MASB FINANCE IN MARKETING COURSE

MODULE 3: Customer Profitability Analysis

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Marketing Accountability Standards Board
of the Marketing Accountability Foundation

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Class 12: Customer Profitability

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Definition

- “Customer profit (CP) is the profit the firm makes from serving a customer or customer group over a specified period of time.”

MASB Common Language Dictionary
http://www.marketing-dictionary.org/Customer+Profit

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Customer Profitability: An Introduction

- Why does customer profitability matter?
  - A firm's profitability derives from its relationships with customers
  - Summing profitability of each customer relationship gives an indication of firm value
- What do we find looking at customer profitability?
  - Different customers are rarely all of the same financial value to the firm
  - A small number of customers often produce majority of profits
- What does knowing this allow you to do?
  - Tailor offerings based upon profitability of customers

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Revenue By Customer

- An option to understand the financial value of customers to a firm is to look at revenue per customer
- This can be useful but there is a problem…….this does not take account of costs
  - When customers cost different amounts to serve it is vital to understand costs
  - Customers who buy a lot but cost a lot to serve often aren't as valuable to a firm as customers who don't spend as much but cost much less as a proportion of their spending

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Profitability By Transaction

- Profit margin on a single transaction
  - E.g., profit on each haircut sold
- But marketing often aims to drive repeat purchases/create long term relationships
  - Maximizing profits on a single transaction may limit long term profits
- Think of an example
  - Raising price of snow shovels when it snows
    - Can be profitable in the short term but..
    - May be seen as unfair, deterring repeat business

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Profitability By Product Line

- Aggregate revenues and costs at the product/service level
  - E.g., profit attributable to the 1kg sugar bag
- Can be effective but what is the problem when using this for decisions about customer acquisition etc…?
  - Customers often buy multiple product lines
  - Might not be worth recruiting a customer for a single product…but can be worth recruiting the customer given they will buy multi products

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What is Customer Profitability?

- Profitability at the level of each customer
  - Can be expressed at segment level but beware too much aggregation
    - Aggregation can often confuse analysis, linking dissimilar customers together
- Customer Profitability doesn't look at profit by transaction or by product line
- Instead looks at profit on an entire customer relationship in a given period, e.g., a year
- Allows cross-subsidization at customer level
  - Firm might sell products that don't by themselves generate a profit in order to increase profits overall

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Question

- 5 minute group discussion
  - Can you think of any products that seem to be sold at lower prices than you would expect?
  - Do any of these seem likely to be examples of cross-subsidization?

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Cross Subsidization Examples

- Loss leaders
  - Low/zero/negative profit items that lure shoppers in so that they will buy higher margin items
- High margin add-ons
  - High margins on insurance for white goods supplement modest margins on products
    - "Do you want the extended warranty?" (probably not)
- Additional Services
  - Some banking services less, or even un-, profitable but they are offered to keep entire relationship
  - Accountancy firms used to offer basic auditing services in hope of landing higher margin consultancy fees

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Are All Customers The Same?

- Customers don't all have same value to firm
- Compare
  - A customer who just buys the loss leader products… with one who buys lots of extra high margins items after entering the store
- Alternatively
  - Some customers can be very costly to serve
  - Others can be served much more cheaply

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Customer distribution

- What is the Pareto Principle?
  - Hint: a.k.a. 80/20 rule
- Vast majority of outcomes (~80%) come from a minimum of causes (~20%)
  - Don't get too hung up on the 80 and 20 numbers
  - This just means most of whatever you are interested in comes from a small number of cases
- This can be good or bad
  - Most production defects are caused by a small number of faulty machines
  - Most sales come from a small number of super-customers

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A Typical Distribution Of Profits

- How does the Pareto principle impact firm profits?
  - Often the bulk of profits come from a small number of customers
- Sort the data so customer with most profit is top of list, one with biggest loss bottom
  - Sort the data so highest customer profit first
    2nd highest customer next
    … through to most unprofitable customer
- Plot distribution of profits: Scatterplot on customer profit column
- What do you see?

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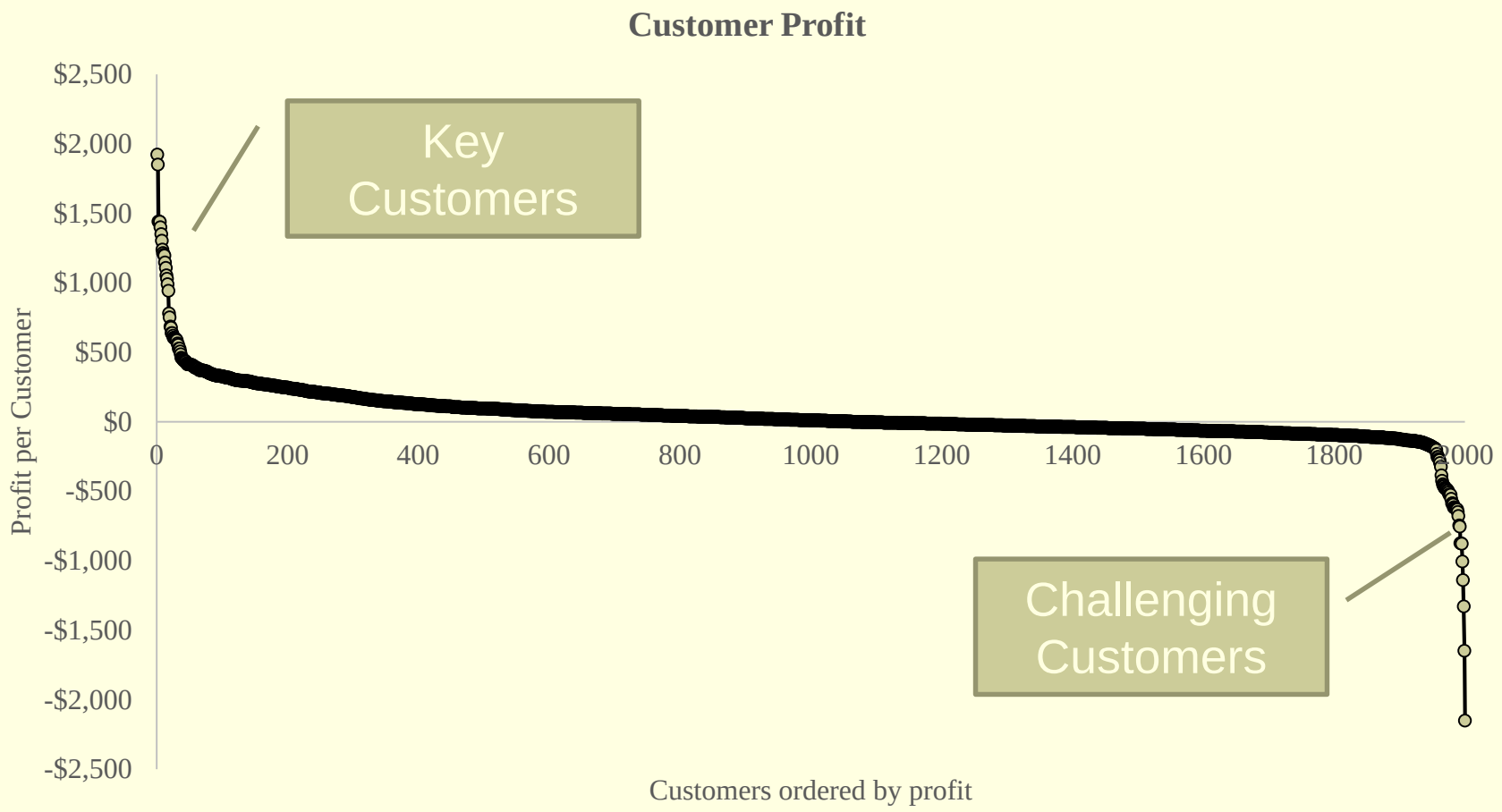
Scatterplot Of Profits



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Pareto And Profits

- Now plot cumulative profits from customers in decreasing order
- To do so create a column for cumulative profits
  - Start with profit from most profitability customer in first cell
    In second cell add profit from second most profitable customer…..
    … through to most unprofitable customer
- Scatterplot on cumulative profit column
- What do you see?

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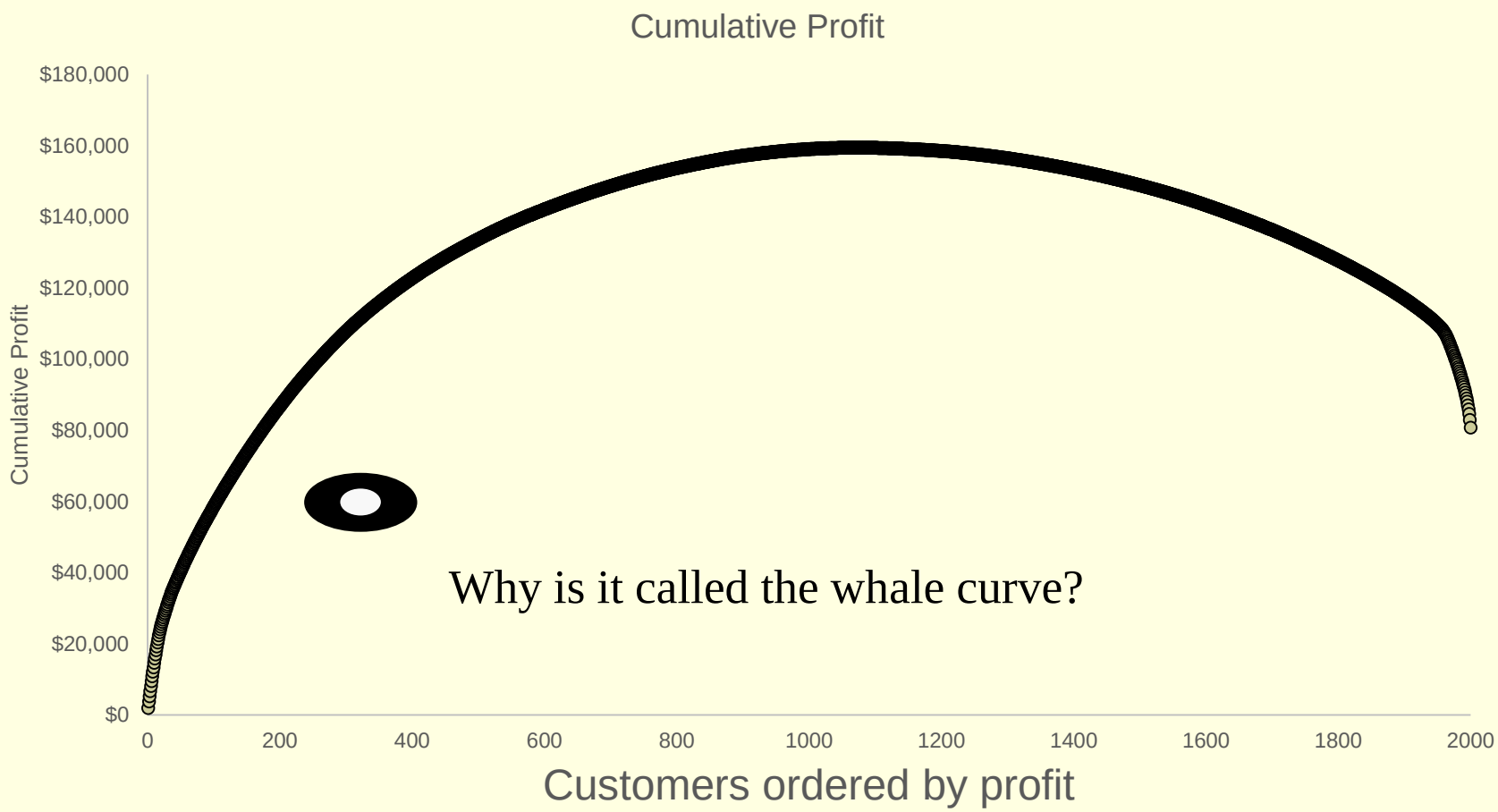
The Whale Curve



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Questions

- How many customers provide 100% of your profits?
- What could theoretically be your maximum profit?
  - Assuming you did not serve your unprofitable customers and that this did not change anything else (such as the allocated costs)

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100% Of Profits Comes From…..

- Get 100 % of total profits by summing customer profit column
  - Check to final number in cumulative profits column – these should match
  - Gives $80,777.19
- Add a new column counting customers from highest to lowest profit – CustomerRank
- Find customer who brings total past $80,777
  - This is CustomerRank 177
- So other customers as a group add nothing

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Profit

- Find the highest cumulative profit
  - In this data $159,426.60
- Find the CustomerRank for the customer bring up the maximum profit
  - This is customer 1069
- If you were able to only serve these customers (and there were no other changes) profit would nearly double
- $\frac{Maximum\ Profit}{Actual\ Profit} = \frac{\$159{,}426.60}{\$80{,}77.19} = 1.97$

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Question On Implications

In a group discuss:

- Should you treat customers differently depending upon their value to the firm?
- If so how?
- What could go wrong?

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Customers Differ

- Not all customers are equally valuable
- Firms recognize this, put customers in buckets and treat them differently
- Airline categorization is one example
  - What queue can you use to enter the plane?
  - What carpet are you allowed to walk on?
  - What snacks do you get?
- What other firms can differentiate between customers?

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Pampering Great Customers

- "For a "platinum" customer, Starwood's Sheraton Agra arranged entry to the Taj Mahal after hours so he could propose to his girlfriend (plus a horse-drawn carriage, flowers, personalized meal and an upgrade to the presidential suite.)"
  - Source: Why Service Stinks, Business Week, 2000

- Our advice: Girlfriend probably should say no
  - Proposer probably has unrealistic expectations of what relationships are like

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Angels and Devils

- Best Buy, the electronics retailer, classified its customers as either Angels or Devils
- Angels were the most desirable customers
  - Buy high ticket items at full price
  - Upgraded to the newest tech etc…
- Devils cost the company money
  - Apply for all the rebates they can
  - Return purchases then buy them back at returned-merchandise discounts
  - Load up on "loss leaders"
  - Demand Best Buy honour its lowest-price pledge against discount websites

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Firing Devils

- Suggestion: Best Buy should “fire” Devils
  - Announces it wants to fire Devils
- Is this a good idea?

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Questions

Break up and discuss in a small group for the next five minutes

- **What are the advantages to firing customers?**
- **Disadvantages?**
- **Are customers values more/less than the sum of their net cashflows to the company?**

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Why Divide Customers?

- Allows for targeting
- Exploits payer/decision maker split common in business purchasing
  - I wouldn't pay $500 extra of my own money for a nice seat
  - …but I'm happy for my firm to pay it for me given I'm travelling for work
- Can offer rewards to those with status concerns
  - Many enjoy being more valued than others
    - They don't just want perks
    - They want others not to have them

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Potential Downsides?

- Customers don't like being treated worse than others, especially for no "good reason" that they can see
- Good reasons are context specific
  - Paying more: sometimes this seems fair (hotels?) sometimes not (healthcare?)
  - Special classes can socially acceptably pay different amounts/get different service, you just have to confirm people think reasonable
    - E.g., elderly, veterans, travellers with young children
- What is not a good reason?
  - Never use (or appear to use by accident) inappropriate criteria, e.g., don't use race
  - And be very careful when using sex as a criteria

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Customers, Not Just Cashflow

- Why might customers be more or less valuable than the sum of their cashflows?
- Several features of customers are not well captured by customer profitability
  - A high-profile celebrity buys and wears your clothes line -- a free form of advertising
  - Some recommend you on social media or elsewhere, they promote your goods
  - Some customers lower your value
    - New Balance was embraced enthusiastically by neo-Nazis because of the firm's support of Donald Trump -- not ideal branding

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Numbers Tend To Change

- Beyond offending the fired customers, and others connected to them, firing customers can cause problems by making the numbers change
- A customer buying a plane ticket may pay less than average cost for seat on plane
- Should we refuse to sell this ticket assuming no on else will buy it for more?
  - If you don't sell the ticket the costs associated with the other customers go up
    - The cheap ticket is making a contribution, however small, towards fixed costs (fuel/salaries of the flight crew) which don't change
  - Your profitable customers look less profitable after dropping the unprofitable ones

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Question

- Discuss for five minutes in a buzz-group
- What gifts have you received from firms?
  - E.g., a tablet when opening a bank account
- What gifts do you know others have received?
- Were any people's gifts better than others?
  - Why?
- What do you think the impact was on your profitability as a customer?

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Gifts Differ Between Customers

- Incentives to customers can be different
  - Some people get great gifts
  - Others get less appealing offers
- If you get a worse gift does it mean the firm cares less about you as a customer?
- If you get a great gift ask yourself:
  - “Why am I this valuable to the firm?”
  - This is likely to be followed by the thought: “Am I paying too much?”

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Question

- What does the firm need to know to know to decide what to offer each customer?

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Must Know Who Is Profitable

- To do this the firm needs
  - Revenue from the customer
  - Must subtract the variable costs directly associated with serving the customer
  - Gives contribution
  - Must subtract any other costs that should be associated with the customer
  - Gives profit from customer

Revenue	$R
Subtract Variable Costs	$VC
Contribution	$C
Subtract Other Costs	$OC
Customer Profit	$CP

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Calculation For A Customer

- A customer buys three products at $30 each
- Variable cost of products is $10 each
- $40 of other costs associated with customer
- What is the customer profitability?
  - Revenue = 3 * $30 = $90
  - Variable costs = 3*$10=$30
  - Contribution = $90-$30= $60
  - Other costs = $40
  - Profitability = $60-$40=$20

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Questions

- Is this data easily available in your firm?
- Where do you get revenue data?
- What are the variable costs? Where do you get the data?
- Other costs to consider? (Whatever that means in your firm)

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The Numbers Matter

- To treat the most profitable customers differently depending upon their profitability you need to know who is profitable
- Finding customer's revenue often possible
  - Look at sales records
- But how do we find the costs of a customer?
  - This is not (just) a dull task best left to accountants
  - If you simply leave costing to accountants you are unlikely to get the numbers that you need to do the job properly

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Variable Cost Data

- Variable costs change directly with activity
  - Costs that change each product sold or service performed
  - Examples might be bonuses to salespeople per sale or the actual cost of the materials in the product sold
- Variable costs might come from invoices and accounting records
  - E.g., we know that each large pizza sold uses $3 in ingredients (cheese, dough, sauce).

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Other Costs

- Firms have many costs (indeed often most of the costs) that cannot be easily tied to a transaction
- Examples
  - Software licence costs: Pay once but use as many times as you like within the firm
  - Machinery costs: Often expensive to buy the machine but fewer costs after that
  - Staff overhead -- supervisors, H.R., accounting, etc.. -- who must be paid regardless of what products are sold
- These costs must be allocated somewhere

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ABC (Activity Based Costing)

- One way to work out the appropriate costs is to link these to the drivers of activity
  - Activity Based Costing
- Work out what drives costs and allocate costs to what creates need for them
  - E.g., building costs (including rent, heat, security etc…) might be allocated on
    - Square footage: business units with bigger spaces are allocated more building costs
    - Staff numbers: business units with more staff allocated more building costs etc..

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An Example

- A building's costs might be apportioned based upon staff (given staff create the need for the building)
  - Building costs $1m a year, houses 1,000 staff
  - Staff member allocated $1,000 building cost each
- Each sales person has to cover $1,000 in building costs
  - Each sales person makes 100 sales a year
  - Each sale is apportioned $10 of costs

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Question

- What challenges might there be in allocating costs appropriately?

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Challenge 1: Allocation Politics

- Allocating costs is a political task
  - Do not believe anyone who tells you they have the “right way” to allocate costs
- There are plenty of ways to allocate costs with different implications for customer profitability
- Should you allocate costs from call centres equally to each customer as all might call in, or by actual usage to customers who actually do call in?
  - Whatever you decide changes the customer profitability calculated

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Challenge 2: Allocation Control

- Often the managers whose profit and loss account is being allocated a cost have little control over the costs
  - A manager's profits might go down because building costs rose
  - Manager might argue this has nothing to do with them
    - They don't control decisions around the building
  - Being allocated costs beyond your control can be demotivating and contentious, especially, if bonuses are tied to profits

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Challenge 3: What Fixed Costs?

- We must allocate costs that cannot be easily linked to a sale which are “fixed” in that they will happen regardless
- What costs really must happen regardless of sales?
- This is a controversial question, it often depends upon the timeframe considered
  - Rent may be fixed for a term, say 3 years, but a firm can move in the long term
  - In long term rent can change if sales grow/decline

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Valuing Customers Long term

- A fundamental problem occurs with a single period customer profitability approach
- Even if we can calculate this perfectly it doesn't capture activity outside the given period
  - For example, the value of investments in customers who will become better customers in the future than they are now is not well assessed using single period measures
- Customers who are not profitable now may turn out to be your best customers in the future
  - Will you fire your future best customers because they don't look profitable today?

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Gaining Cash From Customers

- Next class we will turn to long term projections of future profits -- CLV

	Cash Flow	
	In	**In and Out**
Single Period	Revenue	Customer Profit (TODAY)
Projected Into Future	Projected Revenue Over Lifetime	Customer Lifetime Value (CLV) (NEXT CLASS)

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Summary

- Not all customers are equal valuable
  - To paraphrase George Orwell (who wrote Animal Farm) maybe all customers are equal just some are more equal than others
- We can work out the profits per customer
  - Finding costs can be challenging
- …and design different approaches to different customers
- But be careful of pitfalls and always think about the long term value of the customer

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Thank-you!

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Class 13: CLV Using Spreadsheets

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Recap: Customers Differ

- Not all customers are equally valuable
  - So firms put customers in buckets & treat them differently
    - Airline categorization is one example
  - Incentives offered are different
    - Some customers get great gifts, e.g., tablet
    - Others don't, e.g., branded cap
- Firms want to know which customers are the most valuable to target
- What is the best way to know who are you most valuable customers?

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How to Value Customers?

Revenue (Easiest)

- Reflects past behavior
- Many use this because it is easy
- But doesn't consider costs, so quite silly really

Profitability (Harder)

- Reflects past behavior
- Considers both revenues & costs
- But snapshot; what if customers change over time?

Customer Lifetime Value (Even Harder)

- Considers full customer lifecycle
- Future costs & revenues i.e. requires major assumptions

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CLV and Valuing Customers

- Profit maximizing firm should generally only serve customers who contribute more than they cost (with certain exceptions)
  - Single period measures often miss this
  - Need net cash from customer over "life"
    - Estimate cash inflows & outflows over entire relationship
- CLV estimates cashflows over entire life

	Cash Flow	
	In	In and Out
Single Period	Revenue	Profit
Projected Into Future	Projected Revenue Over Lifetime	Customer Lifetime Value (CLV)

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Customer Lifetime Value

- Customer lifetime value (CLV), lifetime customer value (LCV), or user lifetime value (LTV) is the dollar value of a customer relationship, based on the present value of the projected future cash flows from the customer relationship. (MASB Common Language Dictionary)
- Similar to NPV for a project: It is an estimate of the financial value of a customer to the firm
  - We will outline how to estimate this value using spreadsheets (this class) and using formula (next class)
  - Spreadsheets typically can be used to analyse messy historic data and projections
  - Formula are generally only useful in predicting the future value of customers

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Basic Idea of CLV

Expected Revenue From Customer Over Life

Less

Expected Costs Serving Customer Over Life

Equals

Financial Value of Customer

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CLV Calculations

- Two primary ways

1. Spreadsheet based
   - Estimate all cashflows associated with customer
   - Customer Lifetimes Value (CLV) just the NPV of cashflows associated with an individual customer
     - "Average customer in region A has CLV of $282"

2. Formula based estimation using assumptions
   - We will discuss these more next class

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When To Use A Spreadsheet?

- The formula is much quicker to use. It…
  - can be put together with very few inputs
  - relies on steady cashflows
  - relies on a small number of big assumptions
- The spreadsheet approach is much more flexible than the formula based approach
  - Cashflows can be varied each year
  - Requires many small assumptions
  - Spreadsheets need to be checked for errors
  - Requires knowledge of how long the customer's life will be
    - By life we mean relationship with the firm not literally how long their life with be

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Full Historic CLV

- Full Historic CLV: What customer was worth in total measured at the end of the customer relationship
  - "What was the customer worth over entire relationship"
  - This is often just called CLV but we urge use of the term "Full Historic CLV" to differentiate from projections
- Be careful of how you use this number for it is often of limited practical value
  - Typically we want a customer's value now looking forward not the full historic looking back

Start Full Historic CLV after acquisition cost but before initial margin received (more on this next class)

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Forward Looking CLV

- CLV is more often forward looking
  - We typically want to know values of customer now not historic values of what customers would have been worth at a past time
- What is the lifetime value starting from now?
  - As your life expectancy changes (decreases) the older you get the estimate of CLV changes (often decreases) longer into the relationship
  - CLV at beginning of year 2 differs from beginning of year 1
  - This is because we don't count cashflows already received in the forward looking CLV (unlike the historic CLV)

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When Will My Life Begin?

- Not all cashflows from the relationship will be counted in Forward Looking CLV (cashflows in the past are ignored)
- So we need "when" to start calculation of the future value of a customer
  - "What is this customer worth to us going forward"
- We start this calculation from now whenever now is

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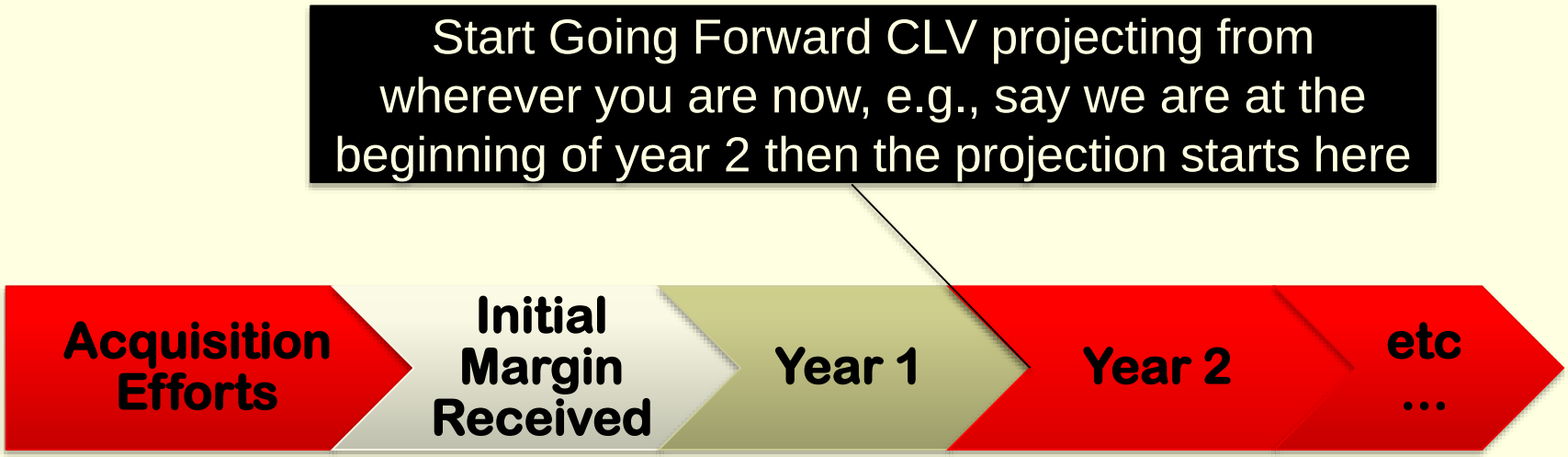
Forward Looking CLV

- **Forward Looking CLV: Where we are now is CLV going forward**
  - **"How much is a customer worth to us now?**



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Group Discussion

Discuss with one or two people beside you:

- **What might you do with CLV?**

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CLV For Future Customers

- "Will acquiring a customer be worth the effort?"

Acquisition

- With new customers you might want to:
  - Decide whether to acquire customers
    - Will they be profitable?
  - How much to spend on acquiring them
    - How much to pay to acquire a customer?
    - Should you give a gift to new customers?
- For this you need the Forward Looking CLV
  - Note you might use a Full Historic CLV of a past customer as a start of estimating Forward Looking CLV but you will want to adjust for any changes since the prior customer was acquired
  - This is one of the only uses for Full Historic CLV

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CLV of Current Customers I

- "How valuable are our customers to us?"

Retention

- Decide who to retain
- To identify specific customer to increase retention activities for these customers
- Actions to retain customers
  - Reduce call center response time
  - Lower service fees for at risk customers?
- For this you need Forward Looking CLV from now
  - Not Full Historic CLV, the past is irrelevant to decisions about the future

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CLV of Current Customers II

- "How valuable are our customers to us?"

<u>Development</u>

- Whose CLV is less than it "should" be?
  - Find low CLV customers similar to higher CLV customers and ask "why the difference?"
    - Do some not order as regularly from us? Can we encourage them to order more?

- Actions to try and raise customer's contribution
  - Give incentives for regular orders? Incentives to increase order size? Incentives for up-sales?
- For this you need Forward Looking CLV from now
  - Not Full Historic CLV, the past is irrelevant to decisions about the future

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CLV of Current Customers III

- "How valuable are our customers to us?"

"Firing"

- Will some customers, over their future lives, cost more than they provide in revenue
- Actions to encourage customers to quit
  - Cut their benefits/service levels
  - Increase prices (if the price increase is accepted by the customer they may no longer need to be fired)
- For this you need Forward Looking CLV from now
  - Not Full Historic CLV, the past is irrelevant to decisions about the future

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CLV and Firm Valuation

- "How much is the firm worth?"

<u>Valuation</u>

- One way of looking at firms is as a bundle of customer relationships. Value is sum of customer relationships
- Actions to value a company
  - Sum up Forward Looking CLVs to estimate the asset from customer relationships
  - This is Customer Equity (MASB common Language Dictionary)
- For this you need Forward Looking CLV from now
  - Not Full Historic CLV, the past is irrelevant to decisions about the future

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Historic Vs. Forward Looking

- We looked at five main uses for CLV
  1. Acquisition
  2. Retention
  3. Development
  4. Firing
  5. Valuation
- Forward Looking CLV is useful for all 5, Full Historic only useful for estimating Forward Looking CLV in the specific case of acquisition planning
  - NOTE: As Forward Looking numbers are the key to using CLV always ask when you see CLV, “When is “Now”?
- Use CLV for forward looking CLV and make sure you only use “Historic CLV” when modeling the past

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Cohorts and Averages

- Often to be practically applied managers use the CLV of an average customer in a cohort
  - A cohort is just a grouping. So a cohort by time might be "customers recruited in 2008" for who we calculate an average CLV
- Calculation becomes more problematic the more heterogenous (i.e. varied) the cohort
  - Be careful, no segment is ever comprised of customers who are exactly alike
  - The more the differences within the group the higher the bias in your estimates
    - Some of this bias may be compensated for by more advanced econometrics (statistical economics) but this is beyond the scope of this course

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Do Firms Use Lifetime Value?

- Yes firms have begun to use estimates of lifetime value
- For example, Verizon, Bell (& other cell phone providers) subsidize hardware if customer accepts a long-term contract (e.g. 24 months)

- Why?
- Because looking for immediate payback can mean ignoring customers who will be profitable over their lives but not immediately
  - And because consumers sometimes value not having to pay large upfront costs
    - Improves customer's cashflow and "feels" cheaper

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Example: Cell Phone Provider's Cashflow

- Cash Outflow
  - Cell phone subsidy=$500
    & variable costs $10 a month=$240
- Cash Inflows
  - Contracted @ $50 a month =$1,200
- Year 1 contribution from customer negative
  - =$600 (12*$50 a month) - $620 (subsidy + 12*$10 a month)
    =-$20
- Lifetime contribution from customer positive
  - =$1,200 (24*$50 a month) -$740 (subsidy + 24*$10 a month)
  - =$460
- What is the problem with this simple model?

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Simple Model No Discounting

- Without discounting customers with large later payments will look better than they are
  - Payments to be received in later years will look as good as if you had the money now
  - As we have discussed in earlier classes this isn't the case, you can't spend/invest future money now
- If some customers look better than they are firms will try to attract the wrong customers
  - Firms will over target customers who have more cashflow but at less useful times, e.g., the far future
- Firm could even go bankrupt waiting for future money

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Need More Sophistication

- We need more sophisticated modeling
- To do this we turn to the project valuation techniques we used for other investments
- Each customer is treated as a project where we see the cash inflows and outflows
  - CLV is the cashflows associated with a customer during their time as a customer
    - Note we will exclude the investment to get customer
    - Many people include this investment but it causes considerable problems so we argue that this is wrong
    - We will explain this in the next class

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CLV On Spreadsheets

- CLV calculations can become quite complex
  - But idea is simple: Consider all relevant cashflows and discount
  - Basic format is very similar to an assessment of a project
- Look at the example on the next slide
  - What questions do you have?

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Example CLV On Spreadsheet

			Year					
		Formula	1	2	3	4	5	6
A	Orders Per Year	From Records	1	2	2	3	4	4
B	Revenue Per Order	From Records	$1,000	$1,010	$1,020	$1,030	$1,040	$1,050
C	Total Revenue Per Year	A*B	$1,000	$2,020	$2,040	$3,090	$4,160	$4,200
D	Variable Cost % of Revenue	From Records	75%	75%	75%	75%	75%	75%
E	Variable Costs	C*D	$750	$1,515	$1,530	$2,318	$3,120	$3,150
G	Contribution	C-E	250	505	510	772.5	1040	1050
H	Fixed Costs to Customer	From Records	$500	$500	$500	$500	$500	$500
I	Net Cashflow	G-H	-250	5	10	272.5	540	550
J	Discount Rate (@10% p.a.)	$\frac{1}{(1+10\%)^{Year}}$	0.91	0.83	0.75	0.68	0.62	0.56
K	DCF	I*J	-$227.27	$4.13	$7.51	$186.12	$335.30	$310.46
L	CLV as at Year 0	Sum of K Year 1-6						$616.25

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Are the Numbers Accurate?

- CLV calculations are only as good as the numbers being used in them
  - If the numbers are wrong the CLV will be wrong
    - And small errors can compound to large discrepancies over time
  - Historic numbers are typically better than projections but even these come with no guarantee of accuracy
  - It can be very hard to work out the number of customers and frequency of orders for a retailer where there are no contracts
    - This makes modeling expected revenue extremely challenging

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Exercise

- Quickly estimate in your head what you think the CLV of the customer in the previous example (which was $616.25) if the following changed
- If the fixed costs were $600 per year (rather than $500 a 20% increase)
- If variable costs are 80% per year (rather than 75%, a 6.67% increase)
- If both of these are true?

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Fixed Costs 20% ↑, CLV down 71%

		Formula	Year 1	2	3	4	5	6
A	Orders Per Year	From Records	1	2	2	3	4	4
B	Revenue Per Order	From Records	$1,000	$1,010	$1,020	$1,030	$1,040	$1,050
C	Total Revenue Per Year	A*B	$1,000	$2,020	$2,040	$3,090	$4,160	$4,200
D	Variable Cost % of Revenue	From Records	75%	75%	75%	75%	75%	75%
E	Variable Costs	C*D	$750	$1,515	$1,530	$2,318	$3,120	$3,150
G	Contribution	C-E	250	505	510	772.5	1040	1050
H	Fixed Costs to Customer	From Records	**$600**	**$600**	**$600**	**$600**	**$600**	**$600**
I	Net Cashflow	G-H	-350	-95	-90	172.5	440	450
J	Discount Rate (@10% p.a.)	$\frac{1}{(1+10\%)^{Year}}$	0.91	0.83	0.75	0.68	0.62	0.56
K	DCF	I*J	-$318.18	-$78.51	-$67.62	$117.82	$273.21	$254.01
L	CLV as at Year 0	Sum of K Year 1-6						**$180.73**

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Variable Costs 6.67% ↑ , CLV down 91%

		Formula	Year 1	2	3	4	5	6
A	Orders Per Year	From Records	1	2	2	3	4	4
B	Revenue Per Order	From Records	$1,000	$1,010	$1,020	$1,030	$1,040	$1,050
C	Total Revenue Per Year	A*B	$1,000	$2,020	$2,040	$3,090	$4,160	$4,200
D	Variable Cost % of Revenue	From Records	80%	80%	80%	80%	80%	80%
E	Variable Costs	C*D	$800	$1,616	$1,632	$2,472	$3,328	$3,360
G	Contribution	C-E	200	404	408	618	832	840
H	Fixed Costs to Customer	From Records	$500	$500	$500	$500	$500	$500
I	Net Cashflow	G-H	-300	-96	-92	118	332	340
J	Discount Rate (@10% p.a.)	$\frac{1}{(1+10\%)^{Year}}$	0.91	0.83	0.75	0.68	0.62	0.56
K	DCF	I*J	-$272.73	-$79.34	-$69.12	$80.60	$206.15	$191.92
L	CLV as at Year 0	Sum of K Year 1-6						$57.48

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FC 20% ↑,VC 6.67% ↑ , CLV down 161%

		Formula	Year 1	2	3	4	5	6
A	Orders Per Year	From Records	1	2	2	3	4	4
B	Revenue Per Order	From Records	$1,000	$1,010	$1,020	$1,030	$1,040	$1,050
C	Total Revenue Per Year	A*B	$1,000	$2,020	$2,040	$3,090	$4,160	$4,200
D	Variable Cost % of Revenue	From Records	80%	80%	80%	80%	80%	80%
E	Variable Costs	C*D	$800	$1,616	$1,632	$2,472	$3,328	$3,360
G	Contribution	C-E	200	404	408	618	832	840
H	Fixed Costs to Customer	From Records	$600	$600	$600	$600	$600	$600
I	Net Cashflow	G-H	-400	-196	-192	18	232	240
J	Discount Rate (@10% p.a.)	$\frac{1}{(1+10\%)^{Year}}$	0.91	0.83	0.75	0.68	0.62	0.56
K	DCF	I*J	-$363.64	-$161.98	-$144.25	$12.29	$144.05	$135.47
L	CLV as at Year 0	Sum of K Year 1-6						-$378.05

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Assumptions

"It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so."
Mark Twain

- CLV (especially Forward Looking CLV) requires assumptions
- These can have major consequences
  - In the examples above small differences in assumptions about costs make a massive difference to projected CLV
- Test your assumptions & then test again

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How Long is a Life?

- How far into the future should we go to calculate a lifetime value?
  - We want to know what the customers entire lifetime will be but that isn't known. So when using spreadsheets we usually take an arbitrary cut off point
    - You can also add a terminal value – an estimate of the value after the calculation in the core spreadsheet calculation -- based upon a formula
    - We will introduce such approaches next class
  - The cut off point chosen will depend on the churn rate (more next class) and the confidence you have in predicting far out
    - 3-5 years is often used for a life but it depends on industry
  - Cutting off the spreadsheet after X years can be a source of bias and disagreement
    - Is your assumption reasonable?

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What Costs Should We Include In CLV?

- The general rule is that we account for:
- Costs necessary to the relationship
- But defining this can be difficult
  - What retention spending (e.g., AAA member's magazine) is truly necessary?
    - Even if the AAA magazine is necessary how many pages & what quality paper is needed?
- Costs that change with the decision
  - Hard to understand, assumptions differ between managers
- Fixed costs are a significant problem
  - Using contribution may be best, i.e. ignoring fixed costs, for decision making
  - But someone must account for fixed costs that are sunk for the decision at hand

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Breakout Group

- What other problems are there with marketers using CLV?

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Communication Challenges

- Customer not in the top categories often upset
  - If you are trying to fire a customer is this a problem?
- What about the only moderately profitable?
  - They might be “developed”
- What about potential customers?
  - Will future customer who could be very valuable be annoyed by your actions
    - Your reputation for exclusion
- What if it appears racist/sexist etc…?
- Some suggested that a focus on lifetime value may encourage inappropriate behavior but firms
  - E.g., Wells Fargo aimed to increase customer value by opening accounts without the customer’s knowledge

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Calculations

- The math can get tricky, especially when there is much complexity in the data
  - It is much, much, much, easier to project revenue in contractual situation, e.g., cellphone, than for a grocer's customers
- Formulas scare people
  - Many marketers, scared of math, rely on "revenue" targets or sometimes "awareness"
- Formulas are often difficult to apply
- Some firms don't hold accessible data
- or marketers don't know how to use it

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Predicting The Future

- CLV is usually used to predict the future
  - Even when calculating Full Historic CLV we usually use this to inform some choice about the future
- In doing this we usually assume the future will be like past
- But is this true?
  - In changing world CLV can be wrong even if assumptions were reasonable when they were made

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Logical Implication

- The purchase of an asset can be modeled as a set of future cashflows
  - i.e. buying this machine is an investment, going forward it costs $X a year to maintain & generates $Y revenue a year ($Y>$X)
- Investments in customer relationships are similar to investments in plant and machinery
  - I.e. securing this customer relationship is an investment, going forward it costs $X a year to maintain & generates $Y revenue a year ($Y>$X)

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Each Customer Relationship Is An Asset

- The relationship that firm has with the customer is an asset of the firm
  - Academics call this type of assets, such as customer relationships, “Market-Based Assets”
- Marketing aims to maximize all assets
  - These include market-based assets
- This is unlike financial accounting which typically does not consider such assets
  - Financial accounting based projections can only try to maximize those assets that they model
- We will return to the problems this causes in later classes

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Summary

- All customers are not equal in financial terms
  - CLV allows us to estimate this
- It can be a Full Historic CLV or a Forward Looking CLV
  - Forward Looking CLV is typically more useful
  - Use “Historic CLV” if you are not projecting and CLV if you are
- Both are challenging to calculate
  - CLV is often done using spreadsheets
- Customer relationships are assets, the value of which can be estimated

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Thank-you!

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Marketing Accountability Standards Board
of the Marketing Accountability Foundation

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Finance in Marketing Course

Class 14: CLV Using Formula

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Introduction: CLV Formula

- We have discussed how CLV (Customer Lifetime Value) can be used by firms
- We outlined how values can be calculated using a spreadsheet
  - Similar to an investment in any type of marketing project
- Now we turn to how CLVs can be estimated using formula
  - These use a small number of assumptions to project out the entire lifetime of a customer

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When To Use a Formula?

- You can create CLV for any customer relationship
- Spreadsheet models get less and less useful if the inputs are more unpredictable
  - E.g., a retailer a customer visits infrequently may find it hard to reliably estimate a customer's regular spending pattern
- Unfortunately formula need predictability even more
  - & are only useful with predictable cashflows
  - The assumptions necessary to use a formula tend to only be achievable if there is a contract
    - E.g., software, a regular payment, Netflix
  - Or very predictable fees
    - E.g., banks
  - It is possible to argue one should only use formula with very predictable, e.g., contractual, customer relationships

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Major Assumptions

- Formula use a number of major assumptions

1. Predictability of cashflows is key
2. But so is the idea of an infinite life

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Infinite Life

- One of the problems with spreadsheet calculations of CLV is that we must assume a fixed lifetime
  - E.g., customer has a maximum life of 5 years
- Clearly some customers are likely to last even longer with a firm
  - Relationships don't generally come with a known fixed end date
- The formula we use project cashflows to the infinite future
  - So the formula does not have a decision to make over setting an arbitrary end period

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Infinite Life? That Is Odd

- Clearly no customer has an infinite life
- As such it may seem odd to use a formula that projects out life to infinity
- This sounds troubling but is less strange that it might at first appear for two reasons

1. Because we discount, the future becomes less & less impactful the further out we go,
2. We use a retention rate that assumes some customers leave each period
   - This means we assume very few will continue to be customers in the long term

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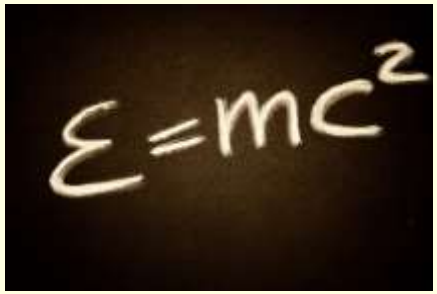
What We Need To Use Formula

1. Discount Rate
2. Contribution Margin
   - This may be calculated from component parts. For example
     - Revenue
     - Costs associated with customer
     - Other marketing costs
     - Other relevant costs
- We covered discount rates and contribution margins in earlier classes
3. Retention Rate (or Churn Rate)



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Retention Rate

- Retention rate: the proportion of customers that are at risk (of not being customers) who are retained from one period to the next
  - For example, a firm has 10 customers whose contracts are up for renewal, if next month 9 of these are still with the firm this is a 90% retention rate
- "At risk" matters because we don't normally speak of customers without a choice to make being retained
  - If you have paid for an annual subscription we don't say you are retained as a customer each month as you have already paid for the month as part of the year so there isn't a retention relevant decision to make

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Estimating Retention Rates

- Clearly working out the retention rate can be challenging in practice
  - Because new customers join we can never just compare total customers at two times
- There can also be challenges assessing retention when customers pay on different time frames
  - E.g., weekly, monthly, yearly
- Retention can be tricky to assess when data erratic
  - E.g., some months see greater falls than others
- It is also very hard when lack of activity does not mean the relationship is over
  - I love Amazon I just didn't buy this month because I was on holiday but I will buy again very soon

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Understanding Customers

- Often it is tricky to estimate retention rates because the customer is ill-defined
- A business-to-business firm might have many "customers" at the one client
  - Is the firm the customer or each individual manager served?
- In B2C is a household a customer or is the individual household member the customer?
- As with any metric you must understand what exactly is being measured to thoroughly understand the implications of any result

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Recency and Active Customers

- Recency refers to the length of time since a customer's last purchase
  - Customers who have a recency less than a given time period will be referred to as active customers
    - E.g., those who have a recency less than three months are active customers
  - Setting the time period is clearly a tricky decision, organizations can "fiddle" customer numbers by changing the level of recency chosen

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Churn Rate

- Churn rate: The proportion of customers at risk of ceasing the relationship who cease having a relationship with the firm in a period
- This is merely one minus the retention rate
  - So in the previous example the retention rate was 90%
  - Therefore the Churn rate in the example was 10% (1-90%)
- If you know churn rate you know retention rate and vice versa

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Churn & The Single Customer

- Note retention and churn rates are somewhat problematic ideas in respect of single customers
  - Unlike a group where 90% can be retained a single customer each period either is retained or isn't
  - So to describe a single customer using a CLV formula which uses rates can be slightly odd
    - The customer can't be 80% retained
    - Contrary to the message of most Zombie movies you are either dead or not
  - You may have seen similar discussions in a stats class but most managers avoid thinking too much about such problems

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Customers Are Lost Forever

- A major assumption with the CLV formula that we will introduce is that customers are lost forever
  - When they are not retained, i.e. they churn, they never return
  - This is often not the case, customers regularly cease relationships with a firm and then return
    - Firms tend to be more forgiving of customers who stray from relationships than human beings
- How serious the problems of customers coming and going are depends upon how regularly this occurs in your industry
  - If the assumption of steady customer relationships are too problematic in your industry use a spreadsheet model, rather than a formula, as the spreadsheet model is more flexible

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Discount Rate and Margins

- We have covered discount rates & margins in prior classes
  - Discount Rates should technically be customer specific to represent the precise risk of that customer
    - In practice firms might have a standard rate as it is typically impractical to have unique discount rates for each customer
    - This would also get incredibly confusing
    - Still you should confirm the discount is reasonable given the customer
- Margins should include all relevant costs
- When you have these, and are confident they are accurate, you can use a formula to estimate CLV
  - This will be Forward Looking CLV
  - For Full Historic CLV you should have specific data so won't need any formula

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A Good Use of The Formula

- If customer financials are predictable, e.g., cell-phone contracts, we can use formulas
- Imagine a group of customers from which you make a constant margin ($M) each period
  - i.e. contribution = $100 per customer per period
- Only some will be retained each period, the retention rate is a constant percentage ,R%
  - I.e. 10% drop out each period, your retention rate (R%) = 90%
- Allied with a discount rate you can calculate Forward Looking CLV
- How? Let us start by considering the margins received without discounting

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Without Discounting

Net cashflows if there were no discounting

- **1st Period's Margin=Margin ($)*Retention Rate (%)**
  - **I.e., we get the margin only if the customer is still a customer**
- **2nd Period's Margin=Margin ($)*Retention Rate (%)^2**
  - **Retention rate is squared as we have had two opportunities to lose customers**
- **3rd Period's Margin=Margin ($)*Retention Rate (%)^3**

Etc…

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Customer Periods

- Margin is constant across all periods
  - This is an assumption when using the formula
- Total margin we receive comes from working out how many customer periods we have and so how many margins we'll receive
  - I.e. how many periods a customer pay us
- Add up your customer periods per customer
  - Retention Rate (%)+ Retention Rate (%)^2+ Retention Rate (%)^3+ … to infinity
- Take our word for it, or test/do the math, this adds up to $\frac{Retention\ Rate\ (\%)}{1-Retention\ Rate\ (\%)}$

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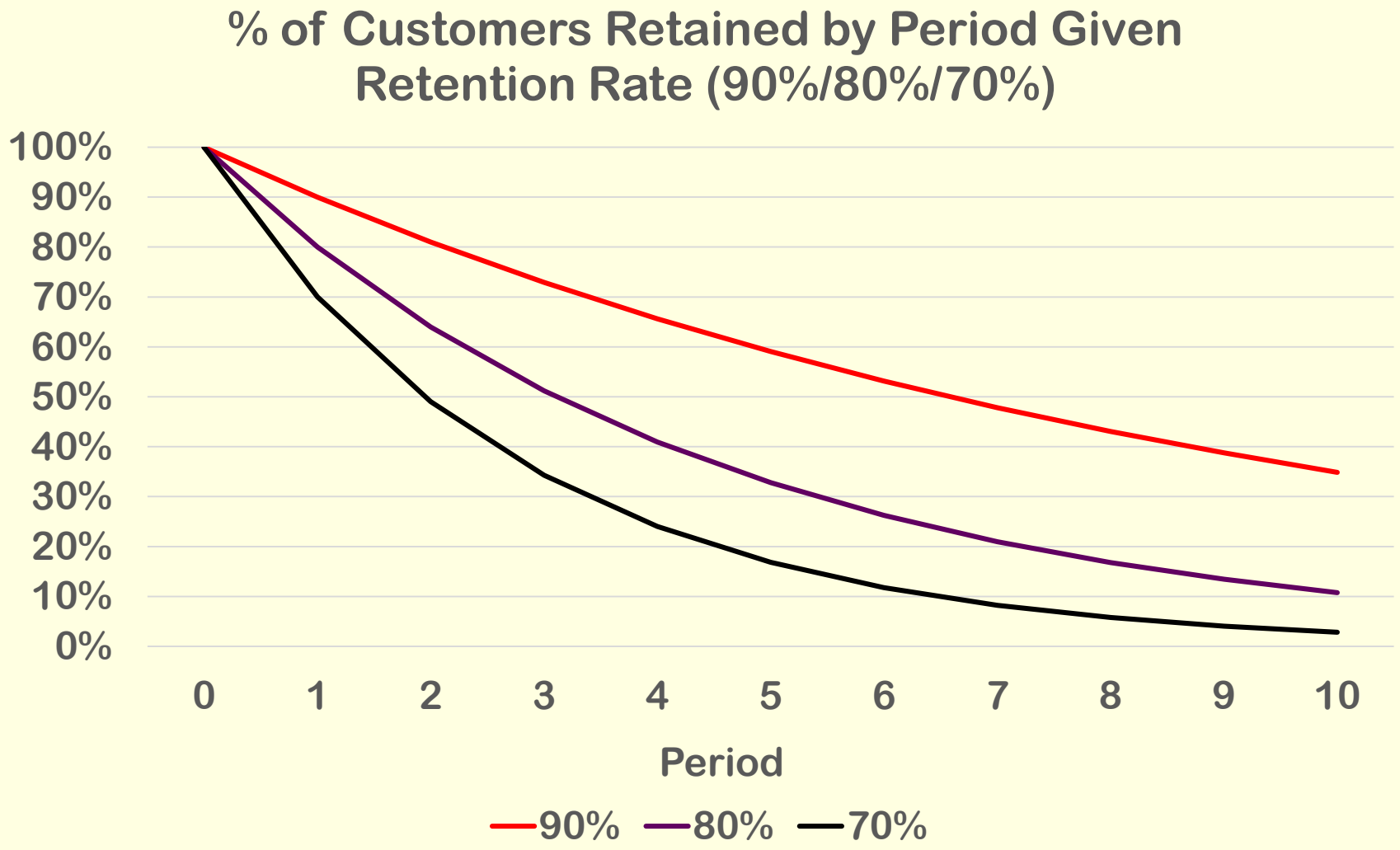
Customers Retained



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Example: Customer Periods

- We can think of the total customer periods of a firm as the sum of customers retained each period
  - If you like math think of the Integral
- Customers have $\frac{Retention\ Rate\ (\%)}{1-Retention\ Rate\ (\%)}$ periods, so 90%/10% or and average of 9 periods
- How many total customer periods starting with 100 customers & a 90% retention rate?
  - 100 customers at 9 periods = 900 periods

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Margins Received

- Without discounting, assuming infinite life, each customer is worth 9 customer periods at a 90% retention rate, i.e. 9 margins
  - The margin is $100 so $900 per customer
- Note this does not include the margin from any initial purchase in the first period
  - Often these are free ("first month free") but they don't need to be. We'll explain what do to given an initial margin next
- Input to our formula will therefore be

$$Margin\ (\$) * \frac{Retention\ Rate\ (\%)}{1 - Retention\ Rate\ (\%)}$$

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Including the Initial Margin

- If we include the initial margin we just add another margin

$$Margin\ (\$) + Margin\ (\$) * \frac{Retention\ Rate\ (\%)}{1 - Retention\ Rate\ (\%)}$$

- If the margin is $100 & 90% retention rate then including the initial margin the customer would be bring in a cashflow of

$$\$100 + \$100 * \frac{90\%}{1 - 90\%} = \$1000$$

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Time Value of Money

- **BUT** these cashflows are not really useful for decisions
  …money later isn't as valuable as money today
  - We must discount the future at some rate
- We use a discount rate of D%
  - E.g., cash is discounted by D% per period
- Remember: One reason why assuming "infinite life" isn't as strange as it sounds is that discounting tends to make the distant future trivial

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Impact of Discounting

- Discounting effectively reduces the number of periods we consider
  - To do this we add it to the bottom (denominator) of our customer periods multiplier
  - $$\frac{Retention\ Rate\ (\%)}{1+Discount\ Rate\ (\%)-Retention\ Rate\ (\%)}$$
- Margin is multiplied by less because of discounting
- If the discount rate is 8% and retention rate 90% how many periods do we have per customer
  - $= \frac{90\%}{1+8\%-90\%} = \frac{90\%}{18\%} = 5$
- The 8% discount reduced the multiplier from 9 (what it would be without discounting) to 5 (as above)

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CLV Formula

- **Factoring in the discount rate, i.e. reducing the value of future cashflows, gives us**

$$\text{CLV (\$)} = \text{Margin (\$)} * \frac{Retention\ Rate\ (\%)}{1 + Discount\ Rate\ (\%) - Retention\ Rate\ (\%)}$$

- **Returning to our example**

$$\text{CLV (\$)} = \$100 * \frac{90\%}{1 + 8\% - 90\%} = \$500$$

- **Note discounting's power, the 8% discount rate nearly halved CLV ($900→$500)**

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Including Initial Margin

- **Including the initial adds a extra margin to the calculation which is not discounted as it occurs at the beginning (year 0)**

$$\text{CLV (\$)} = \text{Margin (\$)} + \text{Margin (\$)} * \frac{\text{Retention Rate (\%)}}{1 + \text{Discount Rate (\%)} - \text{Retention Rate (\%)}}$$

- **Sometimes this formula with the initial margin is rearranged to make it simpler**

$$\text{CLV (\$)} = \text{Margin (\$)} * \frac{1 + \text{Discount Rate (\%)}}{1 + \text{Discount Rate (\%)} - \text{Retention Rate (\%)}}$$

- **You can check they are the same using 8% discount rate, $100 margin and 10% retention rate**

$$\text{CLV (\$)} = \$100 + \$100 * \frac{90\%}{1 + 8\% - 90\%} = \$600$$

$$\text{CLV (\$)} = \$100 * \frac{1 + 8\%}{1 + 8\% - 90\%} = \$600$$

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Example

- Calculate the CLV for a customer who has
  - a margin of $40,
  - a discount rate of 10%,
  - and a retention rate of 80%
- Do it yourself now
- CLV without initial margin

  CLV ($)= Margin ($)*$\frac{Retention\ Rate\ (\%)}{1+Discount\ Rate\ (\%)-Retention\ Rate\ (\%)}$
- CLV with initial margin

  CLV ($)= Margin ($)*$\frac{1+Discount\ Rate\ (\%)}{1+Discount\ Rate\ (\%)-Retention\ Rate\ (\%)}$

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Answer to Example

Not including initial margin

- CLV ($)= Margin ($)*$\frac{Retention\ Rate\ (\%)}{1+Discount\ Rate\ (\%)-Retention\ Rate\ (\%)}$
- CLV ($)= Margin ($)*$\frac{80\%}{1+10\%-80\%}$

$$=\$106.67$$

Including initial margin

- CLV ($)= Margin ($)*$\frac{1+Discount\ Rate\ (\%)}{1+Discount\ Rate\ (\%)-Retention\ Rate\ (\%)}$
- CLV ($)= $40*$\frac{1+10\%}{1+10\%-80\%}$

$$= \$146.67$$

Note initial margin is effectively just added in

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Do You Have Any Concerns?

- Break-out and discuss

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CLV and Costs

- Deciding which costs to include in CLV calculations is always a challenge
- All relevant costs should be included
  - What are these?
  - Marketing costs and product costs are obvious costs to include, what else?
- Thus margin is often broken out into revenue and relevant costs being subtracted
- This can be helpful to understand the inputs
- It also raises the question of when cashflows occur

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When Do Cashflows Happen?

- The formulas we showed discount inflows and outflows at same point within a period
  - Thus we can use net cashflows, .e.g., margin, rather than adding in revenue and costs separately
    - Revenue is assumed arrive when costs go out
- Clearly this may not be the case, cashflows are unlikely to happen at exactly the same time
  - E.g., Costs may be incurred before revenue is received
  - How careful to be with this depends upon the industry
  - & any problem with different cashflow timing in a period is likely worse with bigger periods, i.e. using a year is more problematic than a month which is worse than a week etc..
- If cashflow timing within period matters significantly it may be easier to use a spreadsheet

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Managerial Issue

- Given you can use CLV for various decisions this makes double counting really tempting
- You may use the same CLV number to justify spending because the:
  1. Customer will be worth acquiring &
  2. Customer will be worth offering bonuses to develop, which you didn't initially anticipate but the bonuses clearly make sense once the customer is recruited &
  3. Customer will be worth cutting margins to retain which again you didn't anticipate when recruiting
- The customer can become a money pit
  - Each individual decision to spend/reduce revenue on the customer seems sensible but looked at as a whole are a problem

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Solving Double Counting

- The problem is that the same contribution justifies many projects with different costs ignored as irrelevant in different decisions
- This can be especially problematic if a customer is claimed by many units
  - A cable companies' tech group justifies upgrading the service though its CLV calculations
  - Marketers justify a retention mailing though their CLV calculations
  - Call center justifies more staffing to retain the customer though its CLV calculations
- Solution
  - Specify who manages each relationship
  - Have single P&L per customer (or at least customer cohort)

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Problem of Acquisition Costs

- How to treat acquisition costs is a source of controversy in marketing
  - Some subtract them from CLV before reporting it
    - This may be the most widespread practice
  - Other don't subtract acquisition cost before reporting CLV
- To be clear not subtracting acquisition costs before reporting CLV is clearly superior
  - Subtracting acquisition costs regularly leads to mistakes (even from professors)
    - Many published marketing cases are simply wrong (Bendle and Bagga 2016)
- We next justify why acquisition costs should not be subtracted from CLV before reporting it

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Consider The Use of CLV

- We looked at five main uses for CLV:
  1. Acquisition
  2. Retention
  3. Development
  4. Firing
  5. Valuation
- It is a mistake in four of the five uses to subtract acquisition costs from CLV before reporting the measure
- Even in the use where it is not wrong subtracting acquisition costs from CLV before reporting the measure adds no extra benefit

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Acquisition

- When deciding whether to acquire a customer we recommend comparing CLV to the acquisition costs (AC)
  - Question to ask: Is CLV>AC?
- Alternative we argue against: subtract AC from CLV, call this CLV, and ask
  - Is CLV [i.e. CLV-AC]>0
- These are mathematically identical -- neither alternative way adds benefit in such situations
- We are not saying the alternative is wrong in this specific case. We say that subtracting AC before reporting CLV will fail in the other cases so why use it in this specific case given it adds nothing

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Minor Arguments

- Less critically we see benefits to not subtracting acquisition costs before reporting CLV even if you only use it for acquisition decisions

1. Subtracting AC from CLV can be a problem when using Full Historic Cost CLV as an estimate of the value of customers going forward
   - As AC change over time one needs to change the AC before assessing the acquisition
   - The way we recommended makes AC's clearer
2. When assessing return on an investment it is easier to keep the investment (acquisition costs) separate from the estimated (CLV)

But be careful using CLV in ROI calculations

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Retention, Development, Firing

- These 3 decisions are made for current customers
- For current customers what it cost a firm to acquire the customer is irrelevant to actions in respect of the customer going forward
  - retention, development, firing
- If you subtract AC from CLV you must add it back before using CLV to inform these decisions
- People often forget to do this leading is a common decision mistake, called sunk cost bias
  - Academic cases & managerial advice consistently makes this mistake (Bendle & Bagga 2016). You shouldn't
- What matters for decisions is the future
  - Past mistakes shouldn't mess up decisions about future (the relevant phrase is "no point crying over spilt milk")

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Example: Sunk Costs

- Example, assuming you have already spent the money to acquire this customer (which you cannot get back) do you want to retain this customer?
  - Cost to acquire $100
  - Expected future cost to serve customer (fully discounted) $200
  - Expected future revenue from the customer (fully discounted) $280

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Answer To Sunk Cost Problem

- You should want to retain this customer
- Contribution is $280-$200= $80 which is positive
- The customer is an asset to the company worth $80
- Subtracting the sunk costs of acquisition makes the customer look unprofitable ($80-$100=-$20)
- If you use this number to decide who to retain you might reject a customer worth $80 wrongly thinking they are worth -$20
- Of course, if you could start from scratch, you wouldn't recruit this customer but once the acquisition cost is spent you might as well to retain the customer
  - $80 is better than nothing which is the choice you face now

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Valuing A Firm

- When buying a company potential purchasers look at the value of assets now
  - CLV informs this asset value
- No one values an asset less because of what it cost to purchase
  - You don't subtract historic cost from current value
    - If you do what does the resultant number mean?
    - Cost to purchase is completely irrelevant to current value
- Subtracting acquisition costs before reporting CLV is pointless here given you must reverse this subtraction to value the customer as an asset
- And subtracting before reporting leads to mistakes
  - Reported CLVs being too low & firm being undervalued

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Summary: What To Do With AC?

- Never subtract acquisition costs before reporting CLV
  - It adds no extra benefit when assessing acquisition decisions (and causes a couple of minor problems)
  - It causes an unnecessary adjustment which when missed engenders mistakes when taking decisions for current customers
  - It causes an unnecessary adjustment which when missed engenders mistakes when using CLV for valuations

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Customer Equity

- Customer Equity is a commonly used term in marketing
- Definitions vary which causes some confusion
  - They include some hard to value ideas around consumer attitudes
- We use a simple definition designed to mirror financial uses
- *Customer equity is simply the total combined CLVs for all of a company's customers. (MASB Common Language Dictionary)*
- Thus a firm with valuable customer relationships is said to have a lot of customer equity
  - *A key asset for the firm*

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Summary

- Calculating CLV using a formula is a potentially powerful method
  - Students should understand the formula to get the idea of how we can predict the future value of customers
- There are, however, many challenges to using the formula
- This can mean that in many industries the formula is impractical to imply
- When using CLV be clear not to subtract acquisition costs before reporting CLV
- Also beware double counting, crediting lots of different units/justifying different spending with the same value of the customer

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Thank-you!

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