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WHY AREN'T BRAND NAMES RECOGNIZED AS INTANGIBLE ASSETS IN THE FINANCIAL STATEMENTS? A STUDY OF THE SUBJECTIVITY OF BRAND VALUATION

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Abstract

The goal of this paper is to determine and to quantify how subjective brand valuation is. To do so, we review the different valuation methods and apply the Hirose model to a sample of 20 US companies from the technology sector. Even if the results vary in function of the rankings we choose as a comparison, we may identify the trend that brands are usually overvalued in those rankings. It explains why internally generated goodwill (which includes brand names) is not recognized as an intangible asset in the financial statements.

Introduction

Back then, the primary and secondary sectors were the most developed ones in the economy. However, nowadays, those sectors tend to decrease because most of the value comes from the tertiary sector. In addition to the growth of the services sector, we can also see the importance of the added value by looking at the biggest market values (Apple, Google, etc.), where most of the value is intangible.

During the 90's, the creation of the Internet was a real turning point in our economy. Hundreds of e-companies were created, with IPO's always higher and higher. Some companies were highly valued whereas the business plan was not even solid. Investors were just blinded by the Internet revolution and it led to the burst of the Dot-com bubble with a huge slump of the NASDAQ. More recently, the takeover of WhatsApp by Facebook, or their offer of three billions dollar to buy Snapchat gives us information about how much investors value the intangible. Snapchat doesn't generate any revenues but it's still valuable for investors. The company is hence mostly composed by intangible assets.

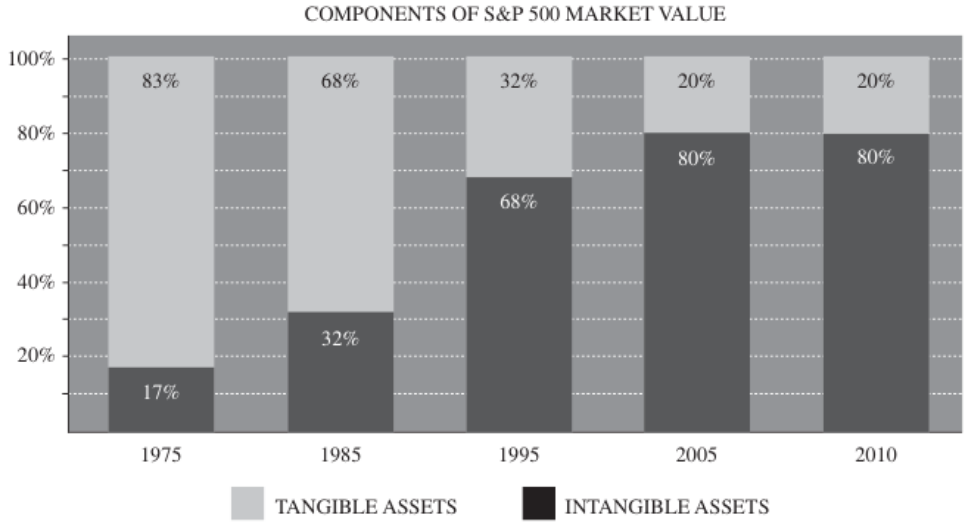

Fig. 1 from Sinclair, Keller, 2014

Throughout this paper, I would like therefore to focus on the goodwill, because it plays a key role as it takes into account all the unidentifiable aspects of a company that can be really valuable. One of those more specific aspects is the brand value, which is one of the most important and interesting one. Apple current brand value amounts to $124.2 billions, which represents more than 15% of its total market capitalization.

The goal of this study is to try to determine if brand valuation is well subjective or not and to quantify it. To do so, we will first review some literature about brand valuation methods and we will also try to fully understand the goodwill and its relation with the international standards. Then, we will apply Hirose's method to a sample of 20 US companies from the technology sector and we will discuss the results to conclude this paper.

Literature review

Brand valuation is a quite recent topic. It only started in the 80's, when the first valuation of a brand was made by *Interbrand*, an organization specialized in valuing brands (Seetharaman, Zainal Azlan Bin Mohd Nadzir, Gunalan, 2001). In the current economic environment, the competition is getting fiercer every day, that's why it's important to bet on its brand to make the difference, as each brand is completely unique. It is thus a key advantage for a company and therefore knowing what is its brand worth can influence the strategy of an organization (Howe, Sackley, Spencer, Mautz, Freed, 2013).

1. What's a brand?

A brand is an asset without a physical substance which value can only be determined precisely in case of an acquisition (Seetharaman, Zainal Azlan Bin Mohd Nadzir, Gunalan, 2001). However, some concepts associated with the brand are trickier and deserve some explanation. We call *brand equity* all the activities linked to branding investments (Seetharaman, Zainal Azlan Bin Mohd Nadzir, Gunalan, 2001). This notion refers to an asset, whereas *brand value* refers more to the financial value of the brand (Duguleana, Duguleana, 2014).

2. How to value a brand?

The process of valuation is composed of three steps. First of all, one must realize a legal analysis to be perfectly aware of the legal rights of the brand, the legal owner and jurisdiction. Secondly, one must process to a behavioural analysis of the brand strength, that is to say to determine to what extent the brand is responsible for generating cash. Finally, a financial analysis is divided in three different approaches (Duguleana, Duguleana, 2014) :

2.1. Market approach

This approach measures the value of assets similar to the ones valued. The purpose is to establish the value of the brand by looking at different comparable brands. This could be problematic though due to the uniqueness of each brand.

2.2. Cost approach

This second approach measures the cost of building the brand, its replacement or its reproduction. The drawback of this method is that each brand is unique so it's hard to assess its reproduction cost and what's more, by looking at the costs, we're focused on the past and don't take the future into account.

2.3. Income approach

With this approach, we measure the value of the brand by computing the present value of the economic benefits expected to be received over the remaining useful economic life of the brand. It's considered to be the best approach even if it's sometimes difficult to apply because of the various ways to determine the cash flows.

The brand valuation company *Interbrand* has developed a practical method based on the income approach. They start by computing the overall financial return by deducting the charge for the capital use in obtaining the brand (manufacturing capacities, employees and distribution channel) from the economic profit after-tax. Then, they calculate the base of valuation model by forecasting the value of company's revenues and profits for a five-year horizon. After, they multiply the Role of Brand Index (RBI), which represents the proportion of the brand choice influence in forming the demand, by the economic profit of the branded products or services to obtain the volume of earnings due to the brand influence. The final step is to discount the branded earnings by a discount rate to find the present value of the

brand value. In order to find that discount rate, *Interbrand* estimates a relationship (called the S-curve) between the brand strength of comparable brands and their P/E ratio (which would be comparable to the ratio between the brand value and the brand earnings). The brand strength is computed according to seven different factors, each one of them worth a certain amount of points, in total adding up to 100. For instance, one factor is the stability of the brand, evaluated on a score of 15, according to some criteria such as the customer loyalty. The brand strength determines thus the risk profile of the brand. For example, a brand with a maximum brand strength score of 100 will be discounted at the risk free rate. It has been proven that the discount rate corresponds to the inverse of the multiplier given by the S-curve (Salinas, 2009).

2.4. Royalty relief method

Finally, this last method is based on the fact that the brand value is equivalent to the present value of the future royalties payments the company has saved by owning the brand. In other words, the brand value is equivalent to the discounted sum of futures fees the company would have had to pay if it didn't own the brand (Roberts, 2011). This is the method used by the company *Brand Finance*, specialized in brand valuation. They start by computing the brand strength by using a balance scorecard of brand-relevant attributes. Then, they review comparable licensing agreement in order to determine a royalty rate range of the sector. By applying the brand strength to the royalty rate range, they can determine the brand royalty rate. After that, they estimate by benchmarking the proportion of revenues attributable to the brand and they forecast it based on historic data and other indicators. Finally, they obtain the royalty charge by applying the royalty rate to the forecasted revenue and they discount it to find the final brand value[1].

In conclusion, the literature agrees on the fact that the cost and the market approaches are less precise and wouldn't be sufficient on their own to value a brand. Therefore, we will use the income approach in this paper as it stands out as the most accurate method.

[1] Brandfinance (n.a.). *Explanation of the methodology*, http://brandirectory.com/methodology (retrieved on April 5, 2015).

3. International Standards

In addition to meeting the International Organization for Standardization (ISO) 10668 called « Brand Valuation », people dealing with brand valuation must also take into account two others standards: IAS 38 « Intangible Assets » and IFRS 3 « Business Combinations ». Brands are indeed intangible assets (they don't have a physical substance) and their useful lifetime is usually indefinite. In order to know if the brand can be recognized as an asset or not, it depends then of the nature of the brand: is it internally generated or is it purchased? In the first case, the standard IAS 38 doesn't recognize it as an asset. However, in the second case, the brand comes from an acquisition and is therefore considered as an asset. The standard IFRS 3 applies thus in this case.

Nonetheless, Sinclair and Keller have identified some contradictions in the standards. IFRS 3, which is about business combinations, states that brands should be recognized as assets, whereas IAS 38 forbids it if the brand has not been bought.
In the case of business acquisitions, it is obviously really important for a company to know what it's buying in order to value it. Therefore, we will now focus more on the goodwill, as it involves the brand of the company in a broader way.

4. Goodwill (IFRS 3)[2]

As said above, according to the standard IAS 38, the goodwill is considered as an intangible asset by a company only when it results of a business combination, that is to say when an entity (the acquirer) acquire at least another one (the acquiree) on an acquisition date. It is thus recognized only when there is a change of ownership, which may seem paradoxical in the case of a listed company where the ownership changes a bit every day.

As a reminder, the goodwill represents an "excess value", sort of forecast of future economic benefits born from a business combination (Schevin, 2005). An accurate value of goodwill is though difficult to evaluate. Indeed, it takes into account unidentifiable assets (like the brand name, the customers etc.) but also the fact that there will be positive synergies thanks to the

[2] European Commission (2011). *International Financial Reporting Standard 3 – Business Combinations.* http://ec.europa.eu/internal_market/accounting/docs/consolidated/ifrs3_en.pdf (retrieved on March 10, 2014).

combination. Moreover, the goodwill can also reflect an overvaluation of the acquiree's consideration or also merely an overpayment (or underpayment) by the acquirer[3].

According to IFRS 3, the goodwill is computed as the difference between; a) the sum of the consideration transferred evaluated at the acquisition-date fair value, the amount of minority interests (if there are some) and, if the acquirer had already an equity interest in the acquiree, the fair value of the acquirer's previously-held equity interest in the acquired business; and b) the net amount of the identifiable assets and liabilities acquired measured at the acquisition-date fair value. If the difference is negative, the gain is determined as a bargain purchase in profit or loss, after a review from the acquirer of all measurements.

The objective of IFRS 3 is to improve three aspects of the financial statements provided by an entity about business combinations. These aspects are the relevance, the reliability and the concordance of the information. To do so, this standard prohibits an entity from amortizing goodwill. Indeed, it's quite arbitrary to say that each year during 20 years the goodwill has to be depreciated by a fixed amount. It could for instance stay stable for a long time and then be decreased because of a particular event. Amortization doesn't give any relevant information in comparison of a goodwill impairment charge, which can be the signal of a decline in a business. What's more, it could lead to an overvaluation of the goodwill as it was amortized on a long period[4]. Consequently, the information provided now by the entity is more precise, transparent and thus closer to the economic reality. It is also more complete[5].

5. Controversial issues about the goodwill

The goodwill is a really complex accounting tool. It leads to many issues and these troubles are linked to its nature. Because of this complexity, there have been a lot of disagreements over its accounting treatment.

As we said above, the goodwill used to be amortized but it has been prohibited because it could distort the financial information. Indeed, periods in which the goodwill is

[3] Shinhan Financial Group (2012). *Proposal of Alternatives for Goodwill Accounting*. http://www.ifrs.org/The-organisation/Advisory- bodies/EEG/Documents/AP2%20Accounting%20for%20Goodwill.pdf (retrieved on March 11, 2014).
[4] *Ibidem*
[5] Moehrle, S., & Reynolds-Moehrle, J. (2001). *Say good-bye to pooling and goodwill Amortization.* http://www.journalofaccountancy.com/Issues/2001/Sep/SayGoodByeToPoolingAndGoodwillAmortization.htm (retrieved on March 10, 2014).

consumed are really hard to estimate. That's why we proceed to the impairment test. However, this test doesn't take into account the fact that the goodwill is composed of several parts, as said in the previous section. Furthermore, the impairment of goodwill is influenced by the economic fluctuations. The risk of goodwill's impairment can thus be underestimated during economic expansions while it can be overestimated during economic recessions[6]. Therefore the impairment of goodwill may not reflect the economic reality either.

Secondly, the recoverable amount is based on many different assumptions and it's quite difficult to estimate goodwill's fair value. Due to this uncertainty and difficulty we may think that management could cheat with impairment by trying to delay it or even to avoid it[7]. Indeed, as it has become more unusual, a goodwill impairment can be a negative signal for future profitability and thus for the stock market. Just because an entity has a huge goodwill can already be a warning for the stock market (Schevin, 2005).

Finally, another issue of the impairment test is that we can't clearly distinguish the goodwill acquired in a business combination from the internally generated one (Schevin, 2005). In fact, if the value of the acquired goodwill has decreased, it could be hidden by the creation of internal goodwill. For instance, if Coca acquired Pepsi, the goodwill should maybe be depreciated after a few years because of the loss of value of the brand name "Pepsi". However, we could easily imagine that the value of the brand name "Coca" would be higher or also that Coca would benefit from a wider range of customer. Consequently, the value created internally would outweigh the depreciation of the goodwill acquired in the beginning.

6. Brand value as an intangible asset?

For most of the companies studied in this paper, brand names represent highly valuable assets which may be interesting to show in the balance sheet. It is indeed an information which could make the difference in the eyes of the investors and they deserve to know everything about the company. The brand value is indeed a good indicator of the health of the business and the generation of future wealth (Sinclair, Keller, 2014). According to Uzma (2011), it's all about a trade-off between reliable and relevant information. Brand value

[6] Shinhan Financial Group (2012). *Proposal of Alternatives for Goodwill Accounting*. http://www.ifrs.org/The-organisation/Advisory- bodies/EEG/Documents/AP2%20Accounting%20for%20Goodwill.pdf (retrieved on March 11, 2014).
[7] *Ibidem*

is completely relevant but we may doubt of its reliability regarding the promised future income or the way the value was computed (Bhattacharyya, 2012). Consequently, the main problem with brands is that they don't meet the pure definition of intangible asset.[8] As it is all about the reliability of the determination of the brand value, in the next sections we're going to try to prove that brand names are subjective through the use of the Hirose model.

Data

In order to determine the brand value of a sample of companies from only a financial point of view, I couldn't apply the *Interbrand* method and decided then to apply the Hirose model (see description in the next section).

First of all, I chose a small sample of 20 companies in the technology industry, because I think these are the companies which brands can be the most likely overvalued. Then, all the data come from the financial reports of each company, between 2009 and 2013 (five year horizon). In order to compute the total brand value, I used the 10 years US Government risk free rate of 1,96%. Finally, to compare the value I find with the actual value of the brand, I retrieved different brand valuation rankings, such as *Interbrand*, *BrandZ* and *Brand Finance* which are companies specialized in brand valuation, and a ranking from *The Forbes* in 2014. All the data can be found in Appendix 2.

Methodology

The income approach to brand valuation is actually a general approach which can be derived in dozens of more accurate models. Two of the most famous ones are the *Interbrand* method and *Hirose's model* (Wu, 2009). The *Interbrand* model implying some marketing factors such as the brand strength depending on consumers' opinion, it was not suitable in the case of this finance paper and I therefore chose *Hirose*'s model. What's more, Wu determined through his paper that the Hirose model is more objective than the *Interbrand* one as the latter takes into account market factors which can influence the brand value subjectively.

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[8] Universidad Nacional De Colombia (n.a.). *Intangible Assets : Perspective and* Issues. http://www.fce.unal.edu.co/ (retrieved on May 3, 2015).

The Hirose approach assumes the brand value is influenced by three different factors: the price advantage known as prestige driver (PD), the customer loyalty known as loyalty driver (LD), and the brand expansion power known as expansion driver (ED) (Salinas, 2009).

First of all, the Prestige Driver is calculated as the average excess profit ratio during the past five years multiplied by the brand attribution rate and the actual cost of sales. In practice, we have to determine the sales (*S*) and cost of sales (*C*) of the brand for the past five years (2009 to 2013 in our sample) and divide the first by the latter to get the ratio of sales to cost of goods sold. Then, the method demands to do the same for a similar company (denoted by « * » in the formula) in order to determine the price advantage. Afterwards, the brand attribution rate is computed by dividing the advertising expenses (*A*) by the total operating expenses (*OE*).

The Prestige Driver can be expressed as follows (Salinas, 2009):

$$PD = \frac{1}{5}\sum_{i=-4}^{0}\left\{\left(\frac{S_i}{C_i} - \frac{S_i^*}{C_i^*}\right) * \frac{A_i}{OE_i}\right\} * C_0$$

Regarding the choice of the benchmark company, I chose companies from the same industry according to the NASDAQ classification or to the list of competitors identified by Bloomberg.

Secondly, the Loyalty Driver is computed as one minus the volatility coefficient of cost of sales, i.e. the 5-year standard deviation of cost of sales (σ_c) divided by the 5-year average cost of sales (μ_c). This states that the sales figure is supposed to stay stable if customers are loyal. A stable figure means indeed a small standard deviation and hence a Loyalty Driver close to one.

It can be expressed as follows:

$$LD = \frac{\mu_c - \sigma_c}{\mu_c} = 1 - \frac{\sigma_c}{\mu_c}$$

Thirdly, in order to compute the Expansion Driver, Hirose's model computes the average between the average annual growth rate of overseas sales (*SO*) for the past two years

and the average growth rate of sales in the non-core segments of the company (*SX*) for the past two years as well. The sales in the non-core segments are determined by subtracting the product's sales which are the biggest from the total sales.
The Expansion Driver can be expressed as follows:

$$ED = \frac{1}{2}\left\{\frac{1}{2}\sum_{i=-1}^{0}\left(\frac{SO_i - SO_{i-1}}{SO_{i-1}} + 1\right) + \frac{1}{2}\sum_{i=-1}^{0}\left(\frac{SX_i - SX_{i-1}}{SX_{i-1}} + 1\right)\right\}$$

Finally, the total brand value is computed by multiplying the three drivers and dividing them by the risk free rate.

However, even though this method is widely used, it has been criticized on different points in the literature (Salinas, 2009).
First of all, in the computation of the prestige driver, if the company happens not to have a price advantage, it would mean the brand has no value. However, the absence of price advantage doesn't necessarily mean the brand is worthless. What's more, in order to evaluate the proportion of costs generated by the brand, this methodology divides the sales by the cost of sales. Nevertheless, it is possible that the brand generates more costs than its contribution to the profit. Regarding the advertising costs ratio, it can be really different in function of the sector (generally small for B2B firms for instance).
Secondly, as far as the loyalty driver is concerned, there is no scientific proof of the link between stability of cost of sales and customer loyalty.
Finally, concerning the expansion driver, the only way growth is taken into account is in historical data, which may not be the most suitable approach to assess future growth opportunities that could be valuable for the brand.

Through the application of the Hirose model, I could also notice some drawbacks of this approach that are not mentioned in the literature review. First, the value of the prestige driver is, in my opinion, highly subjective because of the choice of the benchmark company. The method demands that we choose a company with the smallest revenue/cost of sales ratio but it is quite a difficult task to realize based only on publicly available data. Therefore, it induces subjectivity in the determination of the brand value. Secondly, this approach is really

past-oriented. Although it takes into account expansion factors such as overseas sales growth and non-core business segments sales growth, it never estimates the future sales or takes into consideration some macro-economic factors which may have a future influence on the brand value. Finally, some companies don't disclose complete information regarding their promotion and advertising expenses and simply include them in Selling, General and Administrative Expenses. This means thus that the brand attribution rate might be higher than it really is and may thus lead to an overvaluation of the brand value.

Results

The results of the application of the Hirose model can be interpreted in different ways according to the ranking we choose as a comparison. Please refer to Appendix 1 and 3 for a detailed computation of the results.

First of all, regarding the *Interband* ranking of 2014, only four companies (eBay, IBM, Intel and Xerox) out of thirteen show a higher brand value according to the Hirose model. It suggests that the brand values are overvalued in the *Interbrand* ranking in 69% of the cases.

Secondly, regarding the *Forbes* ranking of 2014, seven companies out of twelve (58%) show a higher brand value than the one computed with the Hirose approach. The five companies demonstrating a lower brand value in the *Forbes* are Dell, eBay, Google, IBM and Intel.

Thirdly, regarding the *BrandZ* ranking of 2014, only two companies (eBay and Intel) show a higher brand value in the Hirose valuation. This means that the brand values are overvalued in the *BrandZ* ranking in 88% of the cases.

Finally, the *Brand Finance* ranking is the most interesting one as it is the only one showing a brand value for the sample of the 20 companies. The results show that thirteen companies out of the 20 (65%) have a lower brand value according to Hirose's model.

In order to try to draw more general conclusions, I decided to compare the values obtained by the Hirose approach with an average brand value of the four different rankings.

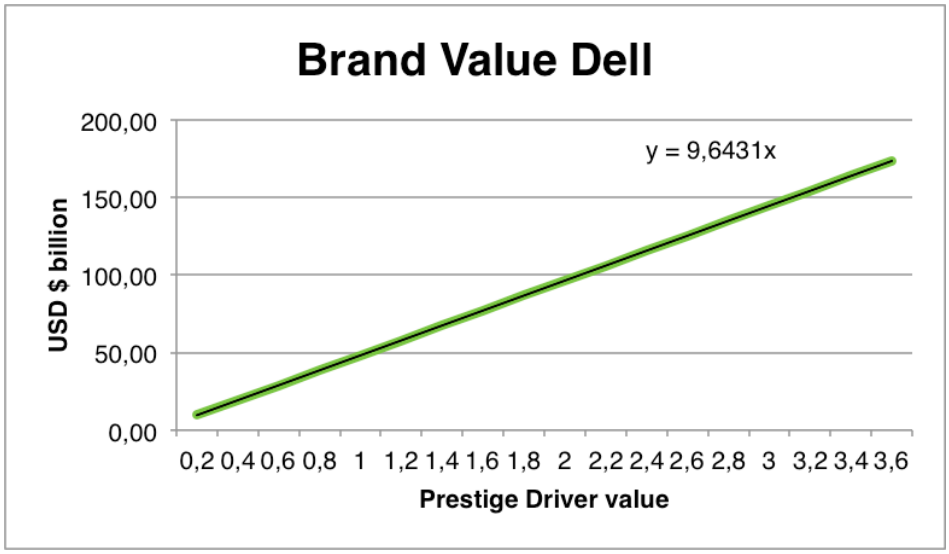
With this comparison, still fifteen companies out of 20 (75%) have higher brand values than in the Hirose model. Some brands have values only 1.08 times higher, like Adobe, whereas others are 104.26 times higher like LinkedIn. If we exclude the extreme values of LinkedIn and Oracle (32.48 times higher), the brand values are 5.13 times higher on average than the Hirose values (while they are 3.68 times higher on average in the *Brand Finance* ranking than in the Hirose model, excluding also LinkedIn and Oracle ratio of 30.8 and 28.72 respectively). After that, I decided to exclude extreme values amongst the four different rankings when possible in order to avoid having a biased average value. The results are similar with still the same fifteen companies showing higher brand values than Hirose's ones.

If we compare now the results given by the comparison with the *Brand Finance* ranking and the average brand values, in both cases they determine that the same brands are overvalued according to those rankings, with the exception of two brands (Apple and Adobe). However, the differences are relatively small. In Adobe's case, the value obtained with Hirose model is 4.12 billion USD, compared to 3.52 according to *Brand Finance* and 4.43 for the average brand value. Regarding Apple's case, the value obtained with Hirose model is 108.08 billion USD, compared to 104.68 according to *Brand Finance* and 123.91 for the average brand value. This difference is a bit more important but as three out of the four rankings demonstrate a higher value than 108.08 for Apple's brand value, I would tend to conclude that there's a trend showing its value is too high. What's more, by adding up the square of the difference for each ranking between Hirose's value and the rankings' value for the whole sample and dividing it by the number of companies in the sample (some rankings don't have value for the 20 companies), I find that the smallest sum of square is the one of the *Brand Finance* ranking. Assuming the value I computed with Hirose's model is right, *Brand Finance* provides the closest values and I would then trust this ranking. Therefore, it would emphasize the fact that Apple's brand value is overvalued in the other rankings.

Also, we can look more in details a few brands with abnormal values, in particular Amazon, eBay, Facebook, HP, Intel, Xerox and Oracle. The common point between those companies is that the value computed according to the Hirose model is completely different of the values amongst the four rankings. While the extreme value for Xerox may be explained by the fact that I had to use, due to a lack of information, the Selling, General and Administrative Expenses instead of the advertising expenses which lead to a high brand attribution rate, the

explanation for the other companies remains unclear. We may think the cause would be a high brand attribution rate for eBay and Intel or a small Prestige Driver for Amazon, Facebook, HP and Oracle. Although it seems to be difficult to influence the brand attribution rate in our computations, the value of the Prestige Driver is quite subjective, as we said in the previous section regarding the choice of the benchmark company.

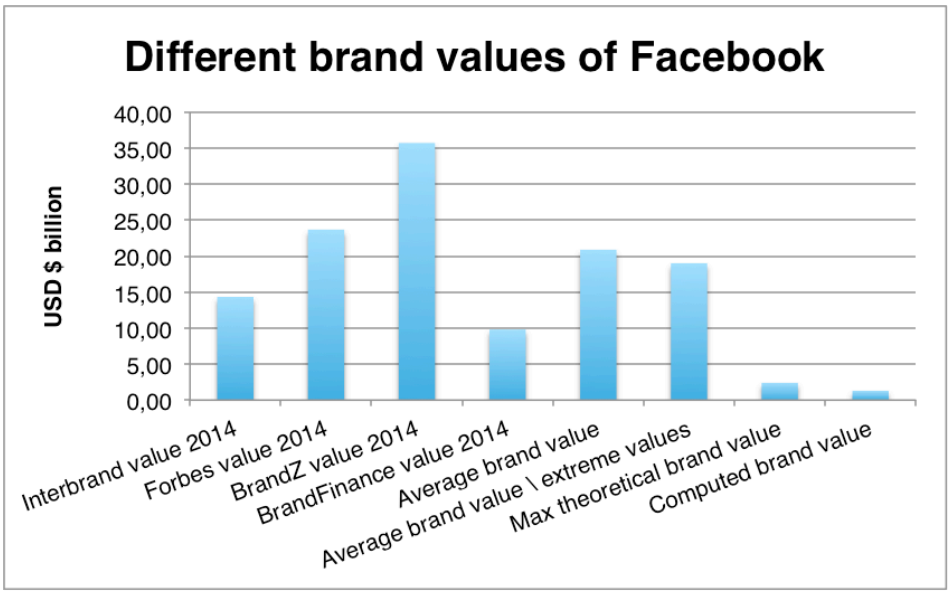
In order to investigate deeper the role that the Prestige Driver value can play in the total brand value, I undertook two kinds of analysis. First of all, a short sensitivity analysis to get a quick overview of the range of values the brand could take allows us to see that the brand value increases really fast with a small increase of PD. For instance, if we look at Dell, each time PD increases of 0.2, the total brand value increases of 9.64 billion USD.



Secondly, to go deeper in the analysis, I decided to compute what could be the maximum theoretical brand value for each company. To do so, I needed to calculate the maximum value of the Prestige Driver. Therefore, I assumed the benchmark companies had a profit ratio equal to zero and I obtained the maximum value of PD. The point of this analysis is that we can now notice that for Facebook, LinkedIn, Oracle, Twitter and Yahoo, the theoretical maximum brand value is way smaller than the value in certain rankings. With the exception of Oracle,

for all the other brands cited before, *BrandZ* is the ranking attributing the highest brand values whereas the theoretical ones are smaller.

The example of Facebook:



It is interesting to note that this is the case in particular for Facebook, LinkedIn and Twitter. This leads us to think that mostly the recent social networks are overvalued and investors should revise their expectations about companies in that specific sector.

Conclusion

This paper has reviewed the different methods of brand valuation (market, cost or income approach) and focused especially on the income approach. After explaining shortly some more specific approaches as the Royalty Relief method, the *Interbrand* or *Brand Finance* ones, we decided to use the Hirose model as it is the one chosen by the literature and we applied it to a sample of 20 US companies from the technology sector. Although the results vary according to the rankings we refer to, we can draw the conclusion that brands tend to be overvalued in those rankings in comparison to their true value. This validates our hypothesis about the subjectivity of brand values and confirms us why they are not reported as intangible assets in the financial statements.

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Appendices

1. General summary of the different brand values

$ USD billions	Interbrand value 2014	Forbes value 2014	BrandZ value 2014	BrandFinance value 2014	Average brand value	Average brand value excluding extreme values	Brand value (Hirose)	Max theoretical brand value
Apple	118,86	124,20	147,88	104,68	123,91	121,53	108,08	453,32
Amazon	29,48	21,40	64,26	45,15	40,07	37,31	5,63	76,84
Cisco	30,94	28,00	13,71	20,78	23,36	24,39	9,29	31,94
Dell	0	5,80	0	8,30	7,05	7,05	10,58	249,90
eBay	14,36	9,10	15,59	13,38	13,11	13,87	73,25	114,05
Facebook	14,35	23,70	35,74	9,82	20,90	19,02	1,29	2,40
Google	107,44	56,60	158,84	68,62	97,88	88,03	68,11	237,03
HP	23,76	14,20	19,47	19,82	19,31	19,65	3,90	42,89
Adobe	5,33	0	0	3,52	4,43	4,43	4,12	6,55
IBM	72,24	47,90	105,54	41,51	66,80	60,07	80,46	217,57
Intel	34,15	28,00	11,67	22,94	24,19	19,83	151,02	277,48
Microsoft	61,15	63,00	90,19	62,78	69,28	62,89	39,17	157,21
Netflix	0	0	0	3,18	3,18	3,18	0,78	15,75
LinkedIn	0	0	12,41	2,15	7,28	7,28	0,07	0,10
Xerox	6,64	0	0	4,10	5,37	5,37	109,46	163,68
Oracle	25,98	25,80	20,91	20,64	23,33	23,36	0,72	5,55
AT&T	0	0	77,88	45,41	61,65	61,65	20,09	81,99
Verizon	0	0	63,46	53,47	58,46	58,46	20,22	74,77
Twitter	0	0	13,84	1,53	7,69	7,69	0,51	3,46
Yahoo	0	0	14,17	5,30	9,73	9,73	1,79	3,89

*0 if data non available

2. Raw data from the financial statements

All the results are presented in billions of USD.

2.1. Adobe

	2009	2010	2011	2012	2013
Profit ratio	9,93	9,42	9,63	9,10	6,91
Sales	2,946	3,800	4,216	4,404	4,055
Cost of sales	0,297	0,404	0,438	0,484	0,587
Profit ratio (benchmark company: Broadvision)	4,09	3,43	2,92	3,02	3,22
Sales	0,031	0,022	0,018	0,015	0,016
Cost of sales	0,008	0,006	0,006	0,005	0,005
Brand attribution rate	0,03	0,03	0,03	0,04	0,03
Promotion & Advertising Expenses	0,067	0,066	0,075	0,099	0,089
Total Operating Expenses	1,959	2,403	2,679	2,740	3,046
Overseas sales			2,172	2,207	1,921
Sales of non-core business segments			1,146	1,302	1,429

2.2. Amazon

	2009	2010	2011	2012	2013
Profit ratio	1,29	1,29	1,29	1,33	1,37
Sales	24,509	34,204	48,077	61,093	74,452
Cost of sales	18,978	26,561	37,288	45,971	54,181
Profit ratio (benchmark company: Overstock.com)	1,23	1,21	1,20	1,22	1,23
Sales	0,877	1,090	1,054	1,099	1,304
Cost of sales	0,712	0,900	0,875	0,901	1,057
Brand attribution rate	0,03	0,03	0,03	0,03	0,03
Promotion & Advertising Expenses	0,593	0,89	1,4	2	2,4
Total Operating Expenses	23,38	32,798	47,215	60,417	73,707
Overseas sales			21,372	26,28	29,935
Sales of non-core business segments			19,365	22,465	25,65

2.3. Apple

	2009	2010	2011	2012	2013
Profit ratio	1,67	1,65	1,68	1,78	1,60
Sales	42,905	65,225	108,249	156,508	170,91
Cost of sales	25,683	39,541	64,431	87,846	106,606
Profit ratio (benchmark company: Sony)	1,26	1,29	1,30	1,26	1,27
Sales	7,11	6,293	6,304	5,526	5,691
Cost of sales	5,66	4,892	4,831	4,386	4,485
Brand attribution rate	0,09	0,10	0,09	0,07	0,07
Promotion & Advertising Expenses	0,501	0,691	0,933	1	1,1
Total Operating Expenses	5,482	7,229	10,028	13,421	15,305
Overseas sales			69,934	98,996	108,171
Sales of non-core business segments			61,192	77,816	79,631

2.4. AT&T

	2009	2010	2011	2012	2013
Profit ratio	2,419	2,373	2,308	2,307	2,502
Sales	122,513	124,28	126,723	127,434	128,752
Cost of sales	50,639	52,379	54,904	55,228	51,464
Profit ratio (benchmark company: Sprint)	1,96	1,86	1,77	1,70	1,73
Sales	32,26	32,563	33,679	35,345	16,891
Cost of sales	16,435	17,492	19,015	20,841	9,777
Brand attribution rate	0,027	0,028	0,027	0,025	0,033
Promotion & Advertising Expenses	2,787	2,982	3,135	2,91	3,268
Total Operating Expenses	101,513	104,707	117,505	114,437	98,273
Overseas sales			0	0	0
Sales of non-core business segments			63,508	60,671	58,853

2.5. Cisco

	2009	2010	2011	2012	2013
Profit ratio	2,77	2,78	2,59	2,58	2,54
Sales	36,117	40,04	43,218	46,061	48,607
Cost of sales	13,023	14,397	16,682	17,852	19,167
Profit ratio (benchmark company: Interphase)	1,92	2,02	1,92	1,80	1,68
Sales	0,026	0,018	0,022	0,014	0,016
Cost of sales	0,013	0,009	0,011	0,008	0,009
Brand attribution rate	0,01	0,02	0,02	0,01	0,01
Promotion & Advertising Expenses	0,165	0,29	0,325	0,218	0,218
Total Operating Expenses	15,772	16,479	18,862	18,144	18,244
Overseas sales			20,103	19,56	19,968
Sales of non-core business segments			8,692	9,735	10,578

2.6. Dell

	2009	2010	2011	2012	2013
Profit ratio	1,22	1,21	1,23	1,29	1,27
Sales	61,101	52,902	61,494	62,071	56,94
Cost of sales	50,144	43,641	50,098	48,26	44,754
Profit ratio (benchmark company: Supermicro)	1,21	1,19	1,19	1,19	1,16
Sales	0,506	0,721	0,943	1,014	1,163
Cost of sales	0,417	0,606	0,791	0,848	1,003
Brand attribution rate	0,10	0,09	0,09	0,09	0,09
Promotion & Advertising Expenses	0,811	0,619	0,73	0,86	0,833
Total Operating Expenses	7,767	7,089	7,963	9,38	9,174
Overseas sales			29,582	31,667	28,709
Sales of non-core business segments			11,492	12,165	12,196

2.7. eBay

	2009	2010	2011	2012	2013
Profit ratio	3,52	3,57	3,37	3,34	3,19
Sales	8,727	9,156	11,652	14,072	16,047
Cost of sales	2,480	2,565	3,460	4,216	5,036
Profit ratio (benchmark company: Overstock.com)	1,23	1,21	1,20	1,22	1,23
Sales	0,877	1,090	1,054	1,099	1,304
Cost of sales	0,712	0,900	0,875	0,901	1,057
Brand attribution rate	0,17	0,18	0,17	0,16	0,13
Promotion & Advertising Expenses	0,800	0,808	0,977	1,1	1
Total Operating Expenses	4,791	4,538	5,818	6,968	7,640
Overseas sales			6,168	7,294	8,335
Sales of non-core business segments			1,638	2,02	2,29

2.8. Facebook

	2009	2010	2011	2012	2013
Profit ratio	3,48	4,00	4,32	3,73	4,20
Sales	0,777	1,974	3,711	5,089	7,872
Cost of sales	0,223	0,493	0,86	1,364	1,875
Profit ratio (benchmark company: Synacor)	1,78	1,80	1,87	1,83	1,88
Sales	0,061	0,066	0,091	0,122	0,112
Cost of sales	0,034	0,037	0,049	0,067	0,060
Brand attribution rate	0,01	0,01	0,01	0,01	0,02
Promotion & Advertising Expenses	0,005	0,008	0,028	0,067	0,117
Total Operating Expenses	0,515	0,942	1,955	4,551	5,068
Overseas sales			1,644	2,511	4,259
Sales of non-core business segments			0,557	0,81	0,886

2.9. Google

	2009	2010	2011	2012	2013
Profit ratio	2,67	2,81	2,87	2,43	2,31
Sales	23,651	29,321	37,905	50,175	59,825
Cost of sales	8,844	10,417	13,188	20,634	25,858
Profit ratio (benchmark company: Synacor)	1,78	1,80	1,87	1,83	1,88
Sales	0,061	0,066	0,091	0,122	0,112
Cost of sales	0,034	0,037	0,049	0,067	0,060
Brand attribution rate	0,05	0,09	0,12	0,14	0,14
Promotion & Advertising Expenses	0,353	0,772	1,544	2,332	2,848
Total Operating Expenses	6,495	8,523	12,975	16,781	20,001
Overseas sales			20,345	26,673	33,057
Sales of non-core business segments			0	4,136	4,443

2.10. HP

	2009	2010	2011	2012	2013
Profit ratio	1,31	1,32	1,31	1,30	1,30
Sales	114,552	126,033	127,245	120,357	112,298
Cost of sales	87,489	95,582	97,418	92,385	86,38
Profit ratio (benchmark company: Supermicro)	1,21	1,19	1,19	1,19	1,16
Sales	0,506	0,721	0,943	1,014	1,163
Cost of sales	0,417	0,606	0,791	0,848	1,003
Brand attribution rate	0,01	0,01	0,01	0,01	0,01
Promotion & Advertising Expenses	0,7	1	1,2	1	0,878
Total Operating Expenses	104,416	114,554	117,568	131,414	105,167
Overseas sales			83,134	78,217	72,014
Sales of non-core business segments			61,415	60,145	56,373

2.11. IBM

	2009	2010	2011	2012	2013
Profit ratio	1,84	1,85	1,88	1,93	1,95
Sales	95,758	99,87	106,916	104,507	99,751
Cost of sales	51,973	53,857	56,778	54,209	51,246
Profit ratio (benchmark company: Supermicro)	1,21	1,19	1,19	1,20	1,16
Sales	0,506	0,721	0,943	1,014	1,163
Cost of sales	0,417	0,606	0,791	0,848	1,003
Brand attribution rate	0,05	0,05	0,05	0,05	0,04
Promotion & Advertising Expenses	1,255	1,337	1,373	1,339	1,294
Total Operating Expenses	25,647	26,291	29,135	28,396	28,981
Overseas sales			59,225	57,712	54,551
Sales of non-core business segments			66,037	64,271	61,2

2.12. Intel

	2009	2010	2011	2012	2013
Profit ratio	2,26	2,88	2,67	2,64	2,49
Sales	35,127	43,623	53,999	53,341	52,708
Cost of sales	15,566	15,132	20,242	20,19	21,187
Profit ratio (benchmark company: Supermicro)	1,21	1,19	1,19	1,20	1,16
Sales	0,506	0,721	0,943	1,014	1,163
Cost of sales	0,417	0,606	0,791	0,848	1,003
Brand attribution rate	0,10	0,14	0,13	0,11	0,10
Promotion & Advertising Expenses	1,4	1,8	2,1	2	1,9
Total Operating Expenses	13,85	12,903	16,28	18,513	19,23
Overseas sales			44,994	44,993	43,617
Sales of non-core business segments			18,375	18,837	19,669

2.13. LinkedIn

	2009	2010	2011	2012	2013
Profit ratio	4,65	5,42	6,41	7,75	7,53
Sales	0,120	0,243	0,522	0,972	1,529
Cost of sales	0,026	0,045	0,081	0,126	0,203
Profit ratio (benchmark company: Synacor)	1,79	1,78	1,86	1,82	1,87
Sales	0,061	0,066	0,091	0,122	0,112
Cost of sales	0,034	0,037	0,049	0,067	0,060
Brand attribution rate	0,001	0,003	0,005	0,004	0,003
Promotion & Advertising Expenses	0,0001	0,0007	0,0024	0,0036	0,0039
Total Operating Expenses	0,123	0,224	0,496	0,915	1,481
Overseas sales			0,140	0,287	0,477
Sales of non-core business segments			0,261	0,449	0,669

2.14. Microsoft

	2009	2010	2011	2012	2013
Profit ratio	4,81	5,04	4,49	4,18	3,84
Sales	58,437	62,484	69,943	73,273	77,849
Cost of sales	12,155	12,395	15,577	17,53	20,249
Profit ratio (benchmark company: Broadvision)	3,88	3,67	3,00	3,00	3,20
Sales	0,031	0,022	0,018	0,015	0,016
Cost of sales	0,008	0,006	0,006	0,005	0,005
Brand attribution rate	0,04	0,04	0,04	0,03	0,05
Promotion & Advertising Expenses	1,4	1,6	1,9	1,6	2,6
Total Operating Expenses	38,074	38,386	42,782	51,96	51,085
Overseas sales			31,935	34,877	36,505
Sales of non-core business segments			51,128	54,429	59,169

2.15. Netflix

	2009	2010	2011	2012	2013
Profit ratio	1,55	1,59	1,57	1,37	1,42
Sales	1,670	2,163	3,205	3,609	4,375
Cost of sales	1,079	1,357	2,040	2,626	3,083
Profit ratio (benchmark company: HHGregg)	1,45	1,44	1,43	1,41	1,41
Sales	1,397	1,534	2,078	2,493	2,475
Cost of sales	0,962	1,067	1,448	1,773	1,757
Brand attribution rate	0,12	0,11	0,11	0,11	0,11
Promotion & Advertising Expenses	0,175	0,212	0,299	0,377	0,438
Total Operating Expenses	1,478	1,879	2,829	3,559	4,146
Overseas sales			0,083	0,004	0,007
Sales of non-core business segments				1,424	1,623

2.16. Oracle

	2009	2010	2011	2012	2013
Profit ratio	2,465	2,473	2,378	2,477	2,575
Sales	23,252	26,82	35,622	37,121	37,18
Cost of sales	9,432	10,844	14,977	14,985	14,441
Profit ratio (benchmark company: Bridgeline Digital)	2,27	2,10	2,02	2,23	2,12
Sales	0,024	0,024	0,026	0,026	0,025
Cost of sales	0,011	0,011	0,013	0,012	0,012
Brand attribution rate	0,005	0,004	0,004	0,003	0,004
Promotion & Advertising Expenses	0,071	0,075	0,088	0,079	0,085
Total Operating Expenses	14,931	17,758	23,589	23,415	22,496
Overseas sales			17,27	17,885	17,461
Sales of non-core business segments			11,591	11,005	9,717

2.17. Twitter

	2009	2010	2011	2012	2013
Profit ratio		0,66	1,72	2,46	2,49
Sales		0,028	0,106	0,317	0,665
Cost of sales		0,043	0,062	0,129	0,267
Profit ratio (benchmark company: Synacor)	1,79	1,78	1,86	1,82	1,87
Sales	0,061	0,066	0,091	0,122	0,112
Cost of sales	0,034	0,037	0,049	0,067	0,060
Brand attribution rate		0,07	0,11	0,22	0,24
Promotion & Advertising Expenses		0,006	0,026	0,087	0,316
Total Operating Expenses		0,096	0,234	0,394	1,301
Overseas sales			0,004	0,053	0,173
Sales of non-core business segments			0,029	0,048	0,070

2.18. Verizon

	2009	2010	2011	2012	2013
Profit ratio	2,418	2,414	2,417	2,503	2,686
Sales	107,808	106,565	110,875	115,846	120,55
Cost of sales	44,579	44,149	45,875	46,275	44,887
Profit ratio (benchmark company: Sprint)	1,96	1,86	1,77	1,70	1,73
Sales	32,26	32,563	33,679	35,345	16,891
Cost of sales	16,435	17,492	19,015	20,841	9,777
Brand attribution rate	0,033	0,027	0,026	0,023	0,028
Promotion & Advertising Expenses	3,02	2,451	2,523	2,381	2,438
Total Operating Expenses	91,83	91,92	97,995	102,686	88,582
Overseas sales			0	0	0
Sales of non-core business segments			40,721	39,978	39,527

2.19. Xerox

	2009	2010	2011	2012	2013
Profit ratio	3,45	4,56	4,66	5,73	5,93
Sales	15,179	21,633	21,9	21,737	21,435
Cost of sales	4,395	4,741	4,697	3,791	3,616
Profit ratio (benchmark company: Lexmark)	1,51	1,57	1,60	1,59	1,65
Sales	3,880	4,200	4,173	3,798	3,668
Cost of sales	2,563	2,678	2,609	2,396	2,224
Brand attribution rate	0,29	0,22	0,21	0,21	0,21
Promotion & Advertising Expenses	4,149	4,594	4,421	4,216	4,137
Total Operating Expenses	14,552	20,818	21,061	20,405	20,123
Overseas sales			7,647	7,237	6,901
Sales of non-core business segments			11,063	10,209	9,576

2.20. Yahoo

	2009	2010	2011	2012	2013
Profit ratio	2,25	2,41	3,14	3,08	3,47
Sales	6,460	6,325	4,984	4,987	4,680
Cost of sales	2,872	2,628	1,587	1,621	1,349
Profit ratio (benchmark company: AOL)	1,71	1,70	1,39	1,38	1,36
Sales	3,246	2,417	2,202	2,192	2,320
Cost of sales	1,893	1,421	1,584	1,587	1,706
Brand attribution rate	0,03	0,04	0,04	0,02	0,03
Promotion & Advertising Expenses	0,197	0,237	0,148	0,103	0,128
Total Operating Expenses	6,074	5,552	4,184	4,420	4,090
Overseas sales			1,871	1,692	1,363
Sales of non-core business segments			2,824	2,844	2,731

3. Computation of the brand value according to Hirose model

USD $ billion	Apple	Amazon	Cisco	Dell	eBay
Prestige Driver (PD)	**3,63**	**0,15**	**0,21**	**0,22**	**1,77**
Loyalty Driver (LD)	**0,49**	**0,61**	**0,85**	**0,94**	**0,69**
Volatility coefficient of cost of sales	0,51	0,39	0,15	0,06	0,31
5-year average cost of sales	64,82	36,60	16,22	47,38	3,55
5-year standard deviation of cost of sales	33,34	14,22	2,51	3,03	1,09
Expansion Driver (ED)	**1,20**	**1,17**	**1,05**	**1,01**	**1,17**
Av. Annual growth rate of overseas sales	1,25	1,18	1,00	0,99	1,16
Av. Annual growth rate of non-core segment sales	1,15	1,15	1,10	1,03	1,18
Risk free rate	1,96%	1,96%	1,96%	1,96%	1,96%
Brand value (Hirose)	**108,08**	**5,63**	**9,29**	**10,58**	**73,25**

USD $ billion	Facebook	Google	HP	Adobe	IBM
Prestige Driver (PD)	**0,06**	**2,10**	**0,09**	**0,10**	**1,71**
Loyalty Driver (LD)	**0,31**	**0,54**	**0,95**	**0,76**	**0,96**
Volatility coefficient of cost of sales	0,69	0,46	0,05	0,24	0,04
5-year average cost of sales	0,96	15,79	91,85	0,44	53,61
5-year standard deviation of cost of sales	0,67	7,22	4,85	0,11	2,16
Expansion Driver (ED)	**1,44**	**1,17**	**0,94**	**1,03**	**0,96**
Av. Annual growth rate of overseas sales	1,61	1,28	0,93	0,94	0,96
Av. Annual growth rate of non-core segment sales	1,27	1,07	0,96	1,12	0,96
Risk free rate	1,96%	1,96%	1,96%	1,96%	1,96%
Brand value (Hirose)	**1,29**	**68,11**	**3,90**	**4,12**	**80,46**

USD $ billion	Intel	Microsoft	Netflix	LinkedIn	Xerox
Prestige Driver (PD)	**3,47**	**0,92**	**0,03**	**0,003**	**2,60**
Loyalty Driver (LD)	**0,84**	**0,78**	**0,59**	**0,26**	**0,88**
Volatility coefficient of cost of sales	0,16	0,22	0,41	0,74	0,12
5-year average cost of sales	18,46	15,58	2,04	0,10	4,25
5-year standard deviation of cost of sales	2,87	3,45	0,84	0,07	0,52
Expansion Driver (ED)	**1,01**	**1,07**	**1,03**	**1,73**	**0,94**
Av. Annual growth rate of overseas sales	0,98	1,07	0,92	1,86	0,95
Av. Annual growth rate of non-core segment sales	1,03	1,08	1,14	1,60	0,93
Risk free rate	1,96%	1,96%	1,96%	1,96%	1,96%
Brand value (Hirose)	151,02	39,17	0,78	0,07	109,46

USD $ billion	Oracle	AT&T	Verizon	Twitter	Yahoo
Prestige Driver (PD)	**0,02**	**0,85**	**0,82**	**0,01**	**0,06**
Loyalty Driver (LD)	**0,80**	**0,96**	**0,98**	**0,19**	**0,66**
Volatility coefficient of cost of sales	0,20	0,04	0,02	0,81	0,34
5-year average cost of sales	12,94	52,92	45,15	0,13	2,01
5-year standard deviation of cost of sales	2,61	2,05	0,89	0,10	0,69
Expansion Driver (ED)	**0,96**	**0,48**	**0,49**	**4,84**	**0,92**
Av. Annual growth rate of overseas sales	1,01	0,00	0,00	8,11	0,85
Av. Annual growth rate of non-core segment sales	0,92	0,96	0,99	1,57	0,98
Risk free rate	1,96%	1,96%	1,96%	1,96%	1,96%
Brand value (Hirose)	**0,72**	**20,09**	**20,22**	**0,51**	**1,79**