



# EVERYTHING YOU NEED TO KNOW ABOUT CUSTOMER LIFETIME VALUE (CLV)

DEMACMEDIA



Sweet Tooth

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# CUSTOMER LIFETIME VALUE (CLV) A.K.A. LIFETIME VALUE OF A CUSTOMER (LTV)

There's a good chance you've heard of Customer Lifetime Value (CLV) or Lifetime Value of a Customer (LTV) before, and an even higher chance that you've never calculated it. CLV (aka LTV) is one of the most valuable metrics in eCommerce/retail, but it's also one of the most confusing.

By knowing CLV, merchants are able to determine the value of each acquired customer to their store in the long run. Merchants also have the advantage and insight to knowing exactly what they should be spending on their advertising to acquire said customers, and which segments to target. The overall goal for merchants and retailers is to increase their CLV. Higher CLV, merchants are better able to retain customers and encourage them to purchase more.

Wouldn't you like to know how much each of your customers are worth to your business, to know their true value? Wouldn't you like to know how much to spend on your advertising given your certain set of customers? Sounds like an impossible thing to measure, or find out - but in reality it is quite possible.

The objective of this ebook is to try and explain a complicated subject in terms that merchants can understand.





## CUSTOMER LIFETIME VALUE DEFINITION

**“CLV is a prediction of how valuable a customer is going to be to your business over a specific period of time”**

Calculating CLV allows you to determine what each of your acquired customers are worth to your online store in the long run.

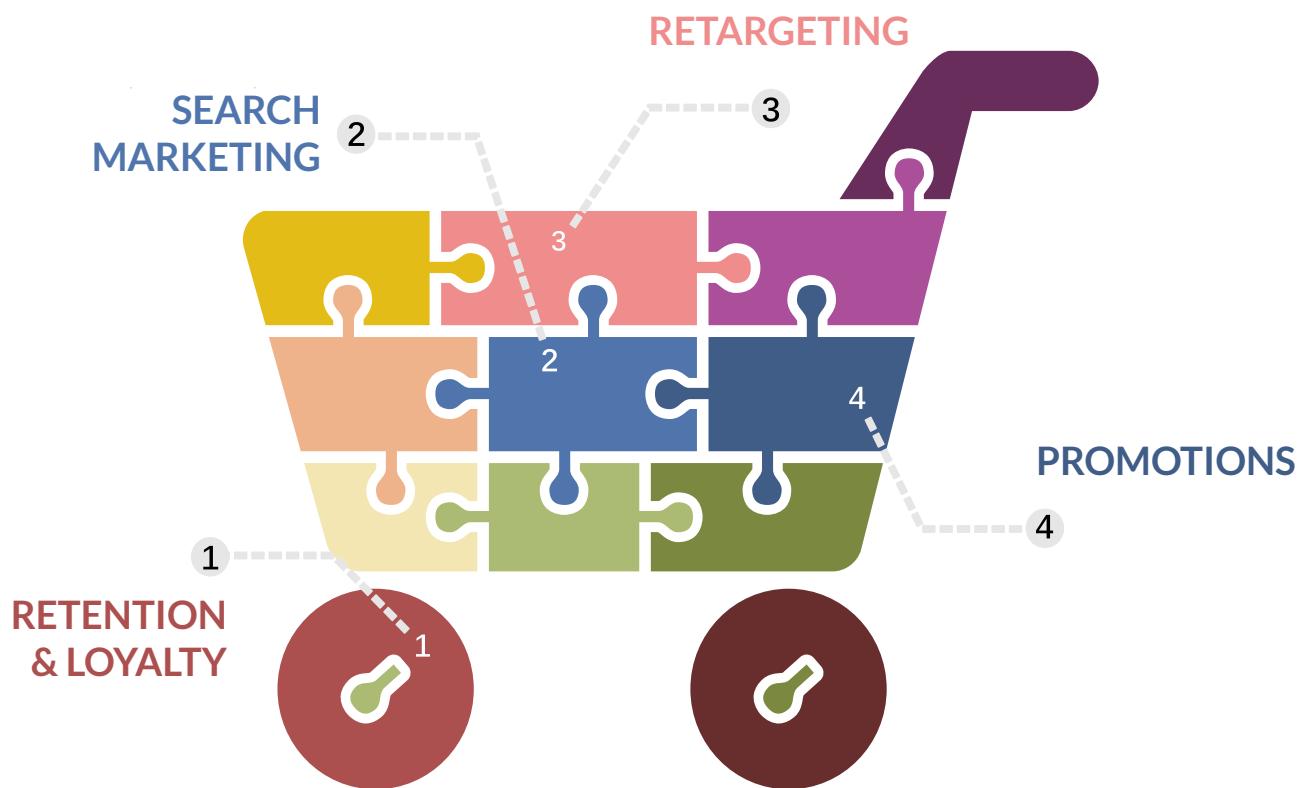
CLV also creates an awareness of how much you should be spending on your marketing efforts, such as retention, SEM, and promotions/discounts. An example of a store's CLV is that an average customer could be worth \$197 over the next 2 years.



# WHY USE CLV?

Once you know the CLV, you are then able to take the guessing work out of SEM, PPC and retargeting advertising campaigns (ie. correctly pricing your AdWords), customer retention spending, as well as what discounts and promotions should really be offered to our customers.

It all comes back to being conscious about your spending, and not overspending on your customers to ensure profitability. For example, if a customer will spend \$200 with you over the course of their life time, you should be able to spend up to \$200 to make sure they stay with you. If you spend more than that, then you unfortunately won't be profitable.

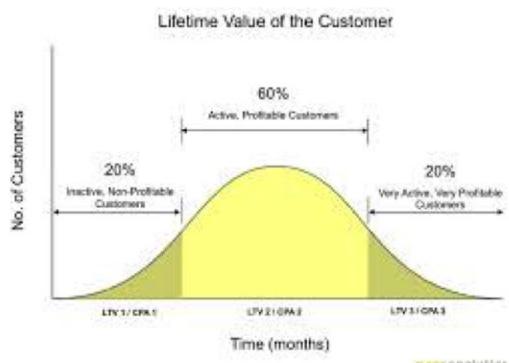


# WHY DOESN'T EVERYBODY USE CLV?

CLV is an incredibly valuable metric, but then why don't all merchants use it? [Sweet Tooth has found that less than 5% of online stores know their CLV](#) or how to calculate it. In our humble opinion, this should be a lot higher.

There are many reasons for not using or calculating CLV, but the biggest is usually that it is complicated and intimidating to determine. [If you Google it](#), CLV calculations involve database queries, excel macros, statistical languages. Unfortunately, the average merchandiser doesn't understand this, and thus CLV stays as something that is inaccessible.

$$CLV = CM_i \left( \frac{R_r}{1 + \delta - R_r} \right) - AC_i$$



$$CLV = \sum_{n=1}^N \frac{(CR_n - C_n) \times R^n}{(1 + d)^n} - AC$$

$$LTV = \int_{x=1}^n \frac{GM_x}{(1+i)^x} - SAC$$

$$LTV = \sum_{x=1}^n \frac{ARPU_x - Costs_x}{(1 + WACC)^x} - SAC$$

$$CLV = GC \cdot \sum_{i=1}^n \frac{r^i}{(1+d)^i} - M \cdot \sum_{i=1}^n \frac{r^{i-1}}{(1+d)^{i-0.5}}$$

But, we want to make CLV **easier** to understand!

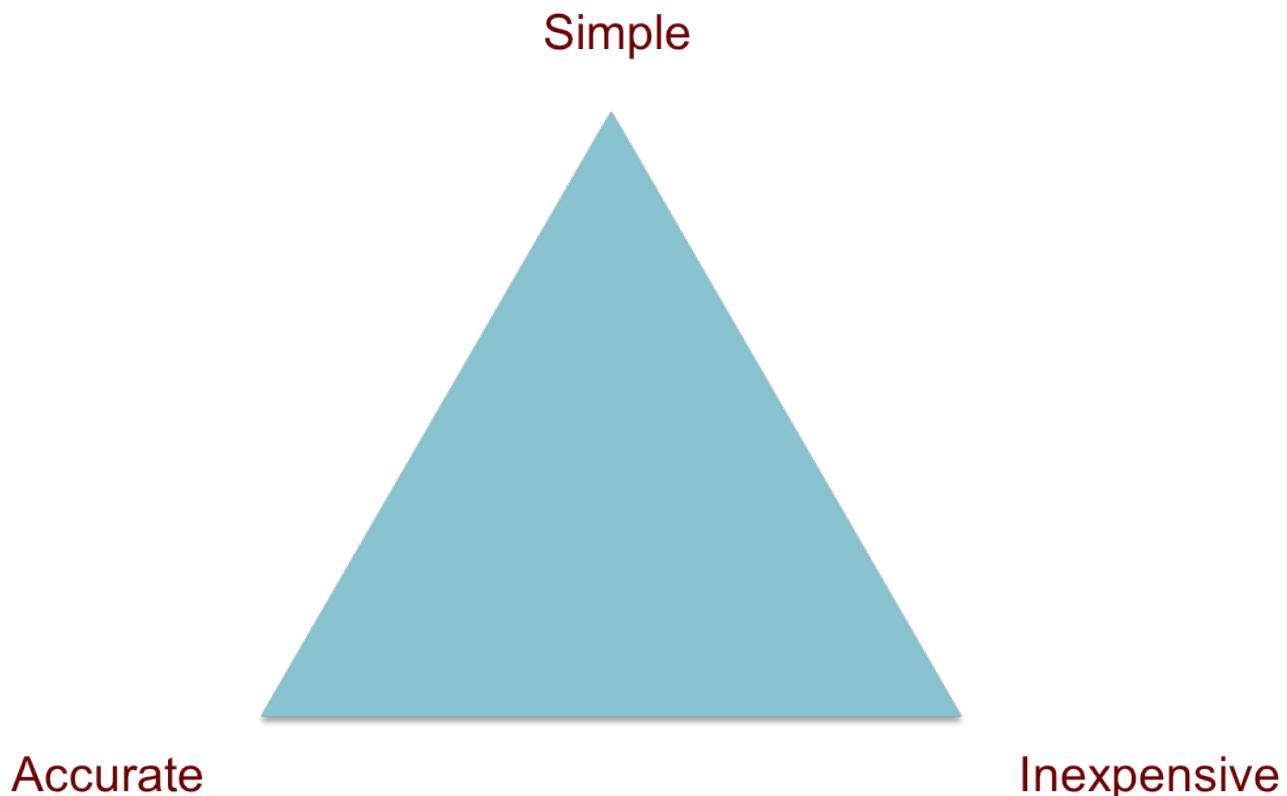
Having some idea of CLV of your customer is better than no idea. Most merchants have NO idea what a customer is worth to them. As a result they don't know how much they should spend per customer to keep them coming back over their lifetime. When you don't know this, you won't know how to adequately spend your marketing dollars!



# CALCULATING CLV

# CALCULATING CLV

A CLV calculation can be thought of as a triangle with each point representing 3 characteristics: **simple, accurate, inexpensive**.

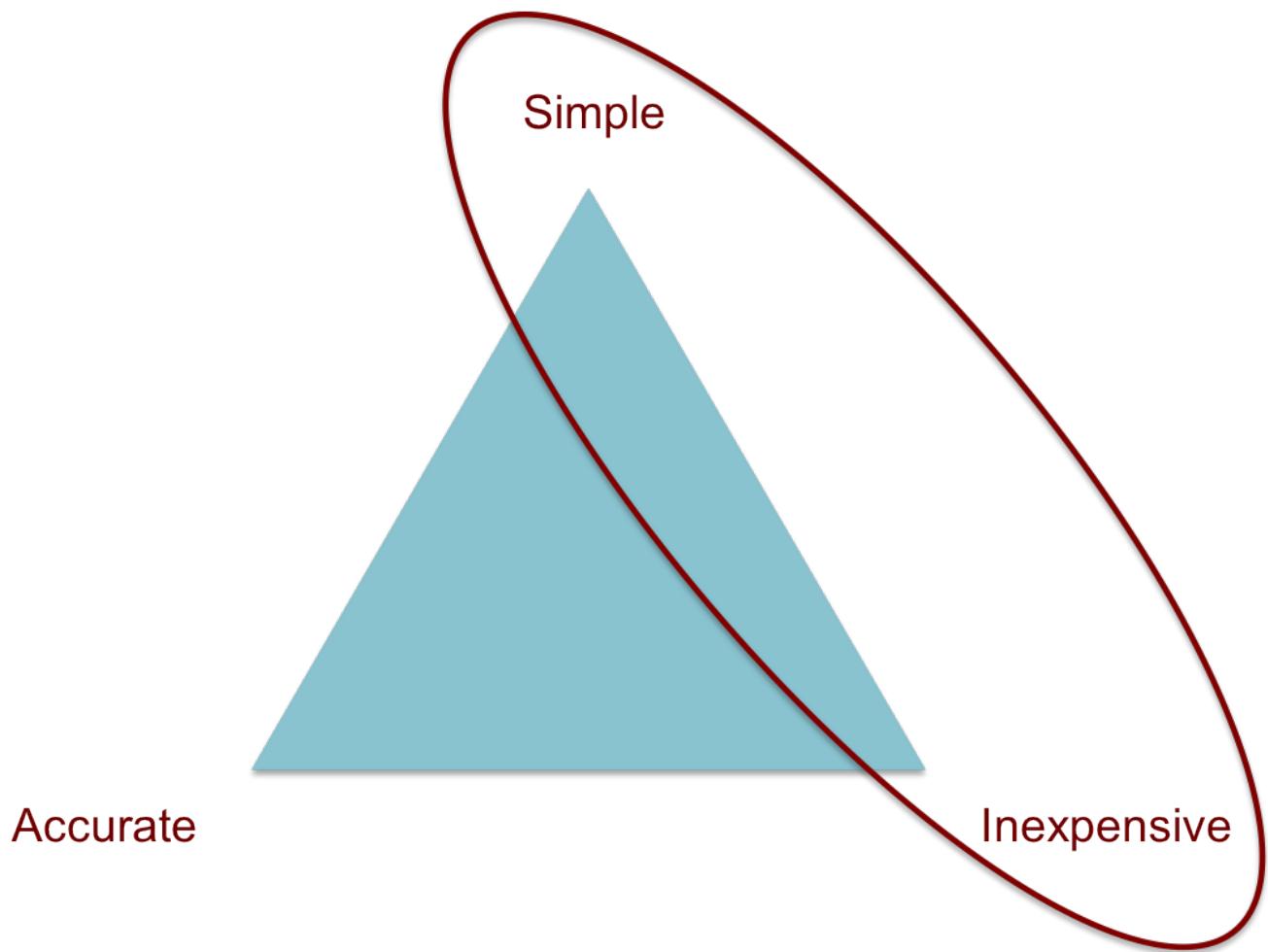


When calculating CLV, you can really only pick two out of the three characteristics. You can have a simple and inexpensive way to do it, but it won't be accurate; it can be inexpensive and accurate calculation, but it won't be simple; or you can have an accurate and simple calculation, but it can be expensive.



CLV: SIMPLE &  
INEXPENSIVE

## CLV: SIMPLE & INEXPENSIVE



If you've never calculated CLV, a REALLY simple way to calculate it is as follows:

$$\mathbf{CLV} = \mathbf{CV} \times t$$

Before jumping too much into CLV, let's first break down the calculation's variables into digestible chunks. Once you have an understanding of how to calculate each variable, then we'll move on to more complicated CLV calculations.



# VARIABLES FOR CLV

Before looking at CLV as a whole, there are a few variables that are needed first in order to put together the whole formula. These are: average order value (aov), purchase frequency (f), customer value (cv) and store's average lifespan (t).

## Average Order Value

Most eCommerce platforms will calculate this for you, if not, it's very accessible within analytics services like [Google Analytics](#). However, if for some reason you don't have average order value readily accessible here is how you calculate it:

$$\text{AOV} = \text{Total Revenue} / \text{Number of Orders}$$

Make sure you're using the same time period when dividing revenue and number of orders!

## Purchase Frequency (f)

Traditionally, CLV uses purchase per week. This might be a little too ambitious, as most stores will only get one order per month, or potentially fewer from each of their customers. So we've translated purchases frequency to be on an annual basis. Purchases frequency is represented here by (f).

$$\text{Purchase Frequency (f)} = \text{Total Orders} / \text{Unique Customers}$$

Again - ensure that you use the same data time period as your average order value metric (usually over a 1 year period).



# VARIABLES FOR CLV

## Customer Value (cv)

Before you have customer lifetime value, you have just customer value. To calculate this you simple take your average order value of your customers and multiply it by their purchase frequency. This will give you their customer value during the time frame you used to calculate your average order value and purchase frequency.

$$\text{Customer Value (cv)} = \text{aov} \times f$$

## Store Average Lifespan (t)

The average lifetime of a customer is how many years (weeks, or months) your average customer will stay and purchase with you before going dormant and stop. The one true and effective way to understand and see this is by looking at your historical data. To do this, you can view the average time between customer purchases.

Once this time period has been established, and then a customer goes more than two standard deviations past that time period, it can then be safe to assume they are no longer a customer. Therefore, the average time a customer goes before reaching that point, is your store's average lifespan (t).

**Store Average Lifespan (t)** = time before a customer goes two standard deviation between average time between purchases (ie. 1 - 3 years)

As a new merchant without much historical data it can be helpful to seek out larger industry players to help create benchmarks or simply use a time period of 1 - 3 years. A (t) value of 1 allows you to look in the immediate future, where a value of 3 is more in the distant future, and is what popular analytics guru [Avinash Kaushik likes to use in his calculations.](#)



# CLV: SIMPLE & INEXPENSIVE - PART 2

Another way to calculate CLV can be done by taking Average Order Value multiply it by the Average Purchases per Year multiplied by the Average Profit Margin. You might be cringing as it's not very accurate, but it gives you a rough approximation over a course of X time.

$$\text{CLV} = \text{AOV} \times \text{APY} \times \text{Profit Margin}$$

This formula can be adjusted for any time period. You can also adjust how much you are spending on ads and retention to make sure you understand what you're spending.

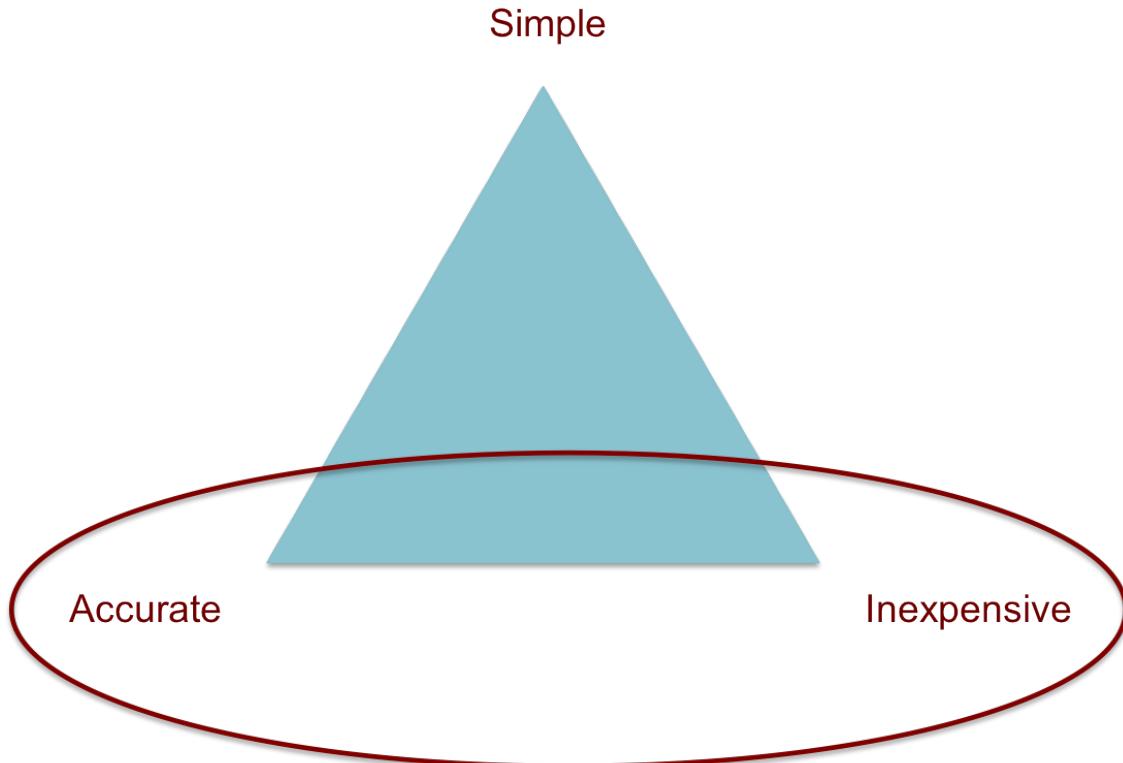
$$\text{Average Purchase per Year} = \frac{\text{Total # of Purchases}}{\text{Total # of Customers}}$$

This formula can be adjusted for any period of time. You can extend it into the future, but it quickly becomes inaccurate. For example compare 2 years vs. 100 years. This model breaks down as you want to get more accurate or extend into the future, as the CLV significantly increases depending on how many years you are multiplying it by, which can be inaccurate.



CLV: ACCURATE &  
INEXPENSIVE

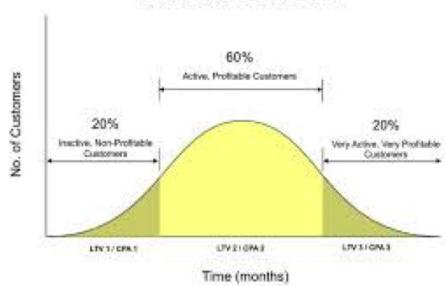
# CLV: ACCURATE & INEXPENSIVE



We're back to the crazy equations! Unfortunately most merchants won't know how to use them, or know how to calculate CLV without technical ability. Sometimes these are useful if you have a very unique business model.

$$CLV = CM_i \left( \frac{R_r}{1+\delta-R_r} \right) - AC_i$$

Lifetime Value of the Customer



$$CLV = \sum_{n=1}^N \frac{(CR_n - C_n) \times R^n}{(1 + d)^n} - AC$$

$$LTV = \int_{x=1}^n \frac{GM_x}{(1+i)^x} - SAC$$

$$LTV = \sum_{x=1}^n \frac{ARPU_x - Costs_x}{(1 + WACC)^x} - SAC$$

$$CLV = GC \cdot \sum_{i=1}^n \frac{r^i}{(1+d)^i} - M \cdot \sum_{i=1}^n \frac{r^{i-1}}{(1+d)^{i-0.5}}$$



# CLV: ACCURATE & INEXPENSIVE

The reason these calculations are complicated is because they include 2 things:

## 1) Average Life Span of a Customer

This is how long a customer goes on average before they never shop with you again. It's very hard to calculate this because sometimes customers shop less frequently than others. So how do you take that information and then move it to a larger set of data? This ebook won't be covering this, however, there are ways to do it. If you're willing to put the time in it's a great way to get accurate data. Just remember, it's very complicated to do!

## 2) Lifespan of a Customer ( $t$ ), Discount Rate, and the Time Value of Money

Another reason for added complexity is due to the discount rate and the time value of money. Money today is worth more than in the future - therefore CLV changes the longer your time periods are.

There are lots of tutorials available on the web if you want to do accurate and inexpensive models. There's even one that calculates CLV using mostly Google Analytics. ([check it out here](#))



# RESOURCES

Additionally, there are many resources out there to assist you in your calculations:

- [RJ Metrics - Customer Lifetime Value](#)
- [Calculating Customer Lifetime Value](#)
- [Tracking Customer Lifetime Value in Google Analytics](#)
- [Kiss Metrics - How to Calculate Lifetime Value](#)
- [Understanding Customer Lifetime Value](#)
- [Example of a CLV Calculation](#)
- [Step by Step Guide to Calculating CLV](#)



CLV: SIMPLE &  
ACCURATE

# CLV: SIMPLE & ACCURATE

Calculating CLV in a way that's simple and accurate is where products and apps come in. For example some companies that have great apps and services for this include:

Vantage Analytics, RJ metrics, KISSmetrics, Custora. These types of products can help you have the key metrics accessible on a regular basis. Merchants should be calculating their CLV every month if possible. Unfortunately, what they see is that merchants don't continue to do it on an on-going basis, they then don't see how it changes, and therefore can't adjust their marketing programs accordingly.



## Calculating CLV - Aggregate vs. Per Customer

CLV can be calculated on an aggregate or per customer basis. Aggregate is when all your customers are worth \$X each, but that's not how things are in reality. You may find out that if you calculate CLV per customer, one customer may be worth more than another. If this is the case, then you should make decisions differently based on those various values for your customers.



WHAT CAN YOU DO  
WITH CLV?

# WHAT CAN YOU DO WITH CLV?

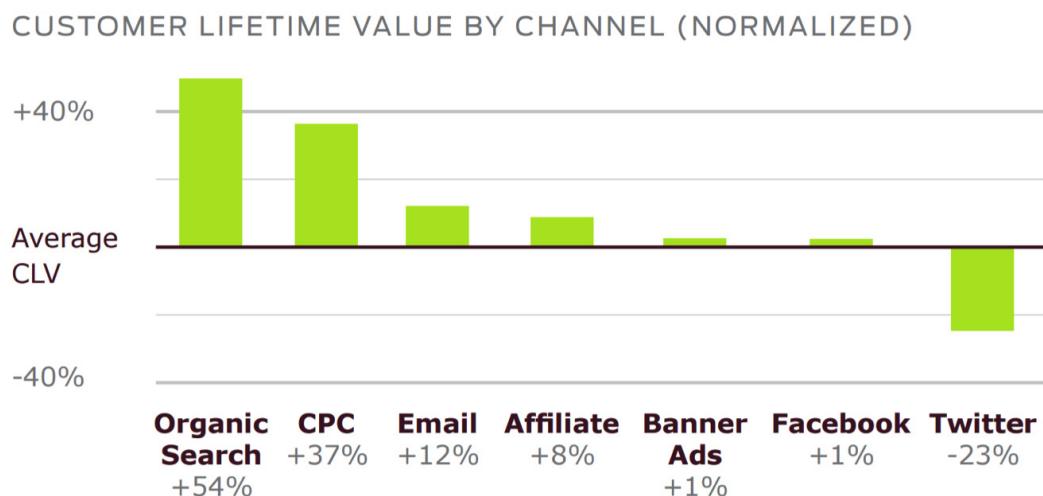
## Segment Your Customers

Ok, so you've got the metric, but they're only as good as what you do with it, and the insight you get to make changes in your business. At the end of the day, what do we do with CLV?

**Segment your customers!** The most value you can get with CLV is segmenting your customers. When you segment your customers you gain valuable insight into which customers are the most profitable for you.

### 1. Acquisition Channel

Merchants can segment their CLV calculations by acquisition channel (social, paid, organic etc). From this you will be able to understand and quickly see which channels are providing you the most value, and perhaps where your marketing dollars are better spent.



Source: CUSTORA E-Commerce Customer Acquisition Snapshot | Q2 2013

The graph above is from [a study done by Custora](#). They took all of their data and compared CLV against acquisition sources. Imagine if you knew this for your customer base, if a customer you acquired from organic was 54% more than the average, and Twitter was significantly less than the average, then you know where to spend your time and resources. Where this is valuable is that you can infer purchasing intent from the channels, and therefore have better understanding of again where to spend your money.

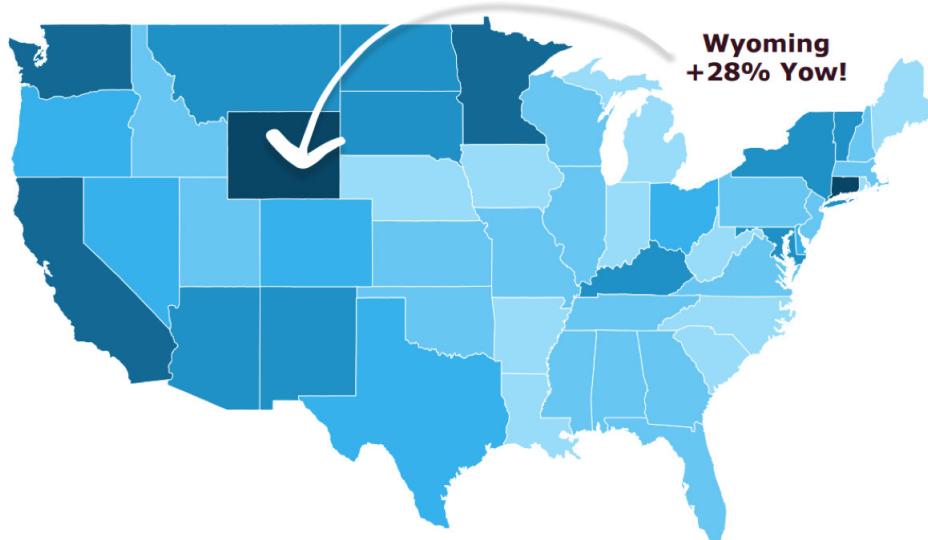


# WHAT CAN YOU DO WITH CLV?

## 2. Demographics

Demographics can be anything from location, age, to sex, etc. It is a way of segmenting people into discernible groups. Calculating CLV based on a certain set of demographics can help you in adjusting your marketing programs to better target a specific segment of your customers. For example, let's say you discover that shoppers in Canada have a higher CLV, you can then dedicate more marketing dollars to specific marketing campaigns for said country.

CUSTOMER LIFETIME VALUE BY STATE



Source: CUSTORA E-Commerce Customer Acquisition Snapshot | Q2 2013

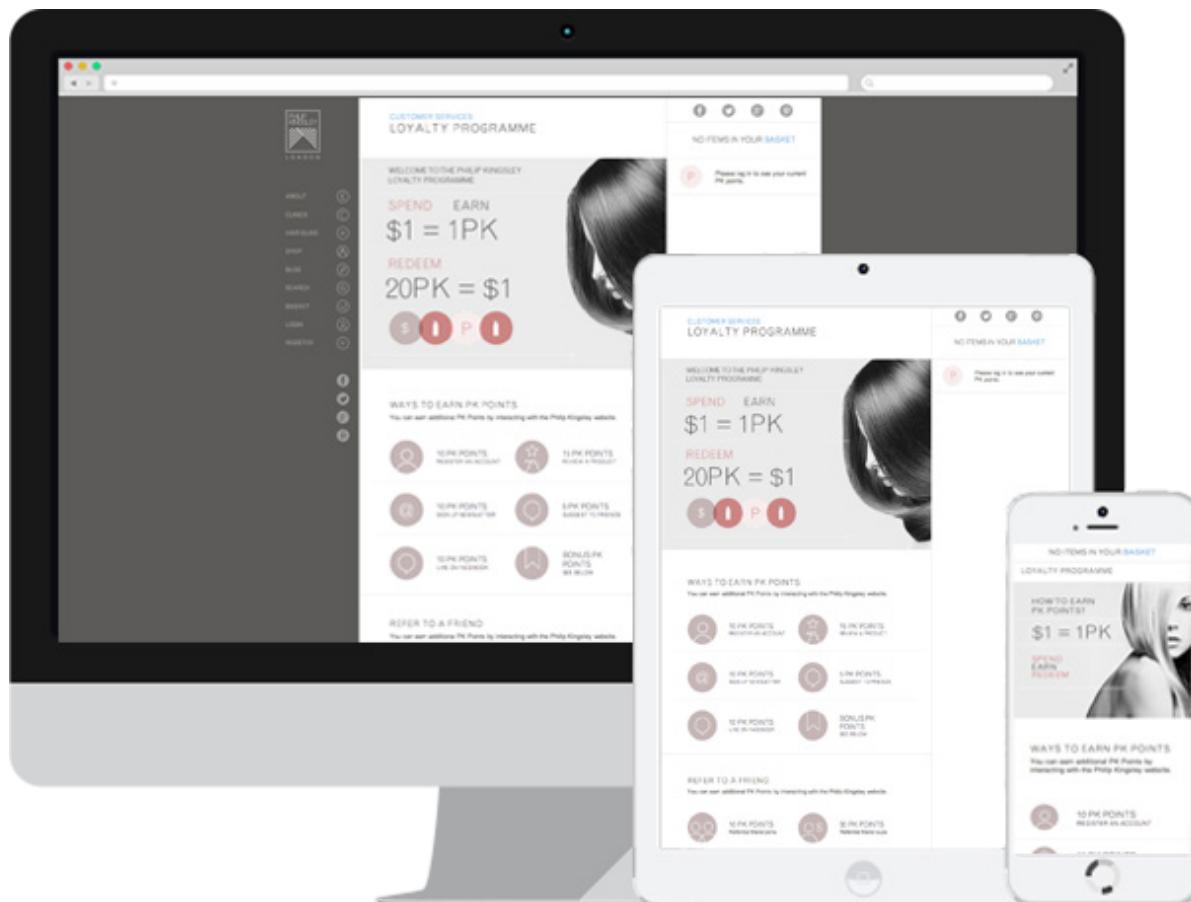
Another graph that goes well with this, is the graph of CLV by state, again from [Custora](#). Imagine if you knew this by province or postal code. It's very powerful. You could also do it by age and sex. Imagine a free shipping incentive in Wyoming, that has a 28% higher CLV than Texas, then obviously it's a worthwhile segment. You can do this with any type of demographic information. You can also use this knowledge to work into marketing and branding. Imagine you knew exactly who your customers were, and **THEN** you wrote your product descriptions, blog posts, and videos that highlight your ideal customer. You basically have the persona of your most valuable customer. Even if you're an established business it's important to look at your most valuable customer so you know where to direct your initiatives online.



# WHAT CAN YOU DO WITH CLV?

## 3. Actions

Finally, you can also segment your customers by the actions they can take. From registering for an account, signing up for your loyalty program, or taking advantage of a promotional discount - what value is attributed to these customers? It's important to consider which customer actions are impacting your CLV, and then adjusting your marketing efforts accordingly.



Source: Sweet Tooth, Loyalty Program Example



# MEASURING IMPROVEMENT WITH CLV

# USE CLV TO MEASURE IMPROVEMENT

Setting benchmarks is the best way to measure the improvement (if any) of your CLV. The benefit of this is if you don't know where you are now, you're not going to know where you will be in the future. To improve the CLV you can impact and increase 3 areas: **average order values, purchase frequency, and customer life span.**

## Average Order Value

You need to focus on things that will help to push customers into an upper tier of what they're willing to spend. For example: free shipping thresholds, cross selling and bundling products, and points programs all help to achieve this.

## Purchase Frequency

You can play with elements of gamification, and encourage customers to compete with others and themselves. Merchants can influence purchase frequency with email marketing and retention strategies by offering a steeper discount or attractive offer (one that you wouldn't normally offer) as a last ditch effort to encourage the customer to take the plunge and checkout. Loyalty programs are a great way to encourage purchases because you create a switching cost. Thus your customers will (or at least should) have a more difficult time switching, since they will have to give up this added benefit.

## Customer Life Span

Long gone are the days of solely competing on price. Price is a race to the bottom. What makes merchants and retailers stand out these days, is customer experience. Providing amazing customer support, and facilitating an amazing shopping experience will keep your customers coming back for more, and increase your overall customer life span.



Do you calculate **CLV**?  
If so, **how**?

What do you **do** with  
that information?





# Sweet Tooth

## Customer Loyalty Programs for eCommerce

Our clients see an average customer lifetime value  
increase of 40%!



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