VALUATION: comparative analysis between the main characteristics of customer-centric models and called Network Effect and Customer-Based Evaluation

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SUMMARY

The customer portfolio and the guiding relationship considered as relevant variables when seeking to know the real value of companies. In this sense, the objective of this research was to identify the main theoretical similarities or those that stand out the most in the company valuation or valuation models called Network Effect and Client Based Corporate Assessment. With a predominantly bibliographic methodology, it concluded that the relationships between customers and companies are variables that underpin their value, in addition to that external variables such as the company's relationships with suppliers also affect, and that the value of transactions directly affects the value from the company. Thus, sales of higher benefit or of constant frequency positively influence the company's value. The similarities between the two models are limited to these and each follows its own characteristics, in this direction, no many intersections between the models studied and the reality that does not invalidate them in the proposal to evaluate economic entities.

Keywords: Valuation of Companies. Customers. Network Effect. Customer Based Corporate Assessment.

1. INTRODUCTION

It is possible to recognize how challenging today's business finance mission is to evaluate companies or valuation. It also recognized that it is a necessary action, especially when the decision is to assign value to an economic entity when there is an expectation of trading it through, for example, a purchase and sale transaction.

Market actions for acquisitions, mergers, divisions, incorporations and corporate restructuring have been frequent and, in this context, Schnorrenberger et al. (2015) emphasize that, for these operations to occur, it is necessary to define the fair value of these transactions.

Mergers, divisions and acquisitions play an important role in reallocating resources and organizational strategies. Furthermore, in these economic transactions

there are actors focused on business and each one with their expertise, such as lawyers, accountants, consultants, engineers, investment institutions, etc. (COPELAND; KOLLER; MURRIN, 2002).

Contemporary companies do not have the same economic, legal and equity structure as companies a few years ago. This is natural, after all everything evolves. In this sense, the traditional valuation models are likewise not the same, for example, it is understood that the following valuation methods no longer meet contemporary market requirements: book value; adjusted book value; free cash flow; economic profit, etc.

In this challenge, the understanding of Costa, Costa and Alvim (2011) stands out when they express that, however good the model used, it cannot be guaranteed that the value obtained is the fair value, as the company's valuation depends on the reading expectations and for this reason, this area of study and application cannot be considered an exact science.

In the gap previously expressed, that is, in the limitations of traditional valuation models in the face of the challenges of the contemporary company, the model called the Network Effect and the Client Based Assessment flourished. The Network Effects correspond to the impacts exerted by the community of relationships with the company and the value created for each one of them (PARKER; ALSTYNE; CHOUDARY, 2016).

On the other hand, McCarty and Fader (2018) express that executives, marketing managers and accounting professionals are increasingly aware that current and future customer relationships are a valuable asset - if not the most valuable - of a company.

In thisway, theCustomerBased Corporate Assessment (CBCV) ascertainshowthecustomer'sbehavior drives thecompany'srevenueandresultsand, withthis in mind, makes it possibletoknowthecompany'svalue (McCARTHY; FADER , 2020).

While it is possible to recognize that researchers in the areas of marketing and accounting have explored this idea, however their underlying models of customer acquisition and retention do not adequately reflect the empirical realities associated with these behaviors.The associated assessment models do not meet the standards of professionals of finance, a reality that is not present in the CBCV model (McCARTHY; FADER; HARDIE, 2017).

In the problematization mentioned above, the following guiding question for this research arises:

What are the main theoretical similarities of the models when they applied to the valuation of companies and focused on clients called the Network Effect and Client Based Corporate Assessment?

Therefore, the objective of this research is to identify the main theoretical similarities or those that stand out the most in the models of company valuation or valuation and centered on clients called the Network Effect and Client Based Corporate Assessment.

Previous work identified as the article developed in 2020 by McCarthy and Fader published in the Harvard Business Review magazine, February edition, whose objective was to evaluate companies from the client portfolio. Parker, Alstyne and Choudary (2016), when addressing business platforms, explain the Network Effect and the client's participation in the company evaluation process. No work identified comparing the two models previously proposed when evaluating companies, hence the intention to fill this gap in the literature relevant to valuation.

This research is justified, as it expected that this work would contribute to modern understandings about company valuation, when considering customer relations, thus going beyond the traditional valuation models recognized as having limitations, in the modern view, of project management and evaluation.

2 THEORETICAL FRAMEWORK

Initially, it should be noted that any company, regardless of segment or size, can be evaluated and this action, similarly, is generalized to start-up companies or companies with a long existence. Furthermore, no matter how good the model used, it cannot be guaranteed that the value obtained is its fair value, as the valuation of a company depends on reading past, present and future expectations and, for this reason, cannot be considered science exact (COSTA; COSTA; ALVIM, 2011).

2.1 Valuation

Analysts, when carrying out the valuation work, understand that they are facing a process of converting a projection into an estimate of the value of a company or some part of it. However, to evaluate a company is to attribute the present value to the equity mass composed by the heterogeneity of assets, liabilities and equity (PALEPU; HEALY; BERNARD, 2000).

Another approach to the object under study called valuation attributed to Costa, Costa and Alvim (2011), when they understand that the evaluation process should not

base on simple intuition.On knowledge of the market that is necessary for the projection of prices and quantities sold of products, as identically in internal premises such as cost of production, expenses, receipt periods, storage, etc. In addition, similarly, of macroeconomic propositions such as interest rates, inflation, and exchange rates, among others.

With understandings aimed at guiding transactions for the purchase and sale of economic entities, Cornell (1993, p.7) says, "the objective of an evaluation is to estimate the fair market value of a company [...]". The author continues, the result of the evaluation is not necessarily the sale price of the project, but it understood as a reference value for operations and negotiations. In an incisive way and in the search for fair trading value, Schnorrenberger et al. (2015) understand that business valuation occurs at different times, all converging on the single objective of defining a fair value for trading.

Still, when seeking the company's value for transacting it, Damodaran (2009) says that this procedure plays a central role, so the parties must establish a fair value for the target company before deciding to accept or reject the proposal. The author points out that there are factors that should be considered, such as the effects of synergy between companies and the value resulting from managerial and operational restructuring, in addition to considering market and profitability expectations.

Evaluating a company is not an easy task, so Assaf Neto et al. (2008) say that the company valuation process requires conceptual coherence and rigor in the formulation of the calculation model.

Martins (2000) adds by expressing that there are three ways of valuing a company in normal circumstances: (i) by the orderly liquidation value, that is, by what the assets valued at the sale price are worth, less the expenses to make that sale as brokerage commission, taxes, transport, etc .; (ii) the amount required to settle the liability with third parties; and (iii) the operating value, which depends on the future economic benefits that the company will be able to generate. In the circumstances pointed out earlier by Martins (2000), analysts must choose the method that best fits their evaluation model and in accordance with the segment of the company to be evaluated (DEMIRAKOS; STRONG; WALKER, 2004).

There are company valuation models that when used simultaneously will not present the same result, thus Cunha and Lapena (2007) conclude that, regardless of the models used, the value will not be exactly accurate, but rather an approximation of the

market value. In this follow-up, Fernandez (2001) finally has five most frequent groups, operationalized in the evaluation of companies, these shown in Chart 1:

Table 1. CompanyEvaluationGroups

BALANCE SHEET	INCOME STATEMENT	GOODWILL	DISCOUNTED CASH FLOW	VALUE CREATION
Book value	Multiples	Classic	Discounted Cash Flow	EVA
v. Cont. Adjusted	v. ofprofits	European Union Simplified	Dividends	Economic Profit
v. settlement	Salemultiples	EuropeanAccounting Experts	Equity Cash flow	Cash ValueAdded
v. ofsubstance	For Ebitda	Indireto	Capital Cash Flow	CFROI
	Other multiplex	Others	APV	

Source: Adaptedfrom Fernandez (2001).

Of the various valuation models highlighted in Table 1, it is possible to show that the one with the greatest use or application in Brazil is the one called Discounted Cash Flow (FDC). This statement based on the research carried out by Mertelanc et al. (2005) which consulted professionals working in the area of merger and acquisition of the main Brazilian investment banks and the highlight regarding the valuation tool was the FCD.Followed by the multiples or relative valuation and, in third place, it was for the models based on equity value calculated and demonstrated by the accounting information system.

The guiding understanding of the FCD model, under the economic view, is that the value of an asset in continuity results from the present value of projected and discounted cash flows at a rate that can reflect the value of money over time and the associated risk to these flows (COSTA; COSTA; ALVIM, 2011).

The adoption of the DCF method is recommended by Stone et al. (2002) when: (i) the company does not pay dividends at the present stage; (ii) although the company may be paying dividends, they do jeopardize the company's financial capacity; (iii) if the cash flow is aligned with the company's profitability; and (iv) the potential investor has the perspective of controlling the company.

It is possible to observe the emergence of models to evaluate companies that can be considered non-traditional, as these focus on the figure of the client as the added value that makes the difference in this process and, in continuity, Gupta and Lehmann (2005) question the a customer or how much are my customers worth? The authors explain that, as interactions with customers extend to more points of contact, measurement requires new tools and that in the networked world customers add value in

other ways, as well as more and more business models developed so that customer participation based on collective knowledge considered a business asset and represents a competitive advantage.

In this context and different from the traditional models of company valuation, the contemporary business world recognizes the existence of the Network Effect present in contemporary businesses such as those existing in Uber, Amazon and Airbnb.

2.2 Network Effect

In 2014, professor Damodaran, who teaches finance at New York University, published an article in which he valued the Uber Company at $ 5.9 billion and, to reach that value, adopted the classic model of finance when estimating the size of the market global taxi.The segment potential and the revenue that the company would probably obtain, soon after, used the discounted cash flow and adjusted it to the risk value (PARKER; ALSTYNE; CHOUDARY, 2016).

The calculations of prof. Damodaran challenged by Bill Gurley, one of the investors in Uber and a partner at Benchmark Capital, stating that the professor's data was incomplete.Therefore, the result was underestimated, as he did not consider the Network Effect as well as explained that Uber performs matching service that helps to find passengers and drivers and vice versa. As a result, the waiting time of the passenger decreases in the same proportion as the idle time of the driver also decreases, a fact that allows Uber to lower the value of the races and stimulate the demand, creating a virtuous circle (PARKER; ALSTYNE; CHOUDARY, 2016).

In this context, the network effect emerges, which originated by the impact exerted by the community of users of a platform on the value created for each one of them. In view of this, and because he did not adjust his evaluation model in the light of the concept of the Network Effect, prof. Damodaran admitted the understatement of Uber and responded in a humble and elegant way to the limitation of the reasoning used when the initial / traditional evaluation (PARKER; ALSTYNE; CHOUDARY, 2016).

Buying goods on the Amazon platform, for example, generates suggestions that create value for other participants, who in turn end up buying more items on that platform. An Uber race has a high intrinsic value for the passenger and the driver. As a result, Uber serves both sides of the market, as it is easier for consumers to order races and for the driver to set prices. The repercussion of these effects beyond expectations further increases the company's value for the participants (ALSTYNE; PARKER; CHOUDARY, 2016). In this sequence, the organization must not miss the opportunity

to use these interactions strategically and continuously increase the connection with its users who become loyal customers (MAGALDI; SALIBI NETO, 2018).

Resulting from management, the Network Effect can be positive or negative: (i) positive is when it allows adding value to customers and, as a consequence, competitive advantage; (ii) negative when it reduces the customer's value and inhibits it. Consequently the company's competitiveness (PARKER; ALSTYNE; CHOUDARY, 2016).

Network effects can also be direct and indirect: (i) Direct network effects created by the impact of users on the same side of the market. For example, the effect that consumers have on other consumers and that producers have on other producers; (ii) Indirect network effects are created by the impact of the user on one side of the market on users on the other side. As an example, the effects that consumers have on producers and those that producers have on consumers (PARKER; ALSTYNE; CHOUDARY, 2016).

In the measurement context proposed by this research, it recognized how challenging it is to measure the Network Effect. There are several models, but the one developed by Metcalfe is the most widely accepted. Thus, Metcalfe's Law based on the logic that the value of a network varies according to its size. It is proportional to the number of links and nodes that make it up (ODLYZKO; TILLY, 2005; REED, 1999; BECKSTROM, 2009; STEIN, 2009). Nodes and links are the numbers of actors and connections between them when working in a business network (FEIJÓO et al., 2014).

Research carried out in 2015 by Zhang, Liu and Xu, who published an article at the end of the work, validated Metcalfe's Law using data from Facebook and Tencent. The researchers compared the Metcalfe, Sarnoff, Odlyzko and Reed models and found that Metcalfe's model is the one that best explains the growth in the value of these networks according to their number of users. Once Metcalfe's Law validated, companies would have strong incentives to interconnect regardless of the size of the network (BRISCOE; ODLYZKO; TILLY, 2016).

Metcalfe's Law can summarizeas V x N2 where V is the network value and N is the number of nodes (METCALFE, 2013). Thus, it is exemplified that a network with 700 nodes and links and with transactions between them at an average value of $ 10.00, its result when applying the Metcalfe Law is: $ 10.00 x (700) 2 = $ 4,900 .000.00. Finally, it is reasonable to imagine that the value of a network depends not only on its length, but also on its past values (FEIJÓO et al., 2014).

There is another model that privileges the customer as a major factor in the evaluation of companies. This came about in 2019, when investors made efforts to assign fair value to the company Revolve Group at the time that, for the first time (Initial Public Offering - IPO); this company traded its shares on the New York Stock Exchange.

2.3 Customer Based Assessment

Companies are discussing and disseminating data on the number of customers won and lost, and this has fueled a growing interest in linking the value of customers to the global value of the company. From this angle, client-based corporate assessment been used to describe such efforts (McCARTHY; FADER; HARDIE, 2017).

The American clothing retailer called Revolve participated in June 2019 and the IPO on the New York Stock Exchange, and the challenge at that time was to arrive at a fair valuation of that company. However, the result was a success since it reached 4.5 times its revenue in the last 12 months. This assessment was not the result of chance, but rather the perception of investors of the strength of the company in the relationship with customers, since they keep them for long years, which means profit potential in the long run (McCARTHY; FADER, 2020).

The positive and surprising result of Revolve's evaluation aroused the need for moves aimed at evaluating companies towards customer-oriented methodologies. In this sequence, McCarthy and Fader (2020) say that the metric used in the evaluation of the company Revolve is a process called Corporate Customer Based Assessment (CBCV).

The Client-Based Corporate Assessment is driving changes in the traditional assessment that favors "growth at all costs" for revenue durability, a fact that allows greater precision, responsibility and diagnostic value (McCARTHY; FADER, 2020).

It should be noted that the CBCV methodology of evaluating companies is committed to today's company with a predictable revenue stream and an active customer base, which makes it possible to provide correct data on customers, thus avoiding non-significant indicators as they seem (McCARTHY; FADER, 2020).

CBCV's premisefocused on how it contributes to the company's revenue, so CBCV uses as a basis the data from traditional financial statements added to two other factors: (i) a model of customer behavior or customer base model; and (ii) the customer data that it will insert in the model (McCARTHY; FADER, 2020).

The customer data, which will insert in the model, will include the following interconnected sub-models, which seek to predict the behavior of each customer of a

certain company.Through this angle McCarthy and Fader (2020) externalize: (1) customer acquisition model, the which provides for the entry of new customers; (2) customer retention model, which predicts how long customers will remain active; (3) purchase model, which anticipates how often customers will do business with the company; (4) the basket size model, which predicts how much customers spend per purchase.

Bringing these models together allows you to understand the actions and behaviors of customers in a given company, when they will make the new purchase, how much they will spend over time and, with this, it is possible to forecast revenue, thus estimating the value of the company will be much closer to reality (McCARTHY; FADER, 2020).

Although, it recognize that the model is universal, that is, for each type of company, it emphasized that the specifics of the business model of each company should considere when applying. In view of this, McCarthy and Fader (2020) say that while the methodology may seem intimidating, it is relatively simple to implement and can be improved and extended to any business segment.

It appears that a practical example adapted from the work of McCarthy and Fader (2020) can better explain the model: it imagined that one is in front of a company that sells meal kits and is in rapid growth. In the first four months, the company generated the following revenues: $ 1,000, $ 2,500, $ 4,500 and $ 7,000. What piques curiosityiswhat it means for future revenueand, therefore, for the future ofthe business.

In the previous context, that active customers pay a fixed amount of $ 100 per month for meal kits delivered throughout the month and that the company has won 10, 20, 30 and 40 customers in the first four months of operation totaling 100 customers. However, half of those conquered gave up in the first month and all those who did not leave in the first month remained.

To forecast the revenue for the fifth month, it will be necessary to predict how much will come to the company from the retained customers' revenue, thus, out of the 100 customers won in the first four months.In month 5 there is half, that is, 50 customers and the value of revenue for the old ones will be 50 x $ 100 = $ 5,000.00.

The next step will be to predict the revenue that will come from winning new customers, while maintaining the trend to win 50 new customers, which will represent $ 5,000.00 in revenue (50 x $ 100). Adding the two forecasts, you will have $ 10,000 of monthly revenue. In a broad sense, McCarthy and Fader (2020) say that, with the

CBCV approach, revenue figures no longer emerge from the vacuum and result from a set of behavioral factors, which in the example are: (i) total customers won; (ii) customer retention dynamics; and (iii) average revenue per customer.

The model has limitations such as: (i) for several reasons, companies are reluctant to disclose the metrics of their client portfolio; (ii) there is no consensus on which customer metrics have greater information power and how they should be calculated and disclosed, finally; (iii) there is little manifestation by regulators on the issue. Especially in relation to the last item, McCarthy and Fader (2020, p.33) express that "unfortunately, less is more for executives when it comes to disclosure. They fear that information and additional information, no matter how aggregated the numbers may be, could put them at a competitive disadvantage". The research sequence will evolve towards the disciplining foundation through methodological aspects.

3 METHODOLOGY

In order to identify possible theoretical similarities between two modern models of company valuation, which privilege the company's relationship with its client portfolio, a research method was sought that, according to the general objectives, would enable familiarity with the proposed object and with planning based on greater flexibility when considering the most varied aspects related to the studied phenomenon. This type of research in the understanding of Gil (2010) called Exploratory.

As for the research design, although it is possible to understand that many elements that not considered exhaustive, it appears that we are dealing with research classified as bibliographic since, according to Gil (2010), it is prepared based on material already published. Such as scientific articles, dissertations, thesis etc.

It also observes Gil's warning (2010), when he says that one of the advantages of bibliographic research lies in the fact that it allows the researcher to cover a range of phenomena much wider than that which he could research directly, although this may compromise the research quality.

To mitigate the previously mentioned limitation, Gil (2010) also explains that this is possible when conducting research that makes it possible to compare understandings such as those proposed in this work when seeking to identify possible and main theoretical similarities existing in the assessment models of companies called Effect of Networks and Client-Based Corporate Assessment.

4 ANALYSIS OF RESULTS

The research evolves in order to identify the possible and main existing theoretical similarities, without intending to exhaust them, in the evaluation models of companies called the Network Effect and the Client Based Corporate Evaluation.

4.1 Main characteristics of the company valuation model based on the Network Effect assumptions

The Network Effect recognized by the impact that the network provides to the component actors and they can be both suppliers and customers, and the repercussion of these effects beyond the expected further increases the value of the company to the participants of a network (PARKER; ALSTYNE; CHOUDARY, 2016).

The Network Effect should encourage companies to use it strategically and, as a result, continuously increase the connection with customers, which can build customer loyalty (MAGALDI; SALIBI NETO, 2018).

The measurement of the Network Effect is recognized as challenging and the one with the greatest acceptance is called the Metcalfe Law based on the logic that the value of a network varies according to its proportional size, therefore, to the number of links and nodes that make up (ODLYZKO; TILLY, 2005; REED, 1999; BECKSTROM, 2009; STEIN, 2009).

4.2 Main characteristics of the company valuation model based on the assumptions of the Client Based Corporate Valuation

Academic and market professionals recognize that the relationship between customers and the company is a valuable asset for the latter (McCARTY; FADER, 2018). In this context, incentives to disseminate data on the number of customers won and lost are beginning to exist, and this has fueled a growing interest in linking the value of customers to that of the company, globally (MCCARTHY; FADER; HARDIE, 2017).

The CBCV methodology of evaluating companies is synergistic to the predictable revenue stream and an active client base, which makes it possible to provide correct data on clients, thus avoiding insignificant indicators as they seem (MCCARTHY; FADER, 2020).

The CBCV methodology underlies the customer's behavior and how it contributes to the company's revenue and, in addition to the data from the traditional financial statements, it uses two other factors: (i) a customer behavior model or base

model of the client; and (ii) the customer data that will insert in the model (MCCARTHY; FADER, 2020).

The CBCV model makes it possible to understand the actions and behaviors of the customers of a certain company, when they will make the new purchase and how much they will spend over time. With this, in the same way it is possible to forecast revenues, as well as the estimate of the company value will be much closer to reality. The CBCV model is universal, adaptable to any type of business, and simple to execute (MCCARTHY; FADER, 2020).

4.3 Main theoretical similarities that exist in the valuation models of companies called Network Effect and Client-Based Corporate Valuation.

It appears that the researched models focus on the relationships or connections between companies and customers, these as a centralizing item in the evaluation criteria of companies (PARKER; ALSTYNE; CHOUDARY, 2016; MCCARTHY; FADER; HARDIE, 2017; MAGALDI; SALIBI NETO , 2018).

The models jointly extrapolate, in their analysis, the internal vision of the company, as they consider similar relationships with the market through behavior with actors such as, citing an analogous case, suppliers and the consequent search for forecasting purchase and sale transactions (PARKER ; ALSTYNE; CHOUDARY, 2016; MCCARTHY; FADER, 2020).

In the measurement, of the company's value, both models consider the value of the transaction carried out with the customer as a relevant variable.In view of this, the value of the company impacted by the value of sales made with customers, so the same value is directly proportional to the monetary amount of sales (PARKER; ALSTYNE; CHOUDARY, 2016; MCCARTHY; FADER, 2020).

5 CONCLUSION

This research carried out with the aim of identifying the main theoretical similarities or those that stand out the most in the evaluation models of companies called Network Effect and Client Based Corporate Evaluation. In this scenario, it was possible to notice growing understandings that customer relationships are increasingly considered and relevant variables when seeking to attribute value to companies.

The study made it possible to identify that among the company valuation models called Network Effect and Client Based Corporate Valuation there are the following similarities: (i) the relationships between customers and the company are variables that

underpin the company's value; (ii) external variables such as the company's relations with suppliers truly impact the company's value; and (iii) the value of transactions with customers directly impacts the value of the company, so sales of greater added value or of constant periodicity positively influence the value of the company.

The similarities limited, as a rule, to those previously identified, however, although this is not the research proposal.It is possible to express that the two models focus especially and coincidentally on the customer as the main variable to evaluate companies, but there are many and other discrepancies among the models studied, which do not prevent the peculiarities and effectiveness of each model in evaluating economic entities.

In view of the previous paragraph, new research suggested that seeks to identify the main divergences between the evaluation models of companies studied, as there is an indication that these are more abundant than similarities, and that if a company adopts the models concurrently, most likely the results will not be the same.

As a limitation to the present research, the predominantly bibliographic methodology stands out, since tests and empirical verifications of the studied models will certainly bring relevant contributions to the development of methods of evaluating companies with the customer as the focal point.

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