing/general/2015/05/13/swot-analysis-of-tesla-stock.aspx
http://www.forbes.com/sites/greatspeculations/2016/01/04/should-tesla-be-worried-of-competition/#6b9f31c63415
http://www.bloomberg.com/news/articles/2010-06-29/tesla-motors-raises-226-million-in-first-ipo-of-u-s-carmaker-in-54-years