ISCTE ⬤ Business School
Instituto Universitário de Lisboa

Customer Valuation Model

Applied to a foodservice commodities supplier

Victor Manuel Mónica Monteiro Alexandre

Master in Management

Supervisor:

Prof. Pedro Fontes Falcão, Invited Assistant Professor, Marketing, Operations
and General Management Department, ISCTE Business School

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ABSTRACT

In last few years, terms like customer centric organization; customer focused strategies; customer metrics and customer value assessment have became buzzwords in the organizations. Independently from which angle managers are grasping these concepts, a common denominator seems to accede that customers are probably the most valuable assets in a company.

However, most of costumer value assessments are confined to sales revenues analysis.

In this document, several customer value models are assessed, in order to evaluate which can be used as a metric and as a managerial tool, able be applied to market particularities of a foodservice food products supplier.

The author selected CLV model as the base model to assess customer values, adapting it to the presented case study. In addition to this model, it was developed a complementary scoring model to balance qualitatively the adapted CLV outputs.

The two models working together are the proposed solution to assess the case study customers' value.

DATA COLLECTION

All data have been retrieved from Farm Frites internal sales information. Most of it will be presented in percentages and using indexed numbers to preserve information confidentiality, keeping still its statistical significance.

KEY WORDS

Customer lifetime value (CLV); value drivers; complementary scoring model; customer equity; customer capital; Farm Frites.

RESUMO

Nos últimos anos, expressões como: organizações orientadas para o cliente; estratégias centradas no cliente; métricas de rentabilidade e de valorização de clientes têm sido proferidas como alguma frequência no seio das organizações.

Apesar de nem sempre os gestores perceberem estes conceitos na sua plenitude, a grande maioria consegue conceber que os clientes são provavelmente o ativo de maior valor das suas organizações.

Contudo, e apesar dessa consciência de mais-valia, na grande maioria dos casos, os procedimentos de valorização e de medição do valor dos clientes ainda se resumem a análises lineares da margem de vendas.

Neste documento, procura-se apresentar vários modelos de avaliação de clientes, aferindo qual ou quais melhor solucionarão o problema apresentado. Ou seja, avaliar o portfólio de clientes de uma empresa fornecedora de "commodities" alimentares a operar no sector de "foodservice" no sul da Europa.

O autor optou pelo modelo CLV – "Customer Lifetime Value" como modelo base, adaptando-o à especificidade do problema apresentado. Foi ainda desenvolvido um modelo complementar, que através de procedimentos de ponderação acrescenta valorização qualitativa aos resultados do primeiro.

A aplicação em modo de complementaridade dos dois modelos são a solução proposta para o problema do caso apresentado.

1. EXECUTIVE SUMMARY

The current economic situation in Europe is throwing some markets sectors into growth stagnation, and in some cases into negative growth.

Foodservice sector is no exception, mainly in Southern Europe where decades of natural growth is now being flatten by an everlasting economic crises, and by a higher level of market's maturity where any existing growth is marginal.

Inevitably, this situation will push firms to take a new strategy towards the market. To increase their revenues, it's clear that acquiring new customers or grasping new market shares will be a harder task.

In absence of market's natural growth, the only way to acquire new customers is to take them from competition. In the current market situation, this means getting into a very expensive war that might take long time for payback – if ever.

However, decades of economic growth implanted into the organizations the "virus" of "new customers thrill". There was always a piece of market to sustain sales budgets with two figures increase, since back then acquiring new customers was "sweet and cheap". Although current market situation hardly encourages continuing with this strategy, apparently it was not totally abandoned.

Acknowledging this scenario, firms need to adopt a new mindset by rethinking their commercial strategies, mainly the way firms manage their marketing investments. It'll require assessing the real cost of acquiring new customers, and most of all to realize the real value of existing customers. Once assessing which customers are creating value and which ones are destroying value, firms can take actions to "defend" profitable customers, and "delivering" to competition the ones that are recurrently in "red".

The current document aims evaluate a managerial tool to be applied in a case study referring to a firm operating in the foodservice sector, supplying food products commodities.

This tool must have two main functions:

i) *This tool should perform as a metric to assess customers' value:*

It's required to provide a holistic view about customer relationship value, not just restricted to an accountability perspective. It ought to input other variables, which might have significant correlation with value creation in the organization referred in the present case study.

ii) *To become a decision-support tool:*

The D.I.K.A.[1] principle acknowledges that, in a business environment, measuring is usually a waste of resources unless it precedes decision-making. The input drivers of this tool should become drivers to decision-making in customers' portfolio management.

Once the customers' value assessed, management can decide which relationships to keep and which ones needed to be reevaluated, since more than ever, firm's equity value is related in keeping business sustainability – not great market shares. Although acceding that some customers bring "value" to a firm even when having a negative profit, yet in those situations that "value" needs to be objectively quantified.

Especially in a business to business environment, a reliable customer's value metric can assist managers deciding in which relationships to invest. Either to increase existing customers' revenue, or to prevent "good customers" ending up in competition's "courtyard".

The same principle ought to be applied concerning costs related to acquiring new customers – a good customer value assessment for its expected "value" can prevent bringing to a firm's customer portfolio "toxic" assets.

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[1] - D.I.K.A. abbreviation for: *Data → Information → Knowledge → Action*. This means that from a vast amount of *Data* available, only a fraction is to be considered valid *Information* for the current problem. Information needs to be filtered, compared and questioned to become *Knowledge*. Knowledge itself has lower value if it is not to be used in supporting and triggering *Action*.

2. LITERATURE REVIEW

The proposed review of literature efforts to cover a selection of referred authors, with recognized research in the knowledge field of this document's subject.

Supported in the scientific facts the author aspires to justify his options and related conclusions presented in the following case study.

Figure I map the milestones or the main topics to be covered with literature review.
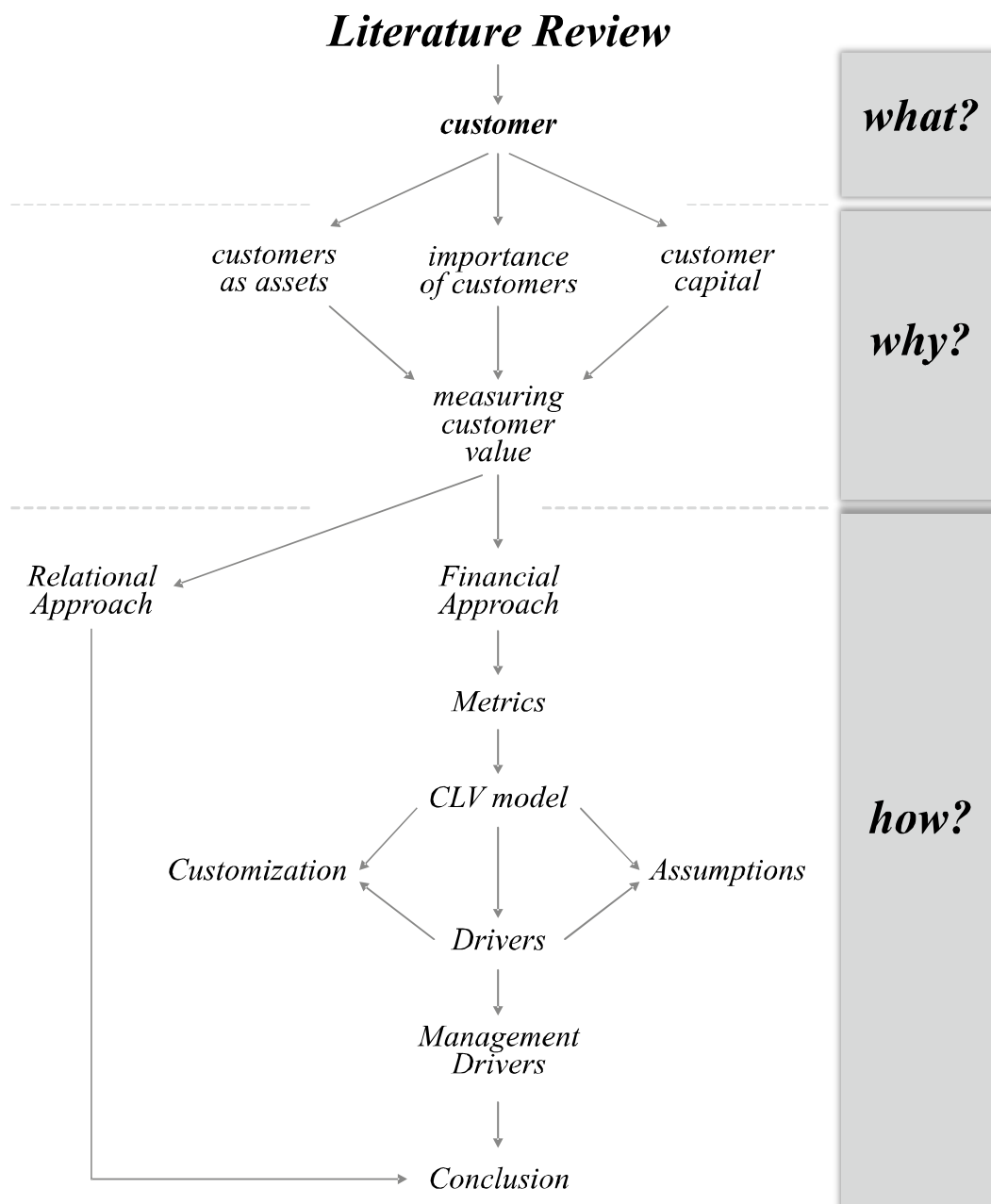
Figure I – Literature review milestones' map

FINDINGS

2.1 IMPORTANCE OF CUSTOMERS

 "Customers are the lifeblood of any organization" (Gupta and Zeithaml, 2006:718).

If this sentences was all there is to say about this subject, it would say quite enough concerning the importance of a customer.

In fact, products don't pay a firm any money. Neither do brands, employees, production facilities or stores. Costumers are the only asses generating revenues for a business, Peppers, D. and Rogers M. (2011)

As mentioned by Gupta and Lehmann (2005), most of top managers are becoming aware that customers are critical to a business survival, where the entire organization ought to be customer-centric. Customer is taking a new role in firms' value as they become to be treated as firm's assets. In fact, Gupta *et al* (2004) states the good value in using customer value metrics to assess firms value. Although, as mentions Roland T. Rust, *et al* (2004) current management practices do not yet fully reflect that mindset.

2.2 CUSTOMERS AS ASSETS

Acceding that several authors acknowledge customers are assets, it's required to clarify the definition of these two concepts: "*A customer is a person or business that buys from the firm*" (Farris, Paul W., *et al* 2010:156). *"Assets are everything owned economically by a company that has money value."* where intangible assets are *"... everything that is not physical or investment, but is of value to the company.*

Daum, J. H. (2003) considers as intangible assets or companies intangible resources: human capital; structural capital; partner capital and customer capital.

2.3 CUSTOMER CAPITAL

As mentioned above, if customers are assets for current revenues, customer capital is the value of the relationships a firm maintains with a customer – the value of future revenues. The quality and the tenure of those relationships determine the sustainability of cash flows generated by those customers (Daum, J. H., 2003).

Ryals, L. (2008) refers to this value as 'relational value' - an asset with "*perceptible and measurable value even if it is intangible".*

In compliance with the fact that relationships with customers are assets (measurable as any other asset) makes sense firms decide to invest resources managing and optimizing the value of those assets (Ryals L., 2008).

As Figure II demonstrates, in the last decades the level of investment in intangible assets has overlapped the investment made in tangible assets. The new value creation is now relying in invisible intangible assets, in opposition to industrial capitalism where business was based in tangible assets.
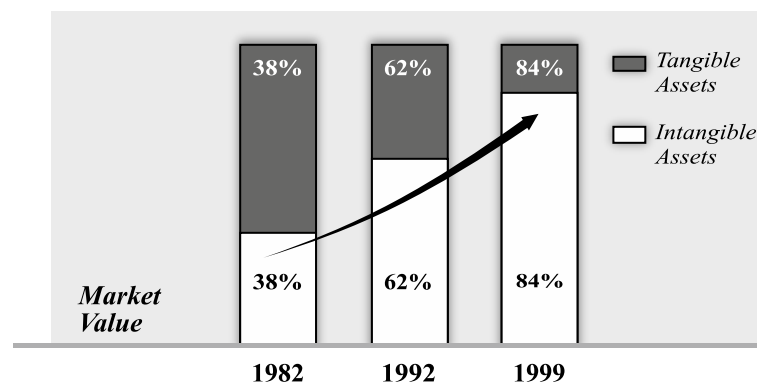
Figure II - Development of the value of intangible assets as a percentage of
total market value of S&P 500 companies between 1982 and 1999
Source: Daum, J. H. (2003)

2.4 MEASURING THE VALUE OF A CUSTOMER

Hence, the need of investment in intangible assets also leads to the need of measuring results, and assessing which drivers are important to get the best return on those assets.

As a consequence, companies became more aware of the importance of "relationships" maintained with their customers, changing the usual product-oriented philosophy to a customer-centric strategy. As mentioned Gupta, S. and Zeithaml, V. (2006:718): *"The need to understand the relationships among customer metrics and profitability has never been more critical."*

The customer-centric approach implies adopting a new mindset at corporate management level. Meaning rethinking corporate culture; to adapt organizational structures and questioning the usual way of approaching the market. This change requires necessarily implementing new metrics and acknowledging their key drivers. As mentioned by

Wierenga, B. *et al* (2008) marketing departments need to implement new marketing metrics focused in the new value creation paradigm.

Traditional Marketing Metrics	Customer Metrics
Sales/Share, Product Profitability	Customer Profitability
	Customer acquisition (rate, cost)
	Customer margin (€, growth)
Satisfaction	Customer retention (rate, cost)
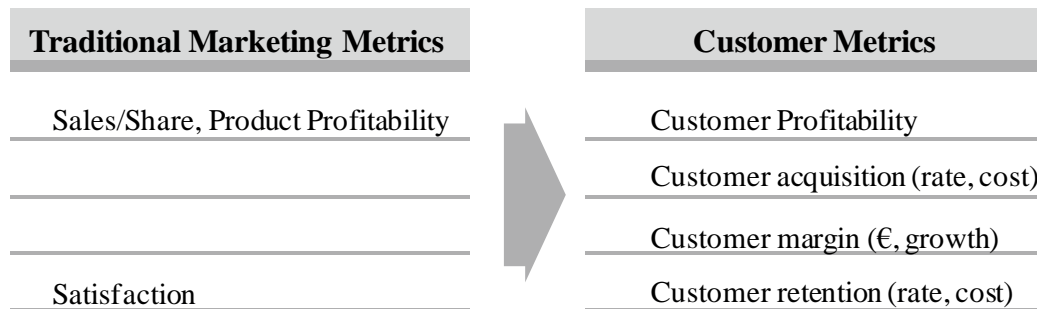
Figure III - Traditional and the new customer-based approach.
Source: Gupta, S. and Lehmann, D. (2005)

As Figure III demonstrates, the focus on measuring performance is shifting from product metrics to customer metrics. In this figure, customer satisfaction although a customer-focused indicator, is still considered a traditional metric as it might give a wrong idea on value creation, since a very satisfied customer does not mean a very profitable customer (Ryals, L. 2008).

Still, Thomas, J.S. *et al* (2004) advises for the traps concerning customer metrics, namely by treating acquisition and retention as independent activities in order to maximize its rates.

Concerning the field of research related to customer value measurement and their metrics, two schools of thought have come with different approaches on how to measure customer assets: the financial value approach and the relational value approach. (Ryals, L. 2008).

2.5 CUSTOMER VALUE – FINANCIAL APPROACH

The financial approach, considers several methods (models) of valuing customers:

- CPA – Customer Profitability Analysis
- PCV – Past Customer Value
- RFM – Recency, Frequency & Monetary Value
- SOW – Share of Wallet
- CLV – Customer Lifetime Value and CE - Customer Equity

About these methods' definitions, the author found several and not necessary converging terms, as mentioned in Gleaves *et al.* (2008) quoted by Persson and Ryals (2010:426) - *'the marketing literature suggests, from an accountant's perspective, a lack of understanding and clear use of such terms'.*

However, the author infers that more important than pursuing the right (or most complete definition) for these models, it's more critical to assess their value and their applicability as tools for the presented case study.

2.5.1   CPA - CUSTOMER PROFITABILITY ANALYSIS

According to Ryals, L. (2008:21) *"Customer profitability is defined as the historic value of the customer – in other words, the profit or cash flow they delivered in the previous year."*

"(...) where the basic calculation goes as following:"

$$CP_{of\ a\ customer} = CR_{t0} - (COGS_{t0} + CTS_{t0} + CSO_{t0})$$

CP	=	Customer profitability
CR	=	Customer revenue
COGS	=	Costs of goods sold
CTS	=	Costs to serve
CSO	=	Customer-specific overheads
t0	=	A fixed period of time – usually one year.

Customer profitability analysis is based on actual historical and it's used mainly to evaluate: customer dependency (if profit comes from a short or a larger cohort of customers); to evaluate the balance between customer retention and customer acquisition activities; and payback period to customer acquisition.

This model allows to determine the profit (cash flows)[2] generated by a customer (asset) in a certain period of past time.

CP model has the advantage of using existing facts (not forecasted) about previous customer's purchases and its associated costs to support the analysis. However, that's also

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[2] - As Ryals, L. (2008:26) refers *"cash is fact, profit is opinion"*. Cash flows it's a tangible exchange of value. The CPA it's not exclusively about cash flows. For example, assets (customers) generate profits in a certain period of time that only become cash flows in the future. Nevertheless, those assets are already generating value to the firm.

this method mainly drawback - customer profitability analysis is looking into the past. The output of this method might lead to wrong conclusions concerning potential future revenues, (Ryals, L. 2008).

2.5.2 PCV – PAST CONSUMER VALUE

Although this model considers a discount rate *r*, adjusting the "time value" of customer's margin contribution, still considers the past performance as a "scale" for future revenues extrapolations. Kumar, V. (2008)

$$PCV_{of\ a\ customer} = \sum_{t=1}^{T} GC_{it} \times (1-r)^t$$

PCV = Past Customer Value

T = Number of time periods before the current period when the purchase was made

i = Customer *i*

r = Applicable discount rate (for example, 12 % per annum or 1 % per month)

GC_{it} = Gross Contribution of transaction of customer *i* in time period *t*

2.5.3 RFM – RECENCY, FREQUENCY & MONETARY VALUE

RFM models "looks" into past business relationships to create patterns for future purchases.

> RECENCY: This element indicates if customer is still doing business with the firm:
>
> FREQUENCY: Indicates the customer's relationship timetable with firm
>
> MONETARY: Indicates the amount value resulting from purchases in the studied timetable. Ryals, L. (2008:111)

The RFM components: Recency, Frequency and the Monetary Value are scored under relative weights, that's why this model is also called a "proxy variable" used to rank customers based on value. *"A proxy variable is, in effect, a representation of a customer's value to the enterprise rather than a quantification of it."* Peppers, D. and Rogers M. (2011:138)

Although this model is a widely used metric, it's still a backward-looking model considering that future customer portfolio will behave *as is*. Kumar, V. (2008)

2.5.4 SOW – SHARE OF WALLET

The metric share of wallet, also called the SOC – Share of Customer (Peppers, D. and Rogers M. 2011) refers to the share of business a firm obtains in each customer. In other words it's the firm's *"sales penetration for a specific customer"* Palmatier, R.W. (2008:46).

Although it can be done at aggregated level, it's at customer individual level this tool provides more useful information Kumar, V. (2008).

$$SOW_{of\ a\ customer} = \frac{S_j}{\sum_{j=1}^{J} S_j}$$

SOW	=	Sales of a certain customer
J	=	Number of time periods before the current period when the purchase was made
$\sum_{j=1}^{J}$	=	Total of sales made by all suppliers to a certain customer

SOW is a useful metric to assess the potential growth of a customer. By evaluating the remaining share of each customer, a firm is able to define a set of actions to increase its margin contribution, namely by implementing up-selling and cross-selling programs.

2.5.5 CLV – CUSTOMER LIFETIME VALUE & CE – CUSTOMER EQUITY

Gupta, S. and D. Lehmann (2003) refers to customer lifetime value (CLV) metric as being a useful approach to "judge" firm actions and consequently its financial market value. The CLV model, although a fundamental metric of firm's relationships with its customers, it assesses also its financial consequences. By focusing its attention on customers rather than products portfolios, it institutionalizes the desired firm's external orientation

Ryals, L. (2008:83) defines CLV as the *"stream of profits or cash flow generated by a customer over the remaining lifetime of the relationship, expressed in present-day money. Can therefore be thought of as the net present value (NPV)*[3] *of a customer relationship".*

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[3] - The NPV is the sum of the discounted cash flows (DCF). The discounted cash flows "is the process of using a discount rate to adjust forecasts of future profits or cash flows so that it can be expressed in terms of today's money. The total DCF gives the NPV, which is the current value in today's money of this future income." (Ryals, L. 2008:83)

This concept is represented with following CLV model:

$$CLV = \sum_{t=0}^{T} \frac{(p_t - c_t)\, r_t}{(1+i)^t} - AC$$

p_t = revenue generated by a consumer at time t

c_t = direct cost of servicing the customer at time t

i = discount rate or cost of capital for the firm

r_t = probability of customer repeat buying or being ''alive'' at time t (retention)

AC = customer acquisition cost

T = time horizon for estimating CLV

Customer Equity (CE) is considered the sum of all individual customer's CLV or the aggregated CVL Gupta, S. *et al* (2006).

$$\text{Customer Equity} = \sum CLV$$

Customer lifetime value has taken a central role in measuring customers' value. CLV is referred as the bridge between the traditional focus of marketing on customer behavior, and the focus of finance on ROI (return on investment) and SHV (Shareholder Value). By assessing current and projected customer's cash flows, CVL is considered a forward looking metric, and although this metric values customers' relationships (intangible asset), CLV is already issuing a critical impact on companies' stocks options prices, Berger, P.D. *et al* (2006).

Gupta and Lehmann (2005) reinforced the "accountable" value of this metric by referring that the main elements contributing to Shareholder Value are: firm's aggregated CLV or CE; the value of financial assets[4]; and firm's option value[5].

2.6 DRIVERS OF CLV

Once verifying the importance of CLV and its contribution to firm's value, maters to understand which are the drivers influencing the CLV metric. Meaning, which are the components determining the value of a customer.

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[4] - Assets not related to production.

[5] - Representing the potential for new business revenue.

From the analysis of CLV equation, it's possible to identify four main drivers or components with direct impact on customer lifetime value, as shown in Figure IV: Customer <u>Margin</u>; Customer <u>Retention Rate</u>, <u>Customer Acquisition Costs</u> and the cost of capital expressed as the <u>Discount Rate</u>.

Customer Margin

Customer Retention

Customer Acquition Costs

$$CLV = \sum_{t=0}^{T} \frac{(p_t - c_t)\, r_t}{(1+i)^t} - AC$$

Discount Rate

Figure IV – CLV drivers or components

<u>*Customer Margin*</u> – is the amount of a customer revenue or contribution margin minus the cost of serving that customer. For a matter of simplifying CLV estimation, it's usually assumed that Customer Margin is constant over customer lifetime. The assumption that customer margin remains the same have generated some discussion, however studies are not conclusive if in general margins increase or decrease (or stay constant) over a customer business relationship with a firm, Gupta & Lehmann (2005).

<u>*Customer Retention*</u> – is the percentage of customers keeping a business relationship with a firm over a defined period of time. This value is calculated by subtracting customer's churn (defection) rate from the total customers' portfolio. Usually is considered as a constant value, based on recent customer defection patterns.

As Reichheld (1996) suggested, this driver could be the most critical component influencing CLV, although Reinartz and Kumar (2002) refers that customers keeping longer relationships with a firm aren't necessarily the most profitable ones.

However, acknowledging CLV is the fundamental metric to assess customer's relationship value, it's admissible that a good relationship with customers has direct influence on customer's retention rate, Ryals, L. (2008).

Reinforcing the importance of customer retention, Gupta and Lehmann (2005) demonstrated that improving customer retention have the largest impact on firm value when compared with other CLV drivers, as shows Figure V.
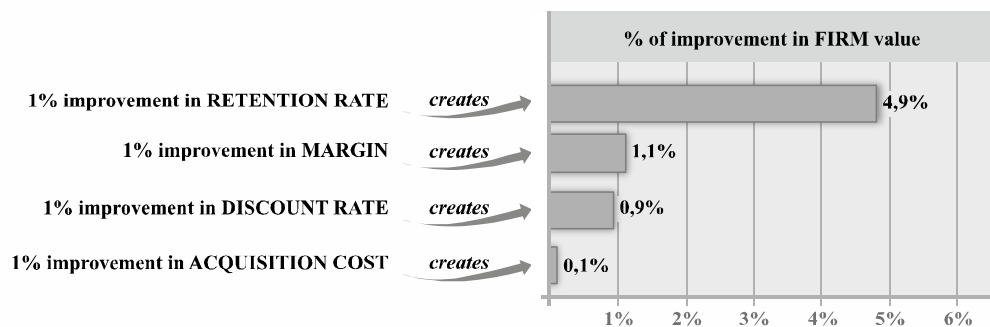
Figure V – CLV drivers impact in firm value
Source: Gupta, S. and Lehmann, D. (2005)

Figure V shows that by reducing customer churn in 1%, creates an improvement of almost 5% in firm's value.

Acknowledging it's more costly to serve a new customer than a loyal customer, it's plausible to say that investing in serving existing customers (in detriment of investing in new customers) might be the most intelligent resources allocation to improve customer equity, thus, firm's value. In addition, there's evidence that the cost of serving a customer goes down over time, Gupta and Lehmann (2005).

Customer Acquisition Costs – This driver refers to the costs incurred to attract new customers. Using this indicator, the CLV model makes it easier to balance the investment required to acquire a customer with its present net value.

Discount Rate – also mentioned as the cost of capital, this driver expressed in percentage "inputs" the business risk and "time value" of money into the CLV model. Considering, that money received today is more valuable than the money received in the future, Gupta and Lehmann (2001).

When calculating the CLV for an individual customer, the discount rate can be used to input the level of risk associated to that customer, which might be higher than business risk, adjusting the forecasted cash flows from this customer to the risk level of existing relationship. Firms are paying more attention to this risk factor, and considering it as any other relationship factor. As mentions Lynette Ryals (2006), more and more firms are bringing the relationship risk factor to the negotiation table with its customers.

Usually, the business risk or discount rate can be fixed proportionally to the Treasury bill; to the interest rate paid by the banks for saving accounts; or following the remuneration demanded on firm's WACC (Weighted Average Cost Of Capital).

2.7 CLV – SIMPLE APPROACH & DRIVERS ASSUMPTIONS

As shown, using the CLV model requires the assessment of several drivers that are able to be grouped in two key pieces of information: customer defection rate over time and customer profit pattern[6]. The assumptions made on these elements can simplify or increase the level complexity of the CLV model.

There is some discussing about using the simple approach of CLV model presented here, or using more complex CLV models. For example, Rosset *et al* (2003) inputs into CLV model probability functions of churn rates.

Gupta and Lehmann (2005) defend that even the most sophisticated CLV models based on data intensive and complex mathematical models are inaccurate, perusing what these authors call the "illusion of precision".

Under this premise, and in order to simplify the CLV calculation, Gupta and Lehmann (2005) proposed (with supportive arguments) three assumptions concerning CLV main drivers: retention or <u>defection rate is constant</u> over time; <u>margin is constant</u> over time and the <u>CLV is calculated over an infinite time horizon</u>.

The most controversial assumption could be the infinite time horizon, however assuming an infinite time frame does not mean customers will stay "on board" forever. By CLV model definition, applying the retention rate restricts the probability of customer tenure over time, lowering its margin contribution to residual values as time extends.

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[6] - Considering "profit pattern" summarizes three CLV drivers: The Margin (updated with the Retention Rate) minus the Acquisition Costs when existing.

Figure VI demonstrates that even when assuming an infinite time horizon, a constant discount rate of 70%, in period 10 ($t = 10$) the r multiplier (retention) is 0,028. Meaning, in ten years the margin contribution it's reduced to 2,8% of its current value.

Years	1	2	3	4	5	6	7	8	9	10
Rentention Rate (K=70%)	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Probability of keeping the customer	70.0%	49.0%	34.3%	24.0%	16.8%	11.8%	8.2%	5.8%	4.0%	**2.8%**

Figure VI – Retention rate and customer tenure

As mentioned, taking assumptions to simplify CLV model doesn't mean getting unreliable conclusions. A good example is the *margin multiple factor*, Gupta and Lehmann (2005), resulting from CLV model simplification:

$$\mathrm{CLV} = \sum_{t=0}^{T} \frac{(p-c)\,r}{(1+i)} - AC \quad \longrightarrow \quad \mathrm{CLV} = \sum_{t=0}^{T} \frac{(mg)\,r}{(1+i)} - AC \quad \longrightarrow \quad \mathrm{CLV} = mg \left(\frac{r}{1+i-r} \right)$$

$$mg \;=\; \text{margin in a period of time}$$
$$r \;=\; \text{retention rate}$$
$$i \;=\; \text{discount rate}$$

From the assumption that *mg*, *r* and *i* are constant, it's possible to establish a multiplier based on retention and on discount rates, called the *margin multiple* factor:

The *margin multiple*: $\dfrac{r}{1+i-r}$

The *margin multiple* factor allows an easy and quick way of calculating a customer CLV as shown in Figure VII.

The *margin multiple*: $\dfrac{r}{1+i-r}$

	Discount Rate			
Retention Rate	10%	12%	14%	16%
60%	1.20	1.15	1.11	1.07
70%	1.75	1.67	1.59	1.52
80%	2.67	2.50	2.35	2.22
90%	4.50	4.09	3.75	3.46

Figure VII – Margin Multiple
Source: Gupta, S. and Lehmann, D. (2005)

The table shown in Figure VII considers a retention rate commonly found in most companies, i.e., between 60% and 90%, and a discount rate between 10% and 16%.

For example, if during a year a customer provides a margin of 10.000 EUR, with *r=90%* and *i=12%*, a simple estimation of that customer lifetime value is calculating four times (more precisely 4,09) the value of its present margin, totalizing about 40.000 EUR.

Although this simplistic approach consists in a rough CLV estimation, for most managerial decisions is more than enough, Gupta and Lehmann (2005).

2.8 CLV DRIVERS AS MANAGEMENT DRIVERS

As exposed, in a customer-centric organization, CLV drivers are determinant to firm's value creation. However, the real value of these drivers relies in their applicability as managerial tools.

If a firm decides to improve customer retention driver, that firm needs to outperform its competition in the areas influencing that driver, such as: product and service quality (including the way it deals with complaints); marketing support; operations efficiency; innovation or any other critical element required to keep their customers "on board".

Therefore, to get the best results on customer retention, this firm needs to align corporate strategy in order to excel in the activities having direct impact on customer retention.

The same happens concerning decisions referring to customer margin driver. It's always possible to increase customer revenues by increasing current selling price.

Although it might be a decision to consider for the less profitable customers,[7] applying the same "formula" for the majority of customers may cause a huge impact on customer retention, Ryals, L. (2008).

Another option to get more revenues from sales is increasing customer acquisition rate, however this initiative might draw marginal customers that in time may cause a negative impact in retention rate and in customer margin, Gupta and Lehmann (2005).

As illustrated in Figure V, it's evident that improving customer retention has a different weight in firm's value, when compared with improving customer's margin. Thus, any

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[7] - When balanced the consequent loss in customer equity caused by defection of customers.

trade-offs between these two drivers requires proper leveraging to compensate the difference of weight in firm's value.

Verifying this cause-effect pattern, it's plausible to affirm that CLV drivers don't "work" alone or independently from each other. As an example: cross-selling is widely used to expand customer margin and to increase customer share of wallet. In addition, cross-selling has also the potential to improve customer retention, Gupta and Lehmann (2005).

In terms of specifics, these examples illustrate that drivers are usually a cohort of factors and sub-drivers with multi-level implications in a firm's performance. As seen with the decision of implementing a cross-selling program. When well succeed ends up having double impact in customer equity: by improving customers' margin and by improving customer retention rate.

2.9 CLV CUSTOMIZATION

As presented, there are four main CLV drivers that for the majority of cases, even when considered with simplifying assumptions, grant more than valid information to assess customer lifetime value.

However, there are some business areas where drivers, not considered in the main CLV model might have a significant level of correlation with customer equity. Those variables, even when difficult to quantify, are important to be considered – if not, *"(...) to create a historically quantifiable representation of the customer and to compare that customer's history with other customers"* Peppers, D. and Rogers M. (2011:129)

The challenge of adding more drivers to CLV calculation is bringing more significance to the analysis without increasing the model complexity or making it unpractical to apply.

Another approach is to complement CLV model with other metrics to assess more information to its main drivers. For example, Ryals, L. (2008) considers STEEP[8] analysis; Porter's five forces of competition; RFM metric and SOW metric as support for future projections in customer lifetime value estimation.

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[8] - STEEP abbreviation for Socio-cultural; Technological; Economic; Environmental; and Political/Regulatory. Also mentioned as PESTLE analysis.

2.10 CUSTOMER VALUE – RELATIONAL VALUE APPROACH

According to Ryals, L. (2008), relational value refers to the value created by customers not able to be measured with financial metrics like CLV.

Ryals, L. (2008) classifies relational value in four types: Reference; Referral; Learning; and Innovation, whereas the 'real value of a customer' is the sum of Financial Value with Relational Value.

In order to evaluate some of the mentioned relational value types it's required to perform auditing approaches, i.e., developing market research within firm's own customer portfolio and with other players in market.

Conducting this research, besides the cost involved[9], could imply getting from some customers the refuse to share information. It's quite common in B2B (business to business) customers consider market information as part of their competitive advantage, becoming quite reluctant to share it with their suppliers Jeffery, M. (2010).

2.11 CONCLUSION

> *"As far as the propositions of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality."*
>
> **Albert Einstein**

From the literature review, the author concludes there is no perfect metrics. However, measuring is always reducing a certain amount of uncertainly, Hubbard, D. W. (2010).

Under this premise and pursuing this document objective, the author infers that the best metric to assess customer value is the Customer Lifetime Value (CLV).
The "good value" of CLV model, relies in inputting drivers valuing current and future customer revenues - filling the financial perspective, and mainly because this model weights customers' relationships asset.

The predominance of relationship driver in CLV, by considering customer retention, brings customer profitability analysis into an upper level, since the value of a customer becomes the result of weighting its revenues with the firm's overall performance.

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[9] - Hubbard, Douglas W. in his book 'How to Measure Anything: Finding the Value of Intangibles in Business' (2010) refers to the economic value of information - by measuring a variable, its uncertainty reduction must be enough to justify the cost of measuring it.

Although CLV is one good metric, the author also concludes that as solution for the presented problem, CLV model needs to be adapted and to be complemented with drivers that are significant to value creation. Thus, those drivers ought to be measured and taken into consideration to assess customer value.

In the present case study, the author will infer about those drivers, and how to input them in a customer valuation model – attempting to confer more significance without increasing the model complexity.

The author will not conduct any research considering the relational value approach. Bringing customer insights into this case study would be a considerable contribution. However, the relational value approach by itself would require another case study just to approach that field of research.

Following Occam's razor principle,[10] the author infers that using current data available provides a good and reliable base to assess customer value.

3. METHODOLOGY

According to Yin, R. (2003) there is several research strategies:

- Experiment
- Survey
- Archival analysis
- History
- Case study

The case study is the most recommended approach when it's pretended to analyze or create knowledge related to contemporaneous events, being frequently used in business related researches. Yin, R. (2003)

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[10] - Ockham's razor, also spelled Occam's razor, also called law of economy, or law of parsimony, principle stated by William of Ockham (1285–1347/49), a scholastic, that *Pluralitas non est ponenda sine necessitate*; "Plurality should not be posited without necessity." The principle gives precedence to simplicity; of two competing theories, the simplest explanation of an entity is to be preferred. The principle is also expressed "Entities are not to be multiplied beyond necessity." www.britannica.com

Barañano, A. (2004) also defines the case study as empirical research that analyzes contemporaneous phenomena, applicable when the researcher is before several variables and sources of evidence. Although considered an empirical research method it's required previous theoretical assumptions concerning data collecting, where the relevant key answers a case study research aims to comply are ***How*** and ***Why.***

The author infers that the case study is the most suitable research methodology for this document's proposes, since the major question related to the presented problem is ***how*** to assess Farm Frites customer value.

Hence, in the process of finding the ***how*** the author implicitly needs to justify ***why*** needs solve the presented problem.

4. CASE STUDY

The present case study aims to develop a customer valuing tool applied to Farm Frites, a Dutch company commercializing its products in 125 countries, having production units in Western Europe, Eastern Europe, South America and Middle East. Farm Frites is currently the third largest player in its market sector.

4.1. FARM FRITES: FROM PRODUCTION TO MARKET

Farm Frites is specialized in processed potato products, producing more than three dozens of products variations from a single raw material: potatoes.

Farm Frites origins are in farming, and still today has a strong bound to the agriculture sector. Although the main business is processing and commercializing potato products, Farm Frites collaborates closely with farmers in areas like sustainable farming and seeds development.

In average,[11] it is required two kilograms of potatoes to produce one kilogram of fries. Thus, it's reasonable to assume that Farm Frites depends considerably on potatoes as it main raw material, being its business strongly shaped by the outcome of annual potato crops.

A good example is the majority of supply agreements done with customers having one year extension, and being celebrated between August and October, when the main crop results are known.

Every season, Farm Frites contracts its main raw material needs, fixing with farmers the prices of potatoes for the whole season. The remained volume is acquired in potato's commodity market at 'day' price.
Either the case, farmers keep the potatoes, delivering then to Farm Frites' factories gradually throughout the year, following a preset production plan.

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[11] - This percentage depends of several factors like potatoes length; potatoes water content; potatoes variety; final product cutting size, etc.

Farm Frites main assortment are pre-fried deep frozen products with a tenability of 18 months. Having also a fresh product range with a shelf life of 21 days (storage between 0ºC and 4ºC).

The processed potatoes business sector is driven mainly by one reference: the pre-fried frozen 10 mm French fries 'A' grade quality.

The "10 mm" refers to fries' width cutting size, the most common cutting size in the market and also the product with larger market volume.

Annual crops determine the potato price, which determines the 10 mm French fries market price. All other potato products variations and cutting sizes (including 10 mm 'B' and 'C' grade quality) have their prices indexed to this article price.

It's easy to find different interpretations about fries' quality grades. In reality, although there are standard product specifications for fries' quality grades, one can find in the market considerable price variances for a commodity such as French fries.

Besides the traditional French fries, Farm Frites also produces what is usually called potato "specialties". There are 2 main categories in potato specialties: products done with a different cutting shape - with or without seasoning; and products made with mashed potatoes processed in several shapes and flavors, as exemplified in figure VIII.
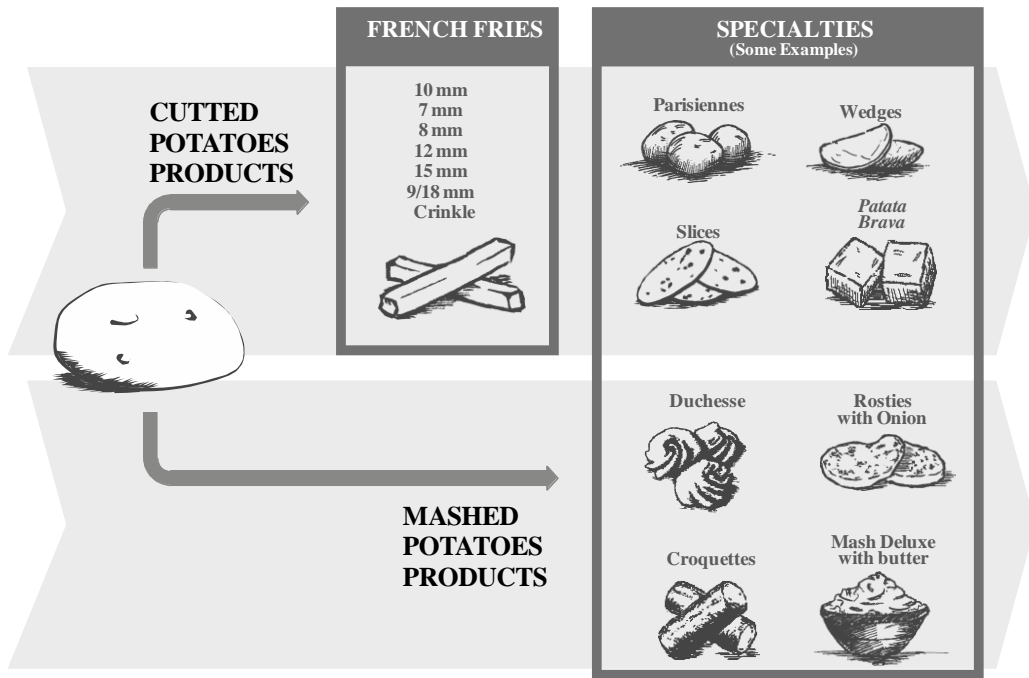
Figure VIII – Some product solutions based on potato, produced by Farm Frites

Specialties are considered added-value products and this product range is usually set aside from the 10 mm fries' price war. The kilo price of potato specialties can vary from 120% to 250% more than 10 mm 'A' grade fries' price, as shown in figure IX.
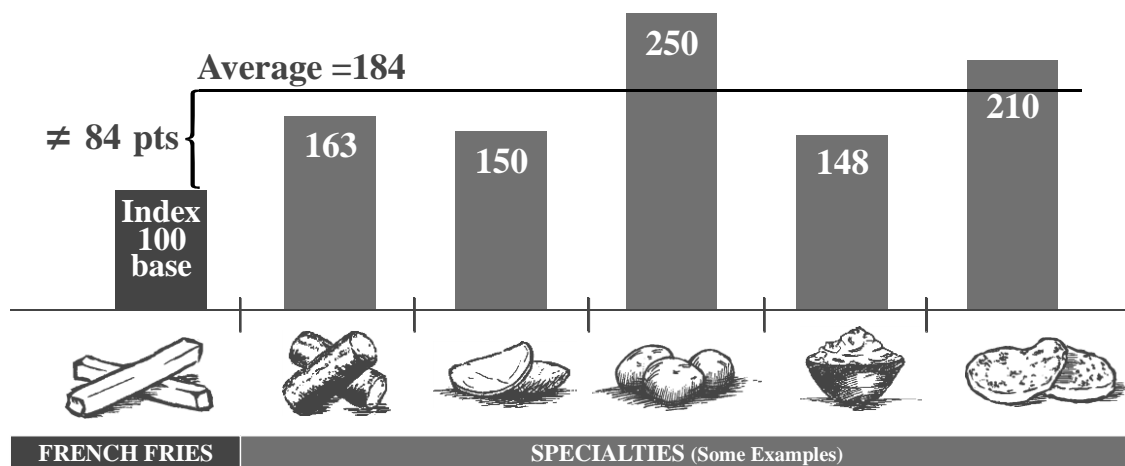
Figure IX – Difference between French Fries and some Potato Specialties

Ex-works prices[12] converted into indexed numbers: French Fries = 100

Source: Farm Frites

Farm Frites largest production volume is done with skus[13] under Farm Frites brands, producing also a small amount under customers' labels.

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[12] - Average prices in a year with a regular potato crop

[13] - SKU: abbreviation for stock-keeping unit

All products, after production, are delivered in two main cold-stores in the Benelux. The entire logistic operation in Western Europe is done from those cold stores, where all products' orders are supplied directly from the mentioned cold-stores. All logistics operations are outsourced.

For this case study, the author selected as object of study three markets from Southern Europe: Portugal, Spain and Italy where the author is currently Southern Europe Market Manager. This function allows the author to have an empirical knowledge about these markets – an asset for this document propose. In addition, as it will be presented in this document, the mentioned markers are also quite different concerning volume and value – ought to be considered as a good sample for this case study.

Farm Frites has a customer service center (CSC) in Barcelona supporting commercial and logistics activities for Southern Europe area. All orders pass through this CSC as well the consequent logistics procedures to deliver them. Customer's financial control is also done in local CSCs.

Each country has a commercial team, reporting to a country manager. The country manager is responsible for all commercial activities in his local market, nevertheless each contract or price quote require a previous approval from central head office in the Netherlands.

Farm Frites main focus is in the foodservice segment, i.e., the HORECA[14] segment, with marginal volume in consumer's retail segment.

This strategy is followed globally in the company. In Southern Europe, excluding some exceptions in Portugal and Italy, customers are wholesalers or centralized buying units with their own distribution structures. These customers usually have the exclusivity for a geographic area. Although exclusivity is not signed into formal contracts, it's preserved in principle to avoid customers clashing into a price war for an overlapping distribution area.

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[14] - HORECA: abbreviation for hotel, restaurant and catering sector
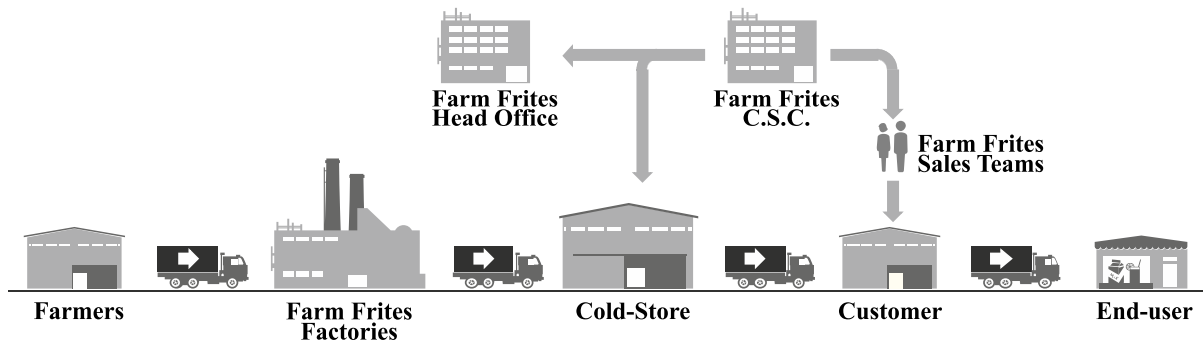
Figure X – Farm Frites Commercial and Distribution chain

As shown in Figure X, Farm Frites has no contact with end-users, meaning, depends on its customers to sell and to deliver the products to the ones preparing and consuming them.

This distribution model is not unique to Farm Frites, as it is also adopted by its main competitors. The required and costly frozen distribution, plus the low revenue per kilo in potato products, forces producers to look for existing distribution structures - usually trading these products' category in a margin contribution approach.

4.2. FARM FRITES: SOUTHERN EUROPE MARKET

The first assessment to define a model to evaluate customers in these three markets, is verifying if each market ought to be analyzed individually, or if it's possible to treat all customers in one unique cohort. Therefore, maters to focus on aspects related to value, mainly identifying which are the drivers impacting the value creation in the mentioned markets.

Every year with the new crop, agreements with customers are renewed, fixing the prices for the new season. Commonly these agreements have the duration of one year. In Spain and in Portugal the majority of customers accede to this procedure. In Italy, only few customers agree to fix prices for the season. In Italy, more than 80% of Farm Frites customers pay the prices accordingly with potato's commodity market at 'day' price.

Although some customers order exclusively to Farm Frites, meaning do not have other suppliers for this type of products, the majority of customers have two or more suppliers.

Customers belonging to multinational organizations celebrate one agreement valid for all countries. However, daily commercial management is done by local sales teams.

Figures XI, XII, XIII and XIV show data retrieved from Farm Frites sales databases referring to Portuguese, Spanish and the Italian markets.
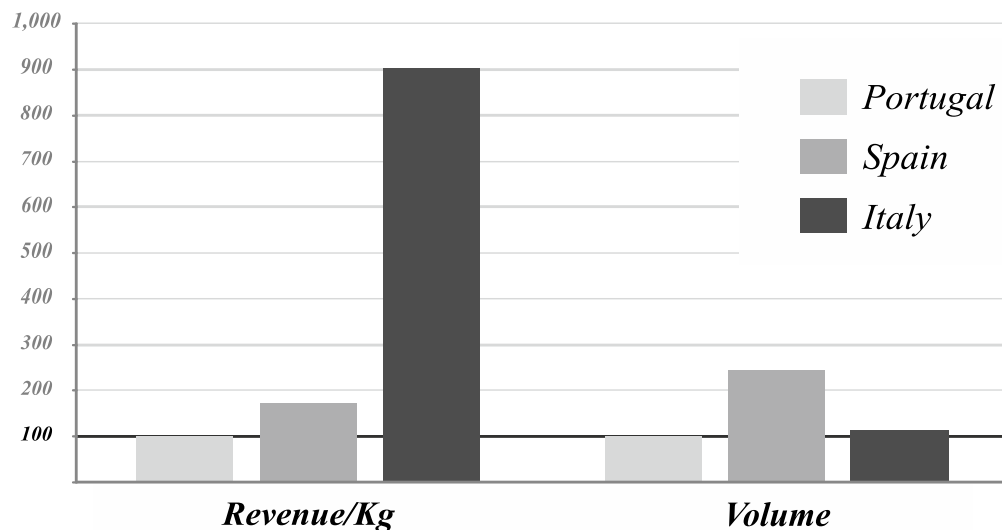
Figure XI – Farm Frites Revenues per Kg and Sales Volumes.
Data converted into indexed numbers: Portugal = 100
Source: Farm Frites

From figure XI, it's clear that the Italian market, regarding revenues per each kilo sold is the best market for Farm Frites, whereas in volume Spain sells more than the of Portugal and Italy combined volumes. Although the price per kilo in Italy is in average 25% higher than in Portugal or in Spain,[15] figure XI indicates that concerning Farm Frites sales revenues this difference is considerably much higher than the mentioned price gap existing in market.

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[15] - Average difference verified in selling price for French fries 10 mm 'A' grade

Kilos

PORTUGAL SPAIN ITALY
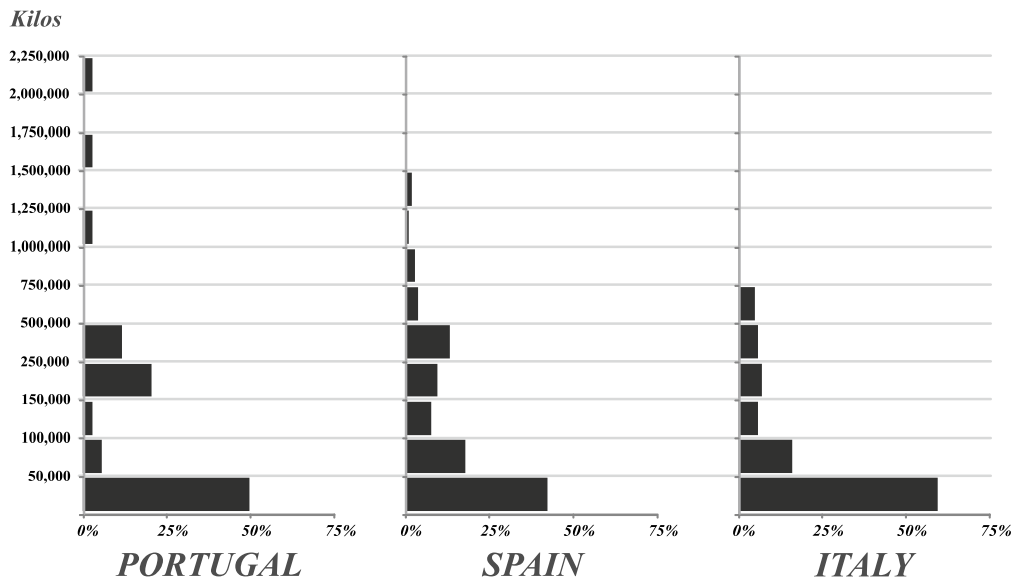
Figure XII – Percentage of customers grouped by annual sales.
Sales volume from 2011
Source: Farm Frites

Figure XII provides one of the "clues" concerning existent differences on value: the first evidence is that Portugal and Spain have customers buying higher volumes. Far from existing a proved perfect correlation between large volumes and low prices, it's natural to assume that a customer buying two millions kilos have better position to negotiate more competitive prices than a customer buying two hundred thousand kilos.

In the case of the Portuguese market, this situation has a higher negative impact, since Portugal has several customers buying more than one million kilos. With the smallest annual volume of the three countries, 'heavyweight' customers with sharp price deals take a higher toll in the average revenue per kilo.
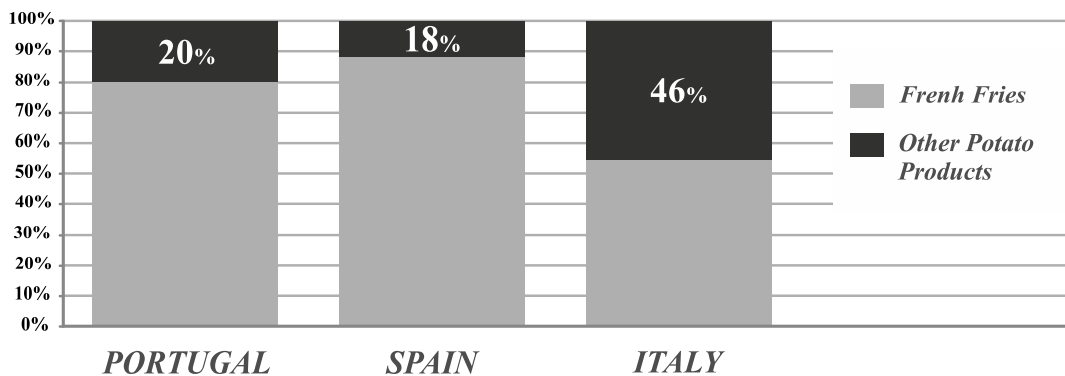
Figure XIII – Distribution between fries and other products
Sales revenue from 2011
Source: Farm Frites

Another indicator that might justify the difference of value among these countries is presented in figure XIII. As mentioned before, potatoes "specialties" are considered added-value products since these products provide higher sales revenues when compared with French fries.

In figure XIII, where Other Potato Products refers to "specialties" - Portugal and Spain have one fifth of sales coming from this product category. As for the Italian market, almost half of its volume it's achieved with "specialties" sales. "Specialties" sales in Italy have significant leverage effect on average revenue per kilo.
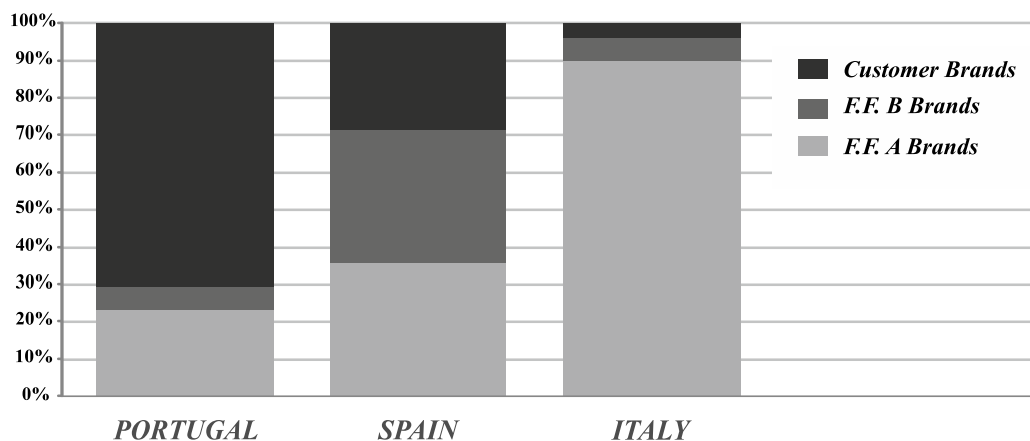
Figure XIV– Distribution between Farm Frites Brands and customer brands produced by Farm Frites, Sales revenue from 2011
Source: Farm Frites

Figure XIV presents Farm Frites sales distribution per brand. This figure shows sales grouped in three categories: Farm Frites 'A' brands, Farm Frites 'B' brands and Customers' Brand per country.

'B' brands have a lower proposition of value, consequence of lower product specifications, aiming a market segment seeking for better competitive prices. Thus, 'B' brands are more likely to be constantly under war prices originating tighter revenues per kilo, also because all main Farm Frites' competitors have 'B' brands in their product portfolios.

It's also common to all producers to pack product under customers' labels. Customers' labels are not supported by Farm Frites marketing activities and in principle are "low maintenance" brands, i.e., Farm Frites provides a minimum service level with these business agreements. Therefore, it's also expected lower sales revenue from these brands when compared with Farm Frites brands.

More than half of sales in Portugal and in Spain are coming from the sum of 'B' brands and customer's brands, when in Italy these brands are merely 10% of total sales amount. Hence, average revenue per kilo in Portugal and in Spain end ups reflecting the excessive weight of low value brands.

This brief overview on the three markets' value contribution revealed that any value analysis ought to be done at country level.

Figure XV refers to profit per product analysis of variance in the three countries. Although verifying variances are not all of them entirely homogeneous, it's possible to verify that averages of net profit per kilo are not similar (rejecting $H_{0:}$ $\mu_1 = \mu_2 = \mu_3$) since F is greater than F *critic* ($F_{0.05}$), or by realizing *P-value* is inferior to 0.05 (the α value). For the same product portfolio, and in the mentioned three countries, it's not found similar behavior concerning the average of net profit per kilo.

Anova: Single Factor

$\alpha = 0,05$

SUMMARY

Groups	Count	Sum*	Average*	Variance
Portugal Net Profit/Kg	58			0.2018217
Spain Net Profit/Kg	142			0.0707801
Italy Net Profit/Kg	61			0.1922156

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.1262662	2	0.5631331	4.4004413	0.0132064	3.0307877
Within Groups	33.016766	258	0.127972			
Total	34.143032	260				

- Values not displayed in order to preserve confidential information

Figure XV– Analysis of variance (ANOVA) of product net profit per country.

Even if an eventual analysis would ignore it, the fact these markets have different competitive environments, just by itself it would justify a separated analysis for each market.

The presented facts just based in internal data from Farm Frites sales, shows that any model to evaluate Farm Frites' customers' value must be implemented separately per country.

4.3. FARM FRITES: CUSTOMER VALUE MODEL (FF.CLV)

Hence agreed to make customer value assessment separately per country/market it's required to choose the model to become the tool for that propose.

According to the literature review done by the author, CLV – customer lifetime value metric is the one better complying with this document objective. Not only because it includes drivers from financial area (customer margin and value of money) and from business relationship management (the retention rate), but also because it allows to be adapted to Farm Frites business model – independently of which market it will be applied.

The author selected the customer lifetime value (CLV) simple model:

$$CLV = \sum_{t=0}^{T} \frac{(p_t - c_t)\, r_t}{(1+i)^t} - AC$$

This CLV simple model will become Farm Frites Customer Lifetime Value model - **FF.CLV**,[16] considering some assumptions and adapting it to Farm Frites business sector.

4.4. FF.CLV GENERIC ASSUMPTIONS

I.   Farm Frites number of customers per country is relatively low, characteristic of a business to business space allowing an individual CLV calculation. Country customer equity will be the sum of each customer CLV.

II. Drivers are calculated for each market/country separately, meaning that a driver from a market is influenced only by factors and variables from that country cohort of customers.

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[16] - FF.CLV abbreviation for: Farm Frites Customer Lifetime Value model

III.   Due to Farm Frites particular business environment, which requires annual reviews of existing business agreements for the majority of its customers, the author considers one year as the time factor to assess each customer value. This is also valid for new customers.

IV.   Although, in most of cases it's used a infinite time frame, as found in this document's literature review, it's more realistic to make an annually reset of FF.CLV driver's values, aligning them with annual Farm Frites' shifting business environment.

Drivers' recalculation is recommended when the annual crop result is known, since potato prices, and hence Farm Frites revenues are highly shaped by this event.

a) Customer Margin

b) Customer Retention

d) Customer Acquisition Costs

$$\textbf{FF.CLV} = \sum_{t=0}^{T} \frac{(p_t - c_t)\, r_t}{(1 + i)^t} - AC$$

c) Discount Rate

Figure XVI – Farm Frites CLV drivers - CLV generic model based

4.5. FF.CLV DRIVERS SETUP

Once defined the generic assumptions for the FF.CLV model (CLV simple model based), it's also required some customization concerning its drivers.

a)   *Customer Margin:* This driver means the margin or revenue obtained from each customer. Currently, Farm Frites uses two indicators: Customer Net Profit and Customer Gross Margin. Both of them are suitable to be considered as customer margin for the model, since usually these indicators behave as two parallel curves. Nevertheless, the author considers that to assess customer equity value, the most recommended indicator is Customer Net Profit. As mentioned, the FF.CLV aims also to become a managerial tool, namely to assist marketing investments

decisions, and for example, Customer Gross Margin indicator does not include marketing investments done per customer.

b) *Customer Retention:* In line with generic assumptions, the *r* factor for a market is calculated based only on that market customers' defection rate.
The retention rate is usually based in the number of customer defection, i.e., the number of customers that left the company.

The author considers the retention rate for FF.CLV should be calculated based on the volume, or preferentially in value that "left" the company, instead of considering the number of customers, which left Farm Frites' costumer portfolio. It's more relevant to consider the loss of 5% of revenue with a customer's defection, than weighting that customer against the amount of existing customers.

As an example, 9% of Farm Frites Italian customers defected between Jan.2011 and Mar.2012, however these customers' loss in value was only 3%.

The opposite effect can also happen: the loss of one customer may represent 1% in the cohort of customers, but in value, it can represent losing much higher percentage.

In fact, CLV metric uses retention rate *r* to weight other CLV driver: Customer margin. The author infers that weighting value (margin) should be performed with a value variable, in this case, Farm Frites' capacity to retain value, rather than the number of customers lost.

Another reason to consider the value component is the fact that it's possible to increase (or decreasing) customer retention rate without changing the number of customers. Since losing the position, as main supplier, in some customers can count as much as losing a customer. Considering all mentioned facts, it's preferable using the value component to calculate *r* in the FF.CLV model, since any changes in customers' share of wallet (SOW) is reflected in the model output.

c) *Discount Rate:* As mentioned in the generic assumptions, the FF.CLV will consider *t* as a time frame of one year to assess customers' value. For the money discount rate *i* the author consider 15%. This value refers to Farm Frites shareholder's minimum requirement for the return on invested capital.

The FF.CLV ought to be used at least once a month complementing existing business activity reports. For this propose *i* = 15% requires to be converted to a monthly discount rate:

$$\textbf{FF.CLV} = \sum_{t=1}^{12} \frac{\left(\text{Net Profit}\right)r}{\left(1 + \frac{i}{15}\right)^{12}} - AC \quad \longrightarrow \quad \textbf{FF.CLV} = \sum_{t=1}^{12} \frac{\left(\text{Net Profit}\right)r}{\left(1 + 1{,}25\right)^{12}} - AC$$

In the case of a new customer, the net profit is the forecasted volume multiplied by the net profit per kilo during the contract's period.

d) *Customer Acquisition Costs:* Acknowledging Farm Frites is operating in a business to business commodities sector, the costs to acquire new customers are usually related to trade shows or professional exhibitions. However, it's not easy to input those costs only to new customers, as those events are also used to promote new product solutions to existing customers.

Nowadays and as mentioned, to acquire new customers means to "whip" them from competition. This implies to offer a better proposition of value than customers are getting from competitors. Although, when mentioning preposition of value it includes service, brand exclusivity and some other relationship attributes, in a commodity market, price usually takes the lead to open or to close a customer "door".

Within the loyal customers' cohort, losing one customer implies usually underperforming in more elements than just price. This means there were other variables in the relationship, which a defecting customer was expecting more from. However, one cannot ignore that getting a better price offer is always a good "sorrow's healer".

Hence, for the FF.CLV model, the author considers that any price reduction to get a new customer ought to be accounted as customer's acquisition costs. It's considered price reduction when it's offered to a new customer a lower price than the average price agreed in existing customers.
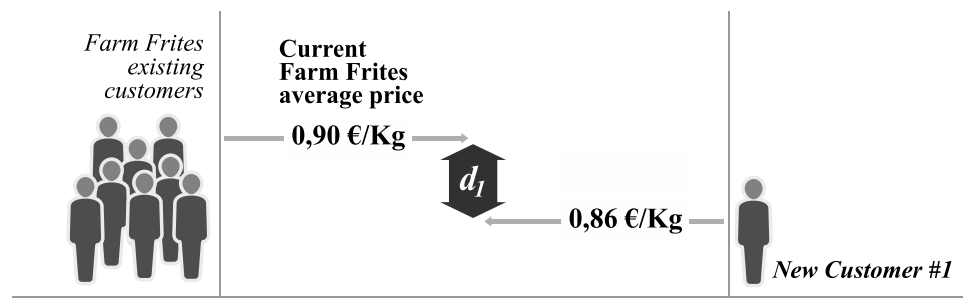
Figure XVII – Acquisition costs based in the difference from existing average price

As figure XVII shows, d_1 is the price difference referring to ***new customer #1*** when compared with the existing customers' average price. As assumed before, the price average is only from customers in same market place (country).

Figure XVIII, considers three scenarios explaining this approach, where for this exercise, the 4 cents difference in price (d_1) means also 4 cents less in profit per kilo, *ceteris paribus*.

Scenario 1	Traditional CLV model				Farm Frites existing customers
Volume in contract = 100,000 kg					
Average Net Profit per Kg = 0.20 €					
Acquisition Costs = 0.00 €					
i = 15%					
r = 95%					
t = 12 months					

$$\frac{(\ 20{,}000\ )\times 0.95}{(\ 1\ +\ \frac{0.15}{12}\ )^{12}}\ -\ 0.00\,€\ =\ 16{,}369\,€$$

Scenario 2	Traditional CLV Model				New Customer #1
Volume in contract = 125,000 kg					
Contracted Net Profit per Kg = 0.16 €					
Acquisition Costs = 0.00 €					
i = 15%					
r = 95%					
t = 12 months					

$$\frac{(\ 20{,}000\ )\times 0.95}{(\ 1\ +\ \frac{0.15}{12}\ )^{12}}\ -\ 0.00\,€\ =\ 16{,}369\,€$$

Scenario 3	new FF.CLV model				New Customer #1
Volume in contract = 125,000 kg					
Adjusted Net Profit per Kg = 0.20 €					
Acquisition Costs = 5,000 €					
i = 15%					
r = 95%					
t = 12 months					

$$\frac{(\ 25{,}000\ )\times 0.95}{(\ 1\ +\ \frac{0.15}{12}\ )^{12}}\ -\ 5{,}000\,€\ =\ 15{,}461\,€$$

Adjusted price with the 4 cents
0.04 € x 125,000 Kg

Figure XVIII – Traditional CVL model *versus* CLV model using price "sharpening" as acquisition cost

As an example, figure XVIII presents two situations applying traditional CLV model *(scenario 1 and 2)*; and a third situation applying the proposed FF.CLV model where price "sharpening" is accounted as acquisition cost *(scenario 3)*:

Scenario 1 represents the average net profit of 20 cents per customer, and for these exercise, it's also considered an average volume of 100 tons per customer.

In *scenario 2*, to acquire **new customer #1**, the commercial department did a price reduction of 4 cents. With 25% more volume when applying the traditional CLV model **new customer #1** value is the same as existing customers' value mentioned in *scenario 1*, meaning: the expected customer revenue for the upcoming 12 months, *for scenario 1 and scenario 2* is **16,369.00** EUR.

Scenario 3 represents the author proposal to adapt the Acquisition Costs driver from tradition CLV model to the adapted FF.CLV model. FF.CLV model

considers that when a firm needs to "go lower" with existing average price to acquire a new customer, it should be considered customer's acquisition investment.

In *scenario 3*, using FF.CLV model, it's proposed to level the price difference to existing price average, from 16 cents to 20 cents; inputting the 4 cents difference (multiplied by the contracted volume) as acquisition cost. Evidently, these adjustments are for Farm Frites internal customer value assessment only.

In the original CLV model approach, as shows *scenario 2*, price differences are processed in CLV model's margin driver. In this approach, ***New customer #1*** is being classified as having the same CLV value as existing customers – even when delivering less 20% of revenue per kilo.

The new FF.CLV objective is to become a decision making support. Considering price "sharpening" as an initial investment allows management to have better assessment about the effort done to acquire each new customer. This is particularly relevant when deciding, for example, which customers to support with future marketing investments.

In the case of a new customer paying the same price or a higher price than the average price from existing cohort of customers, the positive price difference will be reflected in FF.CLV customer margin driver. No adjustments in acquisition costs driver are required.

4.6. FF.CLV MODEL APPLICABILITY

The FF.CLV as a metric and, as a managerial tool needs to be "user friendly". This means neither assumptions nor drivers' customization should deliver complexity to the model.

The author considers that new FF.CLV is not more complex that simple CLV model, even when considering customization adjustments done into its drivers. All data required to "feed" the adapted model's drivers is currently available in Farm Frites, easily delivered in a spreadsheet where all calculations can be performed.

The FF.CLV drivers: Discount Rate and Customer Retention Rate will be defined once every year. Discount Rate is a top management directive, and Customer Retention Rate reflects previous period defection rate.

While Discount Rate is the same for all countries, the Retention rate is calculated for each country, being the same for all customers in that country. As mentioned, and as a generic assumption, FF.CLV lifetime component is 12 months. However, when a new customer agrees with Farm Frites a different contract length, the new contract period should be considered for that customer's FF.CLV.

The average revenues value per kilo, to assess new contract price differences (acquisition costs), should be revised every quarter to account for any deviation coming from bias in contract performance.

Although the optimal option would be to perform this analysis at sku level, the author acknowledges it would require moving from a spreadsheet to a database platform to support data handling. Therefore, the author recommends performing average revenues per kilo at product category level – updated every quarter to become price indexes for new contracts.

The author considers using the FF.CLV model in a monthly basis, updating each customer value with its current contract performance.

4.7. COMPLEMENTING FF.CLV MODEL ANALYSIS

The author considers FF.CLV model implementation as a considerable move forward in Farm Frites' customer value assessment. Its implications on daily customer's relationship management can improve firms' revenues just by investing the same money in the right customers, or by "firing" customers, which delay in delivering profitability.

Although, being a resourceful tool and simply to apply, this model simplicity also implies some limitations.

In this document, the author already presented the "value drivers" that have some cause effect in different value creation among the three markets from Southern Europe.

The new FF.CLV will output the customer lifetime value for each Farm Frites customer. However, from the relationship management point of view there are other assessments that need to be accounted to properly evaluate a customer.

As figure XIX shows, there are kilos worthing more than others. The author considers that this qualitative input ought to complement FF.CLV analysis.
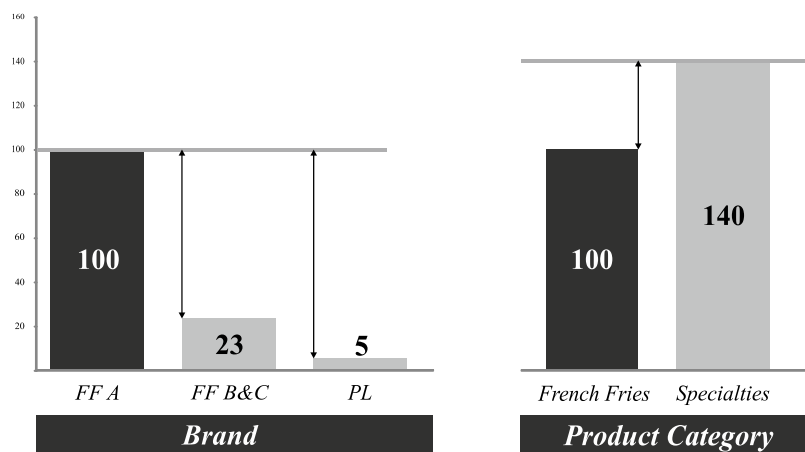
Figure XIX– Indexed average kilo net profit per Brand and per Product Category

Index 100 in Brand = FF A / Index 100 in Product Category = French Fries

Customers from Portugal; Spain and Italy / Source: Farm Frites. Sales from [Jan.11:Mar.12]

This document objective is to develop a tool able to properly assess customer value, and that means evaluating customers' relationship with Farm Frites.

However, the relationship value for Farm Frites of each customer might not be the same, even when FF.CLV model outputs similar value, as it can be seen in figure XX.

Three different customers with same FF.CLV

r = 95%				*Legend:*		
i = 15%				*FF A - Farm Frites A quality brands*		
t = 12 months				*FF B&C - Farm Frites B and C quality brands*		
AC = No acquisition costs				*PL - Customer label or private label*		

Customer # 1						
	FF A	*FF B&C*	*PL*	*French Fries*	*Specialties*	**FF.CLV**
Volume in Kg	105,350	12,540		111,350	8,524	
Net Profit/Kg	0.300 €	0.069 €		0.262 €	0.390 €	**26,575 €**
Net Profit	31,606 €	865 €		29,146 €	3,324 €	
Total Revenue		**32,471 €**				

Customer # 2						
	FF A	*FF B&C*	*PL*	*French Fries*	*Specialties*	**FF.CLV**
Volume in Kg	32,541	218,428		234,536	16,433	
Net Profit/Kg	0.280 €	0.107 €		0.113 €	0.365 €	**26,575 €**
Net Profit	9,111 €	23,360 €		26,473 €	5,998 €	
Total Revenue		**32,471 €**				

Customer # 3						
	FF A	*FF B&C*	*PL*	*French Fries*	*Specialties*	**FF.CLV**
Volume in Kg	17,465		645,623	645,623	17,465	
Net Profit/Kg	0.342 €		0.041 €	0.041 €	0.342 €	**26,575 €**
Net Profit	5,973 €		26,498 €	26,498 €	5,973 €	
Total Revenue			**32,471 €**			

Figure XX – Three different customers with same FF.CLV.

Example based on existing Farm Frites customers' morphology

Figure XX shows three different customers, where the FF.CLV model outputted the same value.

Customer #1 is a frozen products wholesaler buying Farm Frites 'A' branded products. Occasionally this customer also buys 'B' branded products to supply its end-users requiring this kind of proposition of value, which counts only for a tenth part of its total volume. Although the volume of added-value products, i.e., specialties is the smallest of the three customers, it's also the one with the higher revenue per kilo for this product category. ***Customer #1*** has its own sales team which every day sells and promotes Farm Frites brand. This kind of customers behave as Farm Frites "branches" building brand awareness and extending Farm Frites proposition of value to end-users.

Customer # 2 it's a local distributor, also with a small sales team. Kotler and Keller (2012) classify this type of customer as "*Borkers and Agents*". This customer supplies caterers and food preparation central kitchens. Those types of end-users are usually bounded to fixed price menus, which impel them to seek for lower priced products. Hence, *customer # 2* is quite sensible to potato price variations, particularly when abundant potato crops push down the price of potatoes increasing *customer # 2* vulnerability to competitors' low price offers. Although, from the three customers it's the one buying higher volume of specialties, and for a fairly net profit, the main proposition of value *customer # 2* expects from Farm Frites is getting the most competitive prices to allow him keeping its end-users.

Customer # 3 it's a regional frozen vegetables producer. This customer requested Farm Frites to pack French fries 10 mm under its own label, with product specifications close to Farm Frites 'B' brands. This customer uses its current frozen distribution channels to distribute this one reference of French fries as complement to its vegetables' product portfolio. *Customer # 3* is buying also some Farm Frites specialties, mainly because annual volume is not enough to reach the minimum quantity required to develop its own label. For *customer # 3*, Farm Frites counts as production outsourcing. Existing relationship is more of a production/logistic supplier than a commercial partnership. In fact, in some areas is not unusual to verify direct competition from this customer's label towards Farm Frites "B" labels.

In the presence of these three examples, it's acceptable to admit these customers' relationships do not have the same "value" to Farm Frites.
The author recalls literature review, where the most valuable customer's asset is the relationship a firm keeps with its customers. Not only what the existing partnerships have provided in the past, but mainly what future revenues can be achieved from firm's customer portfolio.

Although, CLV models already take in account "value" drivers for future revenues, by weighting customer margin with firm's performance – transposed into the retention rate, and weighting also the cost of money. CLV models do not "care" about how customers' revenues are composed, as it was demonstrated in figure XX. In other words, the "value" drivers are not taken in consideration individually – only its combined result.

4.8. FARM FRITES BUSINESS' VALUE DRIVERS

Together with the FF.CLV model, the author infers that it's required a secondary and complementary scoring model to objectively add more qualitative significance to FF.CLV outputs. For that propose the author suggest to weight individually the mentioned "value" drivers which are "treated" in bundle by the FF.CLV model.

Concerning those "value" drivers, the author identified three categories:

a) ***Brand related***

b) ***Product category value related***

c) ***Customer Share Of Wallet related***

The first two categories were presented in figure XX, and are drivers easily to assess and to measure, since the required data is available from Farm Frites' internal sales figures.

Concerning brand related drivers, the author considers three "value" drivers:

- *Farm Frites A brands* (FF A)

- *Farm Frites B and C brands* (FF B&C)

- *Customer Label or Private Labels* (PL)

Brand related drivers have three intrinsic "values": the main one is related to <u>brand intangible asset</u>. As shown in figure XX, the author considers ***customer # 1*** relationship as the most valuable of the three examples, since this customer promotes Farm Frites branded products, behaving as an extension of Farm Frites' structure. Implicitly, this type of customer's relationship is linked to another intrinsic "value" – <u>loyalty:</u> It's acceded that is easier to ***customer # 3*** and in some extension also to ***customer # 2*** switching to another supplier than is for ***customer # 1***.

Loyalty can be assessed as a good "insurance policy" to secure future revenues from existing customers' relationships. The third intrinsic "value" is the <u>kilo revenue difference,</u> which although being "seized" in the FF.CVL model, each driver weight is not visible neither its contribution is accounted individually. The author needs to make the observation that Farm Frites 'A' brands includes French fries and also Specialties. The same is valid for 'B' brands, although with much lower percentage.

Concerning product category related drivers, the author considers two "value" drivers:

- *French Fries*

- *Specialties*

Product category related drivers have two intrinsic "values": the main one is the considerable <u>revenue difference per kilo</u> between these two product categories. As it happens with the brand related drivers, revenues contributions are already reflected in the customer's margin FF.CLV component, but not how that value is composed.

The other intrinsic "value" is related to <u>loyalty</u>: it's easier to retain a customer buying several references than a customer buying only one reference. This cause effect is even more amplified if acknowledged that French fries, as product, has less distinguishing attributes than specialties, i.e., specialties can de differentiated from competition by ingredients combination; cutting shape; mashed potato shapes, etc., French fries ingredients are potato and vegetable oil – where potato varieties change during the season and oil blends it's a detail only valorized by a minority of customers. This means that in reality it's quite easy to change from French Fries supplier without consumers in a restaurant noticing the difference. Concerning specialties, it's more difficult to substitute since product's taste and shape depend considerably from more variables.

Remains to present the *Share Of Wallet* (SOW) driver, and also the more difficult to assess with accuracy.

It's not easy for a firm to get from its customers the value of its supplier share. Part of customer's negotiation "maneuverability" relies on not disclosing this information.

However, although not feasible to assess a precise value, Farm Frites knows with considerable level of certainty if its SOW in a customer is less than half of the its volume; or is more than half; or if Farm Frites is its exclusive potato products supplier. This information is gathered and provided by Farm Frites customer's account managers, and updated when customer's SOW status shifts.

SOW related drivers:

- *SOW < 50% of customer volume*
- *SOW >= 50% of customer volume*
- *SOW = 100% of customer volume*

SOW is used as segmentation criteria besides its usual function as metric. Its intrinsic value relies on identifying loyalty behavior patterns in these three customer's cohorts, in other words – segmentation by retention rates.

All presented "value" drivers have one common denominator: customer loyalty. The values passing through these drivers are the retention rates preformed by Farm Frites in each driver. Figures XXI, XXII, and XXIII refer to retention rates per "value" driver in each market. The different tables on those figures concern to volume and to value from different periods.

As an example, Figure XXI in Table PT.1, referring to sales volume verified for the last 4 years, shows that in the Portuguese market, Farm Frites got 81% of retention rate in *Farm Frites 'A' branded* references, quite below from the 98% obtained in the *Private label* value driver[17]. In the SOW segments, can be verified that Farm Frites never lost a customer while being its exclusive supplier.

The retention rates preformed in each "value" drivers are the main criteria to "feed" the complementary scoring model.

This approach in author's opinion is from the most significance, as this document aims to assess customer's value being customer's relationship its most important variable. Thus, it's acceded that loyalty, transcribed in retention rates, is essential to become the major focus of this case study.

For that matter, using a scoring procedure based on past drivers' performance, rather than an eventual ad-hoc weighting ranking, brings more significance and more reliability to model's outputs. It will be how each country preformed in retaining customers at drivers'

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[17] - The apparent paradox in this market results from the fact the biggest customers are private label customers, and its number relatively small. The large volume linked to the fact there was no customer defection gives a very high retention rate.

level, which will weigh the scoring of every customer – complementing presented FF.CLV model output.

The author considers that those drivers performance should be weighted based in value, however in figures XXI, XXII and XXIII it's also considered the volume performance, since currently detailed data on value is only available as from January 2011. Concerning volume, available data goes back to January 2008. For this reason the author, and for this exercise only, included the "value" drivers volume performance to consider them as a possible input. Mainly because using four years of sales increases sample statistical significance.

Portuguese Market
Volumes and Sales Revenues: Retention analysis versus "value" drivers

Table PT.1	Last 51 months [Jan.2008:Mar.2012] - VOLUME vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Vol.
Loyal Customers	55%	39%	93%	74%	47%	87%	31%	82%	70%
New Customers	26%	37%	6%	15%	35%	5%	43%	18%	18%
"One Time" Customers	0%	0%	0%	0%	0%	0%	0%	0%	0%
Business Kept	**81%**	**77%**	**98%**	**89%**	**82%**	**93%**	**74%**	**100%**	r 88%
Business Lost	19%	23%	2%	11%	18%	7%	26%	0%	12%
Weight in the group	50%	7%	43%	85%	15%				

Table PT.2	Last 15 months [Jan.2011:Mar.2012] - VOLUME vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Vol.
Loyal Customers	43%	53%	91%	76%	35%	88%	33%	55%	70%
New Customers	54%	47%	9%	23%	61%	11%	66%	45%	29%
"One Time" Customers	1%	0%	0%	0%	0%	0%	0%	0%	0%
Business Kept	**98%**	**100%**	**100%**	**100%**	**96%**	**99%**	**99%**	**100%**	r 99%
Business Lost	2%	0%	0%	0%	4%	1%	1%	0%	1%
Weight in the group	37%	7%	56%	85%	15%				

Table PT.3	Last 15 monhts [Jan.2011:Mar.2012] - VALUE vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Value
Loyal Customers	66%	56%	91%	80%	58%	90%	52%	58%	77%
New Customers	31%	44%	9%	19%	37%	8%	46%	42%	21%
"One Time" Customers	1%	0%	0%	1%	0%	1%	0%	0%	0%
Business Kept	**98%**	**100%**	**100%**	**100%**	**96%**	**99%**	**98%**	**100%**	r 99%
Business Lost	2%	0%	0%	0%	4%	1%	2%	0%	1%
Weight in the group	42%	9%	48%	85%	15%				

Figure XXI – Portuguese customers' retention analysis versus "value drivers"

Spanish Market
Volumes and Sales Revenues: Retention analysis versus "value" drivers

Table ES.1	Last 51 months [Jan.2008:Mar.2012] - VOLUME vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Vol.
Loyal Customers	79%	29%	38%	55%	79%	64%	43%	100%	58%
New Customers	5%	52%	40%	26%	11%	26%	24%	0%	24%
"One Time" Customers	0%	2%	1%	1%	0%	1%	0%	0%	1%
Business Kept	**84%**	**84%**	**79%**	**81%**	**91%**	**91%**	**67%**	**100%**	*r* **83%**
Business Lost	16%	16%	21%	19%	9%	9%	33%	0%	17%
Weight in the group	54%	23%	24%	87%	13%				

Table ES.2	Last 15 months [Jan.2011:Mar.2012] - VOLUME vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Vol.
Loyal Customers	86%	18%	31%	41%	75%	48%	33%	100%	45%
New Customers	11%	75%	53%	49%	22%	49%	47%	0%	46%
"One Time" Customers	1%	1%	0%	0%	0%	0%	0%	0%	0%
Business Kept	**97%**	**93%**	**83%**	**91%**	**98%**	**98%**	**80%**	**100%**	*r* **92%**
Business Lost	3%	7%	17%	9%	2%	2%	20%	0%	8%
Weight in the group	34%	34%	31%	88%	12%				

Table ES.3	Last 15 monhts [Jan.2011:Mar.2012] - VALUE vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Value
Loyal Customers	90%	16%	33%	55%	83%	63%	50%	100%	63%
New Customers	10%	77%	52%	40%	15%	35%	38%	0%	33%
"One Time" Customers	0%	2%	0%	1%	0%	0%	2%	0%	1%
Business Kept	**100%**	**94%**	**86%**	**95%**	**98%**	**98%**	**90%**	**100%**	*r* **96%**
Business Lost	0%	6%	14%	5%	2%	2%	10%	0%	4%
Weight in the group	60%	25%	15%	72%	28%				

Figure XXII – Spanish customers' retention analysis versus "value drivers"

Italian Market
Volumes and Sales Revenues: Retention analysis versus "value" drivers

Table IT.1	Last 51 months [Jan.2008:Mar.2012] - VOLUME vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Vol.
Loyal Customers	88%	59%	1%	86%	84%	69%	96%	96%	85%
New Customers	2%	31%	98%	2%	10%	10%	1%	4%	5%
"One Time" Customers	1%	1%	0%	1%	0%	1%	0%	0%	1%
Business Kept	**90%**	**92%**	**99%**	**88%**	**94%**	**80%**	**97%**	**100%**	*r* **91%**
Business Lost	10%	8%	1%	12%	6%	20%	3%	0%	9%
Weight in the group	91%	8%	1%	60%	40%				

Table IT.2	Last 15 months [Jan.2011:Mar.2012] - VOLUME vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Vol.
Loyal Customers	93%	39%	0%	90%	72%	61%	97%	91%	82%
New Customers	4%	60%	100%	6%	27%	33%	2%	9%	16%
"One Time" Customers	1%	0%	0%	1%	0%	1%	0%	0%	1%
Business Kept	**98%**	**99%**	**100%**	**97%**	**99%**	**96%**	**99%**	**100%**	*r* **98%**
Business Lost	2%	1%	0%	3%	1%	4%	1%	0%	2%
Weight in the group	82%	14%	4%	53%	47%				

Table IT.3	Last 15 monhts [Jan.2011:Mar.2012] - VALUE vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Value
Loyal Customers	91%	43%	0%	88%	80%	54%	97%	90%	84%
New Customers	5%	55%	100%	8%	18%	36%	2%	10%	13%
"One Time" Customers	1%	0%	0%	1%	0%	3%	0%	0%	1%
Business Kept	**97%**	**98%**	**100%**	**97%**	**98%**	**92%**	**99%**	**100%**	*r* **97%**
Business Lost	3%	2%	0%	3%	2%	8%	1%	0%	3%
Weight in the group	88%	9%	3%	51%	49%				

Figure XIII – Italian customers' retention analysis versus "value drivers"

4.9. CUSTOMER COMPLEMENTARY SCORING MODEL - FF.CCS[18]

The author proposes a Complementary Customer Scoring (FF.CCS) model, that will infer a retention rate for each "value" driver, instead of a generic retention rate as is inputted in CLV models.

The new FF.CCS model includes the principle that some "Euros" are more valuable than other.

By treating each business "value" driver independently, namely its retention rate, the FF.CCS model is assessing how Farm Frites performs in each driver to create value.

As shown in figure XX, becoming a supplier of reference in customer's private labels may result in the same revenues for the upcoming 12 months. However, for Farm Frites equity, especially for its brand equity, such status has a significantly lower value than becoming a major player with its own branded products.

FF.CCS calculates Farm Frites' net profit in each of the "value" drives, multiplying it by the retention rate verified on these same drivers. Although for the SOW drivers' group this procedure is enough, for the Brand and Product Category drivers' it's required, in addition, to compute each driver's different weight within its group.

To exemplify the FF.CCS model, figure XIV shows its applicability to *Customer #1* example presented in previous figure XX. For this exercise, *Customer # 1* it's a Spanish customer, and consequently was selected table ES.3 from figure XXII – referring to value retention rates verified in the Spanish market for 15 months.

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[18] - FF.CCS: abbreviation for FARM FRITES CUSTOMER COMPLEMENTARY SCORING

FF.CCS *Model application*

Table ES.3	Last 15 months [Jan.2011:Mar.2012] - VALUE vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Value
Loyal Customers	90%	16%	33%	55%	83%	63%	50%	100%	63%
New Customers	10%	77%	52%	40%	15%	35%	38%	0%	33%
"One Time" Customers	0%	2%	0%	1%	0%	0%	2%	0%	1%
Business Kept	**100%**	**94%**	**86%**	**95%**	**98%**	**98%**	**90%**	**100%**	**r 96%**
Business Lost	0%	6%	14%	5%	2%	2%	10%	0%	4%
Weight in the group	**60%**	**25%**	**15%**	**72%**	**28%**				

r = 95%		**Legend:**
i = 15%		*FF A - Farm Frites A quality brands* SOW - Share of wallet
t = 12 months		*FF B&C - Farm Frites B and C quality brands*
AC = No acquisition costs		*PL - Customer label or private label*

Customer # 1	Using **FF.CLV** *model to assess customer value*								
	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CLV**
Volume in Kg	105,350	12,540		109,366	8,524				
Net Profit/Kg	0.300 €	0.069 €		0.263 €	0.438 €		☑		
Driver's Net Profit	31,605 €	865 €		28,737 €	3,734 €				**26,575 €**
Sum of net profit							32,471 €		

Customer # 1	Using **FF.CCS** *model to assess customer value*								
	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
Driver's Net Profit	31,605 €	865 €		28,737 €	3,734 €		32,471 €		
Business Kept	100%	94%	86%	95%	98%		90%		
Weight in the group	60%	25%	15%	72%	28%				**68,961**
SCORING	**18,823**	**206**	**0**	**19,765**	**1,023**		**29,143**		

Figure XIV – FF.CCS application example. Data from figure XX, and from figure XXII - table ES.3.

Analyzing figure XIV, in table ES.3 is highlighted two results: retentions rates for each driver, and (with the exception of SOW) the weight those drivers have in its own group.

FF.CCS multiplies these results with each driver net profit, outputting a score for each driver.

For example, driver "**FF A"** score results from:

Driver Net Profit × *Driver Retention Rate* (Business Kept) × *Driver's Weight in the group*

– In figure XIV "**FF A"** is: **31,605 € × 100% × 60% = 18,823**.

"**SOW**" drivers, as mentioned before, have no group weighting because customers can only exist in one of the three, not simultaneously. "**SOW**" drivers' scoring is achieved from:

Driver Net Profit × *Driver Retention Rate* (Business Kept)

− In figure XIV it results from: **31,605 € × 90% = 29,142.**

As demonstrated, *Customer # 1* driver's net profits (margin) are not multiplied by firm's global retention rate, but by retention rates preformed by the company in each driver.

The total FF.CCS score for *Customer # 1* is the sum of all drivers' individual scorings

The group weighting in the first two drivers' groups, results from the fact that beyond its intrinsic values, each driver contributes differently to the overall firm's revenues, bringing in this way each market (country) business environment to FF.CCS model.

For example, in figure XIV referring to Spanish market drivers' performance, 60% of sales net profit is obtained with "FF A" brands. If a new Spanish customer contracts with Farm Frites to buy more than 60% (driver's average contribution for that market), the new customer's score will increase, since is performing above "FF A" average.

Next figure (figure XV) presents the 3 customers examples from previous figure XX. The same three customers are assessed by the FF.CLV model and by the FF.CCS model.

FF.CCS *Model application - 3 customers' example*

Table ES.3	Last 15 months [Jan.2011:Mar.2012] - VALUE vs Drivers								
Business Status	FF A	FF B&C	PL	French Fries	Specialties	SOW < 50%	SOW >= 50%	SOW = 100%	% Total Value
Loyal Customers	90%	16%	33%	55%	83%	63%	50%	100%	63%
New Customers	10%	77%	52%	40%	15%	35%	38%	0%	33%
"One Time" Customers	0%	2%	0%	1%	0%	0%	2%	0%	1%
Business Kept	100%	94%	86%	95%	98%	98%	90%	100%	*r* 96%
Business Lost	0%	6%	14%	5%	2%	2%	10%	0%	4%
Weight in the group	60%	25%	15%	72%	28%				

r = 95%
i = 15%
t = 12 months
AC = No acquisition costs

Legend:
FF A - Farm Frites A quality brands   *SOW - Share of wallet*
FF B&C - Farm Frites B and C quality brands
PL - Customer label or private label

Customer # 1	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CLV**
Volume in Kg	105,350	12,540		109,366	8,524				
Net Profit/Kg	0.300 €	0.069 €		0.263 €	0.438 €				
Driver's Net Profit	31,605 €	865 €		28,737 €	3,734 €		☑		**26,575 €**
Sum of net profit							32,471 €		

Customer # 2	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CLV**
Volume in Kg	32,541	218,428		234,536	16,433				
Net Profit/Kg	0.280 €	0.107 €		0.113 €	0.365 €				
Net Profit	9,111 €	23,360 €		26,473 €	5,998 €	☑			**26,575 €**
Total Revenue						32,471 €			

Customer # 3	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CLV**
Volume in Kg	17,465		645,623	645,623	17,465				
Net Profit/Kg	0.342 €		0.041 €	0.041 €	0.342 €				
Net Profit	5,973 €		26,498 €	26,498 €	5,973 €			☑	**26,575 €**
Total Revenue								32,471 €	

Customer # 1	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
SCORING	18,823	206		19,765	1,023		29,143		**68,961**

Customer # 2	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
SCORING	5,427	5,565		18,208	1,644	31,810			**62,653**

Customer # 3	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
SCORING	3,557		3,392	18,225	1,637			32,471	**59,281**

Figure XV – 3 customers value assessment with FF.CLV and FF.CCS.

Data from figure XX, and from figure XXII - table ES.3.

Although, and as seen previously, FF.CLV value is the same for all customers, the complementary customer scoring model – FF.CCS outputs different values for each customer.

When applying the FF.CCS model for the Spanish market, ***Customer # 1*** is the one with higher score, even when belonging to customers' cohort with the smallest retention rate – the SOW equal or greater than 50%. This does not mean that, if Farm Frites' share of wallet in ***Customer # 1*** were for example less that 50%, this customer would be more profitable or would had more value for Farm Frites.

This means that for the last 15 months, Farm Frites were less able to retain customers while being their main supplier. The fact that *Customer # 1* is in that segment, unless Farm Frites endeavors efforts to increase customers' tenure within that market segment in Spanish market, *Customer # 1* revenue will be scored with a 10% risk of defecting associated to SOW equal or greater than 50%.

Figure XV also demonstrates that *Customer # 3* might be considered a "good customer" from the production point of view since is "filling up" production capacity with twice the combined volume of *Customer # 1* and *Customer # 2*. However, from the point of view of customer relationship value, *Customer # 3* is the one with less interest for Farm Frites in the Spanish Market, while a supplier of reference in branded potato products.

The mentioned examples reinforce author's decision of performing customer's value assessment only at country level. Weighting the "value" drivers when its inputs do not reflect strictly the business environment from each market, it would null any output from the proposed models.

A good example showing the importance of this decision is presented in figure XVI, where as an exercise of hypothesis, two brand "value" driver's weight (FF A and PL) were switched.

FF.CCS *Model application - 3 customer example with different drivers weighting*

Table ES.3	Last 15 months [Jan.2011:Mar.2012] - VALUE vs Drivers								
Business Status	**FF A**	**FF B&C**	**PL**	**French Fries**	**Specialties**	**SOW < 50%**	**SOW >= 50%**	**SOW = 100%**	**% Total Value**
Loyal Customers	90%	16%	33%	55%	83%	63%	50%	100%	63%
New Customers	10%	77%	52%	40%	15%	35%	38%	0%	33%
"One Time" Customers	0%	2%	0%	1%	0%	0%	2%	0%	1%
Business Kept	**100%**	**94%**	**86%**	**95%**	**98%**	**98%**	**90%**	**100%**	***r* 96%**
Business Lost	0%	6%	14%	5%	2%	2%	10%	0%	4%
Weight in the group	**15%**	**25%**	**60%**	**72%**	**28%**				

Customer # 1	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
SCORING	**4,719**	**206**		**20,123**	**911**		**29,142**		**55,101**

Customer # 2	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
SCORING	**1,360**	**5,565**		**18,208**	**1,644**	**31,810**			**58,587**

Customer # 3	FF A	FF B&C	PL	Fr. Fries	Specialties	SOW<50%	SOW>=50%	SOW=100%	**FF.CCS**
SCORING	**892**		**13,635**	**18,225**	**1,637**			**32,471**	**66,858**

Figure XVI – 3 customers value assessment with FF.CLV and FF.CCS, with switched drivers' weight

Data from figure XX, and from figure XXII - table ES.3.

As the hypothesis in figure XVI shows, if Farm Frites in the Spanish market was mainly a private label player, i.e., with 60% of its net profit coming from customers' private labels, and not from Farm Frites' branded products as in figure XV, the most scored customer would be *Customer # 3* instead of *Customer # 1*.

The exercise in figure XVI proves the good reliability of FF.CCS model. It's plausible to assume that with 60% of value coming from private labels, Farm Frites would have its whole local commercial structure formatted to excel as a private labels' supplier. Therefore, having a higher score for this type of customer would be the most preferable FF.CCS output, since private label's customers would be the ones Farm Frites was better prepared to serve.

In addition, if Farm Frites was in line with its competitors, i.e., private labels were counting for 60% of Spanish total market volume. It would increase the importance of keeping and nurturing existing business relationship with *Customer # 3*. Getting higher scores on private labels customers, as a result of FF.CCS model application it would be of great assistance and it would mean complying with its function – a decision support tool.

5. CONCLUSION

This document's propose was to develop a tool to assess Farm Frites' customer value.

From the literature review, the author assessed several models, selecting the CLV model as the base model to apply in a concrete case study: Southern Europe Farm Frites customer portfolio.

Due to business space particularities in which Farm Frites operates, the author decided the simple CVL model would require some modifications.

The new adapted model – the FF.CLV kept the same principles of CLV original model, although "empowered" by its drivers' customization to Farm Frites business model.

Despite the preformed modifications, model applicability was kept simple and functional. It can be applied to any market where Farm Frites is operating, and ready to be used as a managerial tool – from value metric to decision making support.

Nevertheless, regardless of mentioned adaptations on the original CLV model, there are some "value" drivers in current Farm Frites business and determinant to assess the value of customers' relationships, which FF.CLV still treats in an undifferentiated way.

This limitation puts customers with similar CLV value in the same rank, which from the author's point of view it needs to be differentiated at relationship management level.

Hence, the author needed to find a solution to overcome FF.CLV limitations, without increasing its complexity. The solution was to keep this tool good attributes, meaning simplicity and applicability, avoiding further modifications.

Consequently, the author developed a complementary customer scoring model – the FF.CCS model, aiming to cope with the FF.CLV limitations. The FF.CCS model ought to be added as second column in a spreadsheet, functioning as a balanced scoring attribute to FF.CLV model outputs.

The FF.CCS model focuses its analysis on drivers creating "value" in Farm Frites' business sector, processing them individually.

It's expected from this model to perform a more meanful assessment of customer's relationship, dealing with customer loyalty, translated into retention rates.

FF.CCS model scores each customer not by the sum of its revenues, but how customers provide them. The good reliability of FF.CCS model is getting its scores from past Farm Frites performance, not from an experts' panel or from a meeting room's brainstorming. The author feels quite comfortable with this approach, since he considers that any ranking or scoring exercise needs to be correlated as much as possible to what is measured. Any subjective ad-hoc scorecard can easily fall into temptation of serving predefined conclusions.

Using FF.CLV is a giant leap in Farm Frites customer value assessment, since it's a metric able to complement traditional "look backwards" metrics in place.

With the proposed two models, the author expects to improve significantly the return on marketing investments in Southern Europe. Deciding to invest in a customer will be better supported decision, since it will be able to look into "value" as something wider than customer net profit.

The author also expects to increase customer value retention, by identifying customer's performance at "value" drivers' level. It will be possible to "tune up" the commercial strategy for each customer in order to increase its share of wallet, in particular by managing product assortment related investments – aiming added-value assortment cross selling initiatives.

If considered what was mentioned in this document (figure V) referring to correlation between retention and firm's value, and taking in consideration Farm Frites business volume in Southern Europe, the investment done in developing this tool, and the one it requires to implement will be paid by the time the author finishes this line!

Filling in production capacity is always a sensible subject since implicitly it's related to fixed costs to be covered. Every season, this situation creates some pressure over the commercial teams to acquire new costumers, either to cover the volume lost or to compensate sales underperformance from existing customer cohort. Acquiring new customers with volume being the leading target could mean approaching then in a sharp price proposal.

With the proposed FF.CLV model, the author expects to assess new customers' acquisition from a new "value" perspective, weighting its real contribution to current Farm Frites business.

Implementing this tool could imply that next season acquiring value could take a higher rank than the volume acquiring objective.

5.1. FF.CLV and FF.CCS limitations

As mentioned, any attempt of measuring or assessing something is always an exercise of reducing uncertainty. This means that even the most perfect metric is unable to grasp the complete assessment of what it's measured.

The proposed models are arithmetic models. In order to make its use viable, arithmetic models need to compute, preferentially, a limited number or variables. Consequently, it means screening them, and in the best judgment selecting the ones attributing higher significance to the model.

It's reasonable to accede that other drivers could be of good use to the proposed models, and for that reason, some of the reality concerning Farm Frites customer value assessment might pass unnoticed by these models.

The author also acknowledges that FF.CCS model might increase the analysis complexity, mainly in the process of computing its drivers' retention rates. The use of this model requires advanced database and data handling skills, which might difficult its applicability.

5.2. Current Document limitations

This document was supported in the case study of Farm Frites' business model, applied to its three markets in Southern Europe.

All assumptions on value drivers were "Xeroxed" from existing business environment in these countries. It's acceptable that for other markets where Farm Frites is operating, assumptions preceding this document and its conclusions might require to be revised and adapted.

As the author already had the opportunity of mentioning, a complete assessment on customers' relationship would require customers' inputs and their scrutiny on current business relationship with Farm Frites. Improvement in customers' relationship requires understanding which are the important drivers to Farm Frites, but also which are the ones valued by its customers.

5.3. Further Research Directions

The author believes that it would be important to survey current and potential customers to assess which drivers are considered the most important to bring meanful added-value to Farm Frites customers. Conceding in advance, that not all drivers valued by customers necessarily delivers value to Farm Frites, and vice-versa. It would be of significant relevance to assess the "common ground" on this matter, aiming improving customer retention and therefore Farm Frites revenues.

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