

How to find the truth about CLV?

Comparison of Basic approaches to CLV metric

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CLV New Single Average Customer	Marketing approach to CLV	Investment approach to CLV CLV = NPV	Marginal approach to CLV NOCFct = CMct	SaaS approach to CLV
Without taking on account Churn and Discounting LTS – Less than one year	$CLV = -AC + \sum_{t=0}^{LTS} Margin_t$	$CLV = NPV = -IC + \sum_{t=0}^{LTS} NOCF_{ct}$	$CLV = -CAC + \sum_{t=0}^{LTS} CM_{ct}$	$CLV = LTS * AverageGrossProfit$ Compare with CAC
Taking on account Churn But without Discounting LTS – Less than one year	$CLV = -AC + \sum_{t=0}^{LTS} Margin_t * RRt$	$CLV = NPV = -IC + \sum_{t=0}^{LTS} NOCF_{ct} * RRt$	$CLV = -CAC + \sum_{t=0}^{LTS} CM_{ct} * RRt$	$LTV = \frac{ARPA * Gross\ Margin\ \%}{Churn\ Rate}$ Compare with CAC
Taking on account Churn & Discounting LTS – More than one year	$CLV = -AC + \sum_{t=0}^{LTS} \frac{Margin_t * RRt}{(1+r)^t}$	$CLV = NPV = -IC + \sum_{t=0}^{LTS} \frac{NOCF_{ct} * RRt}{(1+r)^t}$	$CLV = -CAC + \sum_{t=0}^{LTS} \frac{CM_{ct} * RRt}{(1+r)^t}$	$LTV = ARPA * Gross\ Margin\ \% * \left(\frac{1}{(1-k)} + \frac{G * k}{(1-k)^2} \right)$ Compare with CAC

CLV - Customer Lifetime Value
 NPV - Net present value
 LTS - Lifetime Span of a Customer in time periods
 AC - Acquisition costs
 RRt - Retention Rate in particular time period
 r - rate of discounting
 CAC - Costs of acquisition a customer
 CMct - Contribution margin by customer per time period
 IC - Investment Costs
 NOCFct - Net Operating Cash Flow by customer per time period

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I suggest you take a look at the diagram.

I hope that for those who are familiar with the CLV metric, the presented logic of comparison looks quite transparent. The scheme gives several options for possible approaches to the perception and calculation of the CLV metric.

In numerous publications about CLV, different authors give different definitions of the metric, use different designations and approaches, depending on the problem being solved, the context and the conceptual apparatus more familiar to them.

In different sources, the same concept of CLV is described from different positions, often using different designations and initial assumptions.

At first, when determining CLV, marketers used the margin metric without delving into the details of its calculation in practice.

Later, cash flow approaches were used, assuming that calculating this indicator technically does not cause difficulties in practice.

Some authors prefer to use the contribution margin metric when analyzing CLV, depending on the context.

The diagram shows all these options for comparison.

I tried to highlight the main thing in all these approaches so that individual preferences in terminology and the choice of designations do not affect the understanding of the essence of the matter.



Basic assumptions about CLV metric:

1. The formula for calculating the CLV metric is based on the NPV calculation method known from investment analysis.
2. Regardless of the preferences in terminology and the chosen designations, the structure of the metric remains the same and corresponds to the logic of calculating the NPV metric.
3. Using the logic $CLV=NPV$, we can consider any client as an investment project from the standpoint of investment analysis.
4. The methods and criteria for making investment management decisions developed on the basis of the NPV metric in investment analysis are fully applicable to the CLV metric.
5. CLV can be considered as an investment model of the Client's life cycle, regardless of what we consider to be the carrier of Value – Margin, CF or Contribution margin by client
6. The key innovation of the CLV metric is the addition to the NPV model of such a factor of customer behavior as the probability of retention (or the inverse metric - the probability of churn).

My conclusions based on the scheme:

1. The factor of customer behavior over time in the form of the probability of churn or retention should be used when calculating the CLV metric, regardless of the duration of the LTS (more or less than a year).
2. With the duration of the client's life cycle and the horizon of managerial decision-making less than a year, the factor of the time value of money is not relevant, it can be ignored and limited to the marginal approach to the CLV metric, taking into account a factor of the probability of churn (retention) only.
3. For the horizon of managerial decisions less than a year, the marginal approach to calculating CLV based on contribution margin by the period remains relevant.
4. CLV for the SaaS model is a special case of a general approach to the NPV-based CLV metric. All the regularities of the CLV approach based on the NPV investment model are applicable to SaaS, taking into account the particular features of the cash flow structure and customer behavior for SaaS practice.
5. The costs of attracting customers (more generally, all marketing costs) can and should be considered not as operating expenses, but as investments, at least from the point of view of management accounting. This refers to the issue of the inappropriateness of financial accounting for the purpose of CLV calculation as well as management decision-making purposes. Now this issue is being actively discussed by management accounting practitioners.
6. In practice, depending on the horizon and the importance of management decisions, it is possible and necessary to use different options for calculating the CLV metric, taking into account, among other things, the complexity of the calculation, risks and the ratio of risk and return.

For those who are just learning the CLV metric I would offer some advices:

(in particular for the purposes of Internet marketing and IT entrepreneurship)

1. Take another look at the presented comparison scheme of approaches to the CLV metric.
2. Try to assume that each of your clients is an investment project.
3. If you have reasons to assume that your average client's LTS will be more than a year (several years), find a good textbook on investment analysis and scroll through it. You will be surprised how much useful information for calculating $CLV=NPV$ and making management decisions can be found even for the simplest NPV models if you consider the client as an investment project.
4. If there are not enough grounds for assuming the LTS duration in a few years (for example, a startup at an early stage, a product new to the market, etc.), then it is not

necessary to complicate the calculations. You can use the formula for CLV without the technic of discounting. Traditional marginal analysis is quite applicable in practice for making short-term management decisions - for example, for assessing and forecasting operating profit on the horizon up to a year.

5. The factor of customer behavior in the future (future retention or churn) should be taken into account in the CLV model only if you have sufficient reliable information (statistics) of customer behavior in the past. If such information is not enough (there is no data), then it is worth starting testing your hypothesis about CLV with the assumption of the constancy of the average contribution margin for the client in the duration of LTS, i.e. verification of break-even and marginal analysis.