Marketing Analytics

May 25, 2019

- I used to work in fashion in New York
- Now I work at a local bank, managing a 38 people team of digital marketers, developers, and product folks
- We spend ~PHP200MM/yr on marketing media with 80% of allocated for performance
- I make excellent pancakes

About Me / Digital

Bank of the Year
2018, 2016, 2015

The Banker

Best Retail Bank (Philippines)
2018

The Asian Banker

Best Retail Bank (Philippines)
2018

Alpha Southeast

Best Bank in the Philippines
2018

Global Finance

Best Digital Bank
2017

Capital Finance

About Security Bank

AGENDA

Discussion Points

What is marketing?

What is analysis?

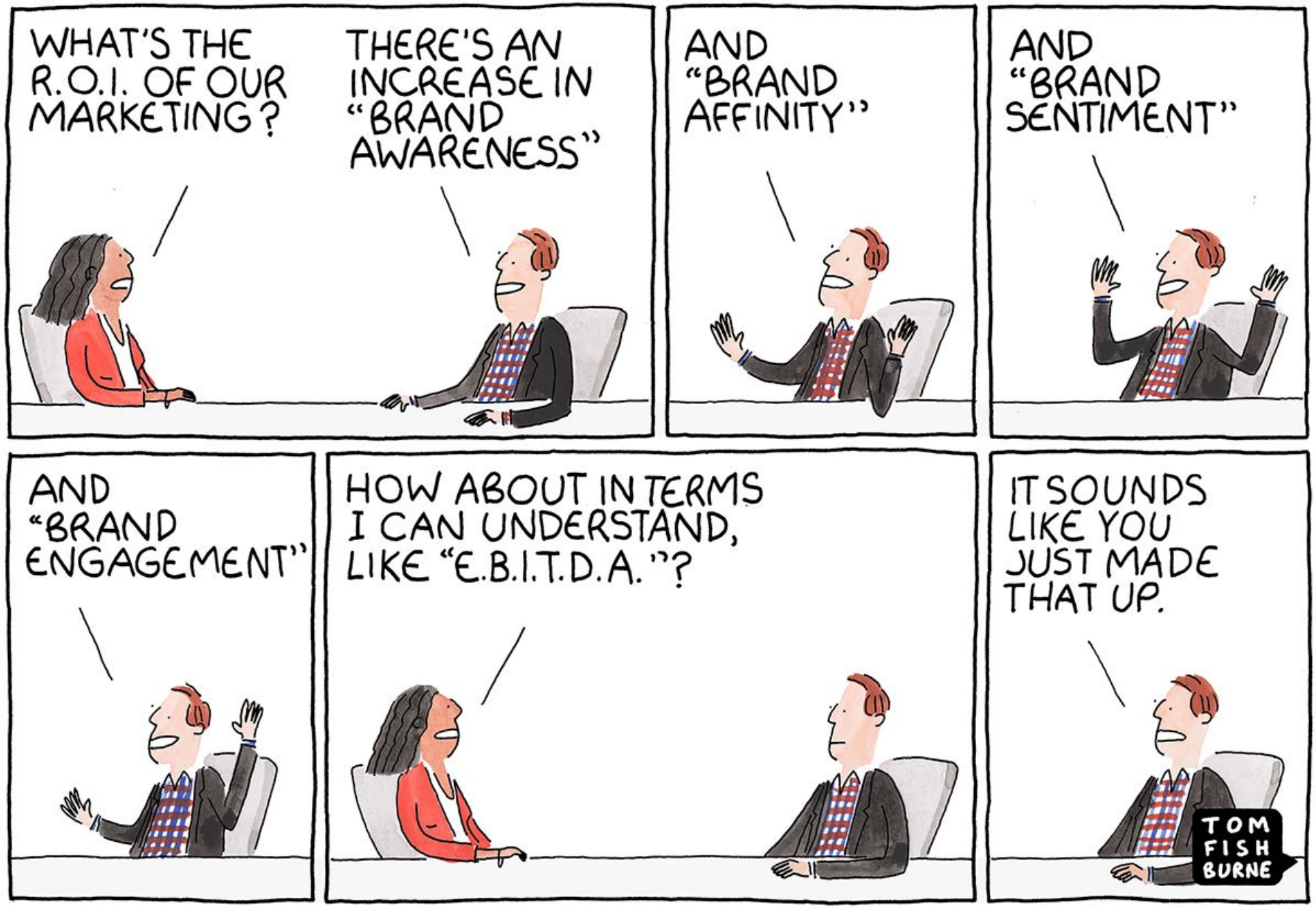
What is Marketing Analytics?
- Measurement
- Analysis
- Management

Marketing Analytics in practice

Exercise

Let’s start by asking...

What is the purpose of marketing?

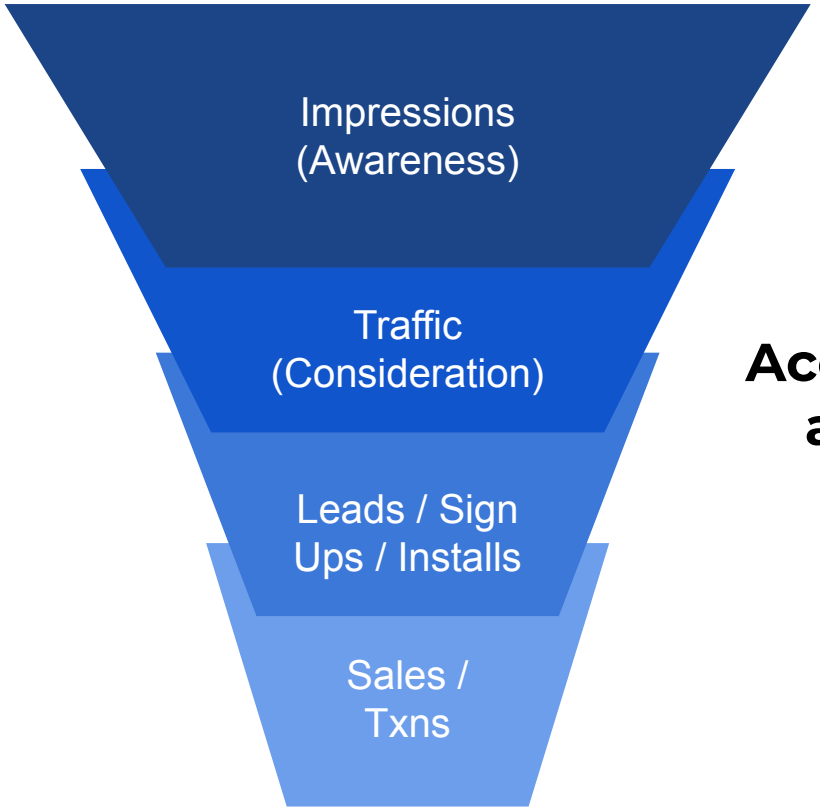


Ultimately, the purpose of marketing is to drive business growth

(usually sales)

But sales can be ambiguous so marketers use proxy metrics for a customer's value

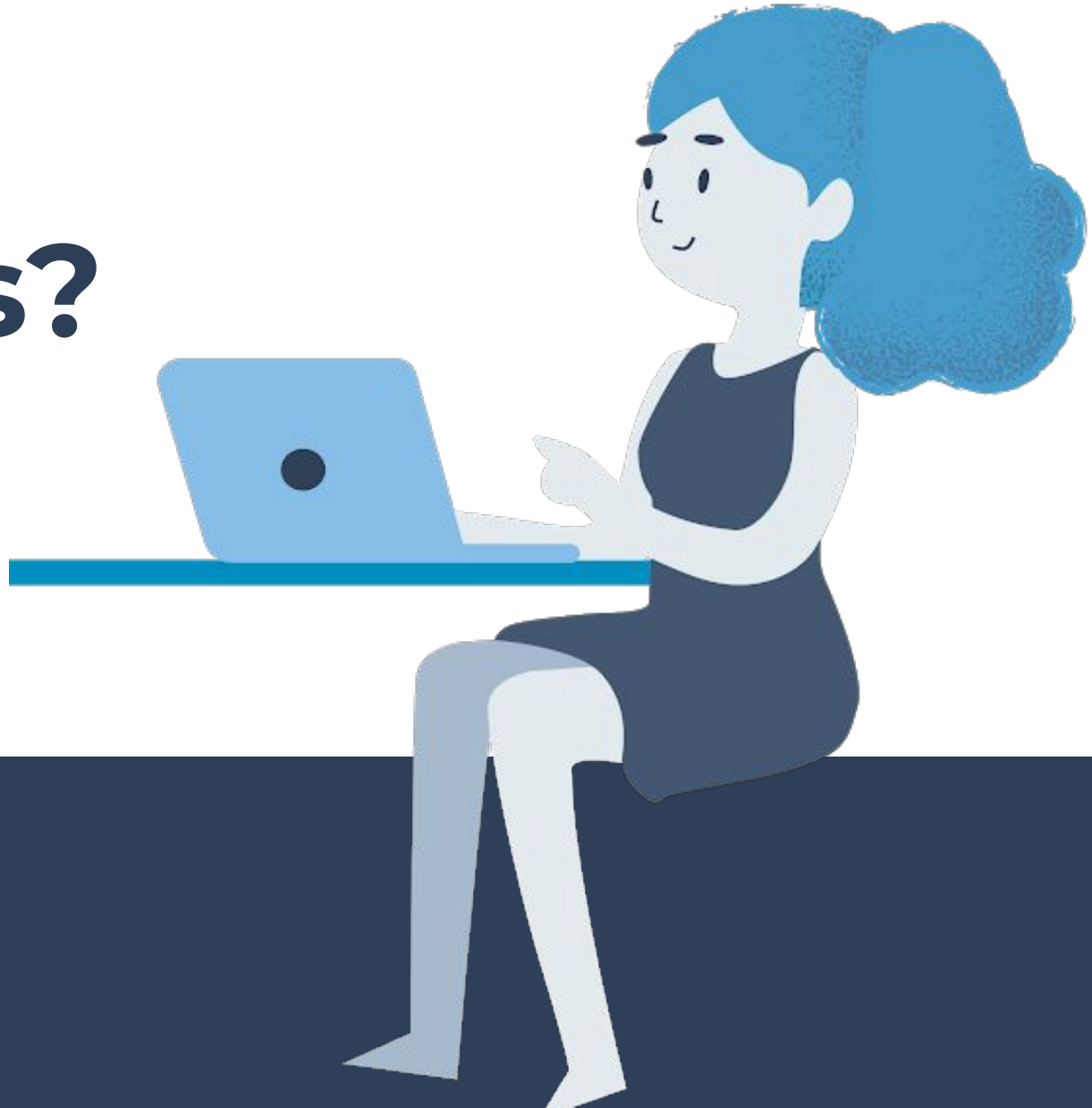
Accessibility to Marketer



Accessibility and value are often inversely correlated

Value to Marketer

What is analysis?



a·nal·y·sis

/əˈnaləsəs/

noun

1. detailed examination of the elements or structure of something.
   "statistical analysis"
   synonyms: examination, investigation, inspection, survey, scanning, study, scrutiny, perusal;
   More

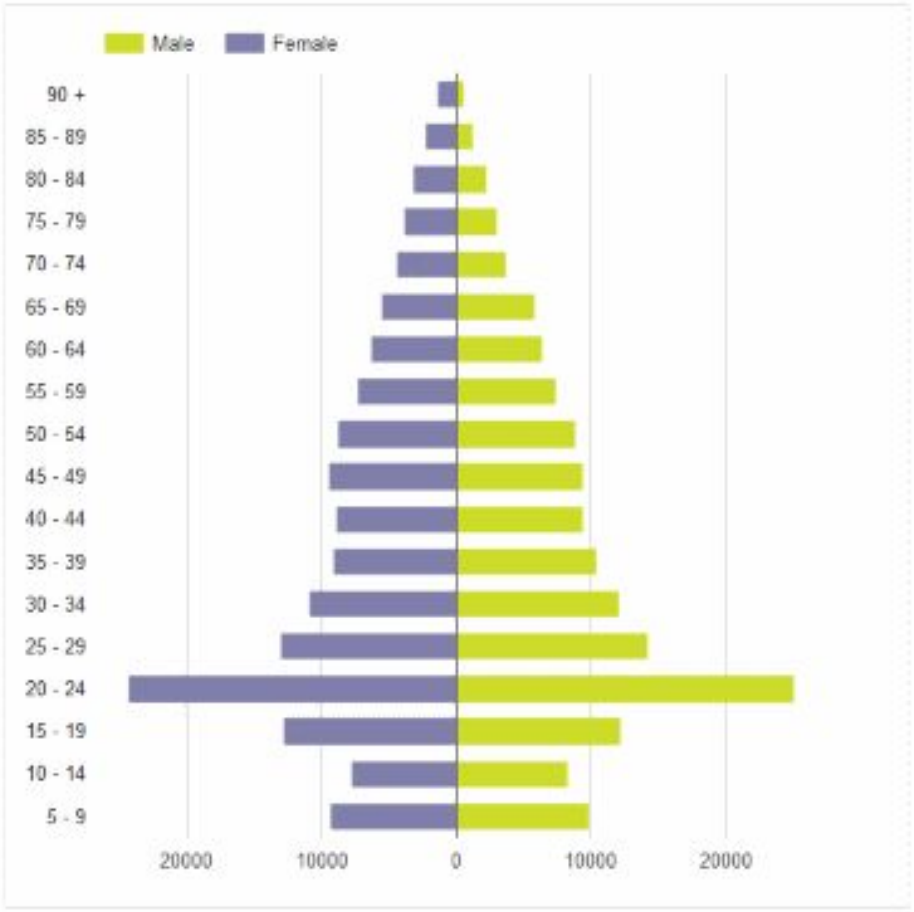
INGREDIENTS

- 2 cups all-purpose flour
- 2 teaspoons baking powder
- ¼ teaspoon salt
- 1 tablespoon sugar, optional
- 2 eggs
- 1 ½ to 2 cups milk
- 2 tablespoons melted and cooled butter (optional), plus unmelted butter for cooking, or use neutral oil

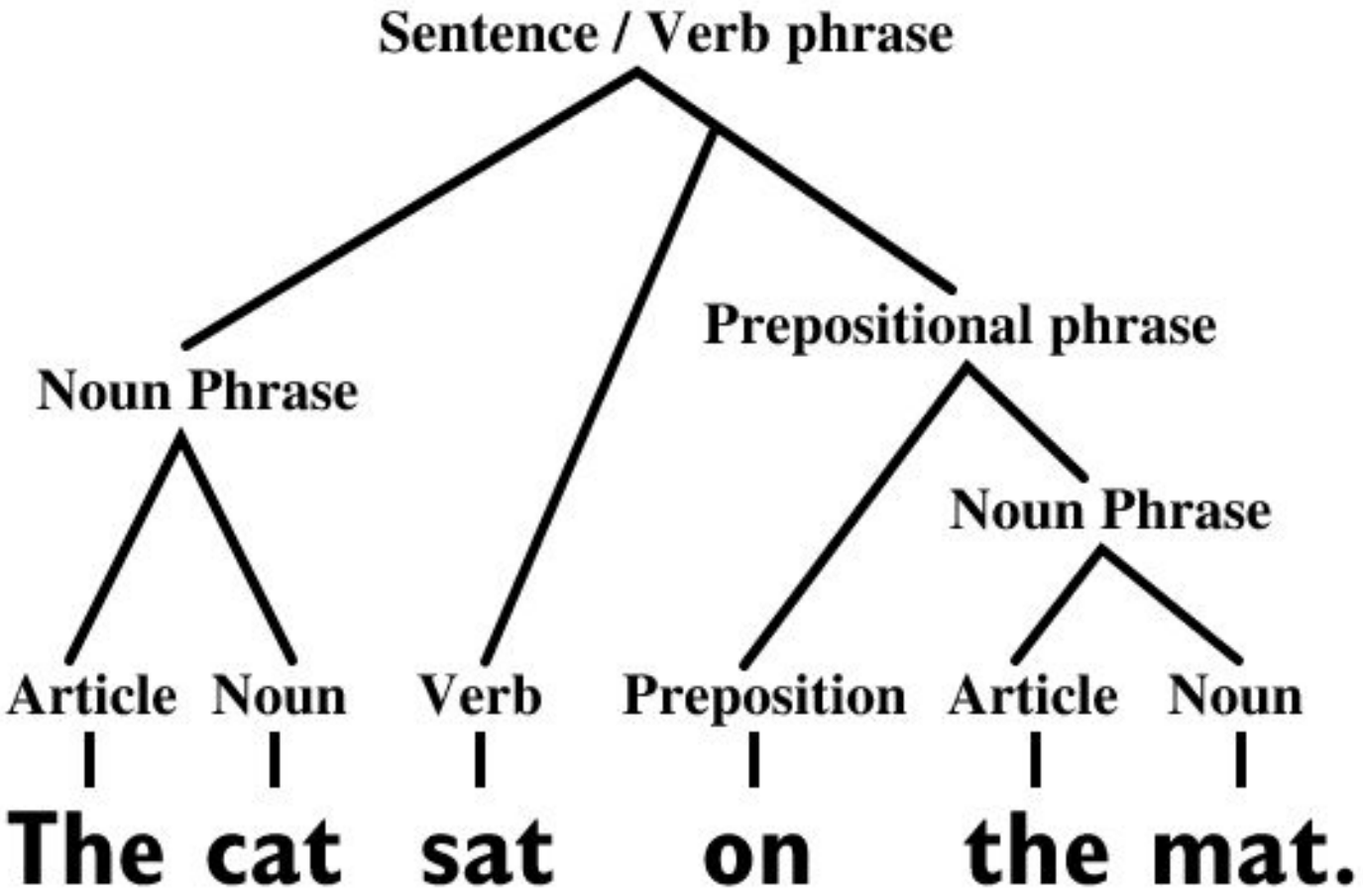
RATIO - doughs & batters

	Flour	Fat	Liquid	Egg	Sugar	Notes
Bread	**5**		**3**			Rule of thumb: **Salt**: 2% of flour's weight. **Yeast**: 1tsp for 1 pound (454gr) of flour. Bread's temperature: 180-210F (82-98C)
Pasta	**3**			**2**		1 egg per person. 1 egg = 2oz (56gr). If scale less: 2 eggs per 1 cup of flour
Pie dough	**3**	**2**	**1**			Butter (fat) must be as cold as possible. Dough must be worked as little as possible
Biscuit	**3**	**1**	**2**			1 tsp baking powder per 4oz (225 gr) of flour. Use butter as your fat
Cookie	**3**	**2**			**1**	Flavor will vary depending on additions. Use butter as your fat
Pound / sponge cake	**1**	**1**		**1**	**1**	Combining order gives different results. **Pound cake** order: butter, sugar, egg and flour. **Sponge cake** (foaming method): whip eggs and sugar first. **Creaming method**: paddling sugar into batter, add eggs then dry ingredients
Pate a' choux	**1**	**1**	**2**	**2**		Savory (Parisien gnocchi) & sweet (cream puff dough) preparations (depends on salt/sugar)
Muffin	**2**	**1**	**2**	**1**		Straight mixing method. Baking powder
Fritter	**2**		**2**	**1**		Straight mixing method. Baking powder
Pancake	**2**	**½**	**2**	**1**		Straight mixing method
Crepe	**1/2**		**1**	**1**		Works also with volumes ratio, if scale less
Popover	**1**		**2**	**1**		Straight mixing method. No baking powder

Total population: population pyramid



Basic constituent structure analysis of a sentence:



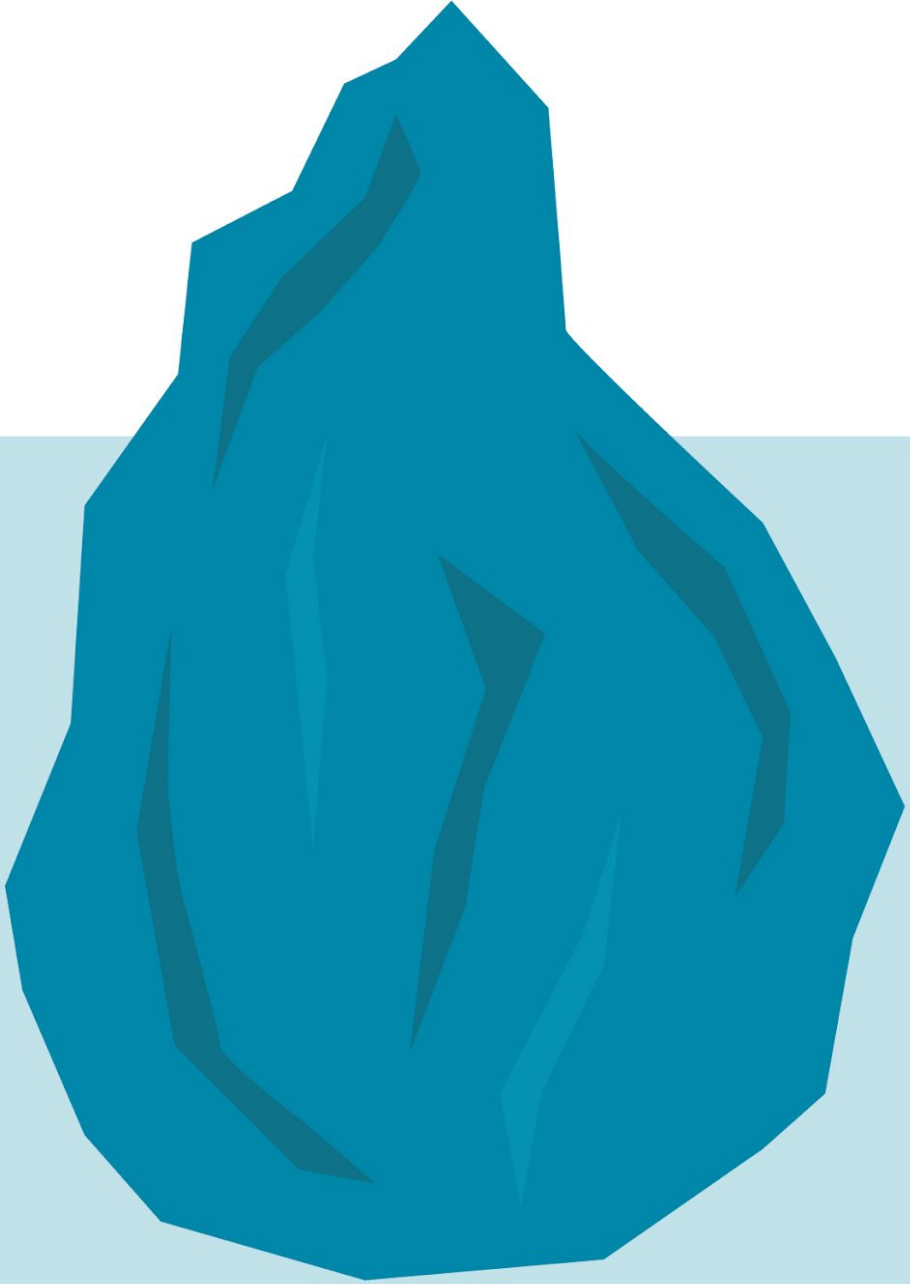
So why analyze things?
Joke time!

Bill Gates walks into a bar...

and everyone inside becomes a millionaire

On average

20%
CAUSES



80%
EFFECTS

PARETO PRINCIPLE

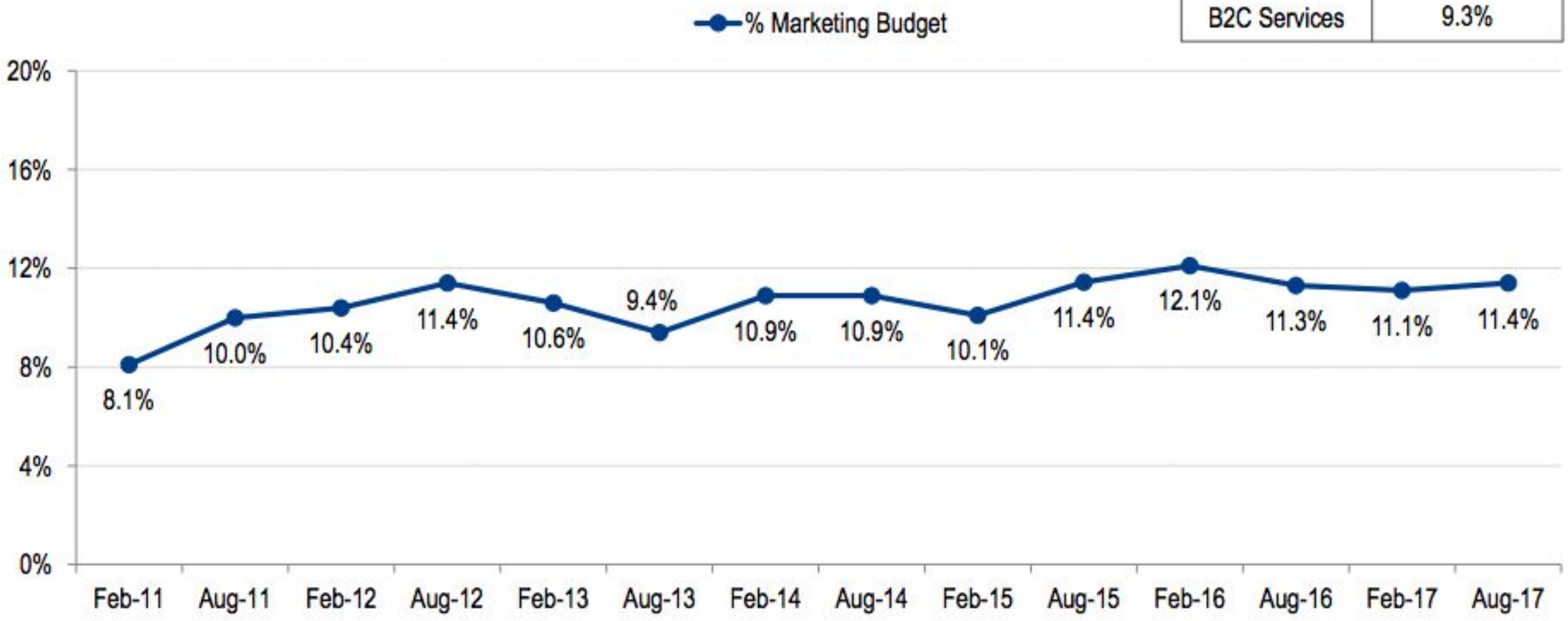
What is marketing analytics?

Marketing effectiveness is measured through incremental contribution to business goals

(in relation to used resources)

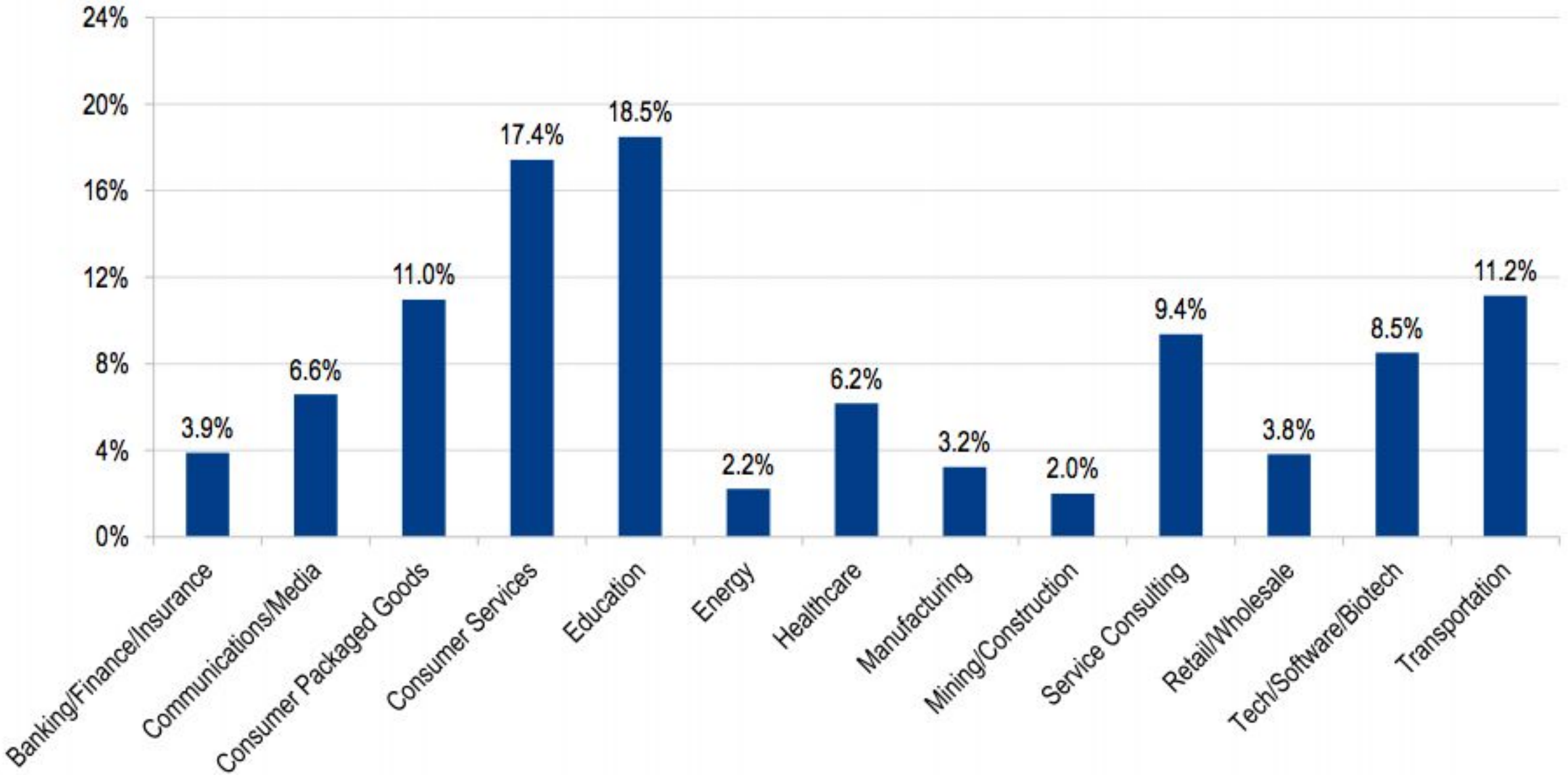
Figure 3.8. Marketing budget as percent of firm budget*

Overall	11.4%
B2B Product	10.4%
B2B Services	12.6%
B2C Product	13.4%
B2C Services	9.3%



Source: https://cmosurvey.org/wp-content/uploads/sites/15/2017/08/The_CMO_Survey-Highlights_and_Insights-Aug-2017.pdf

Figure 3.9. Marketing spending as percent of company revenues*



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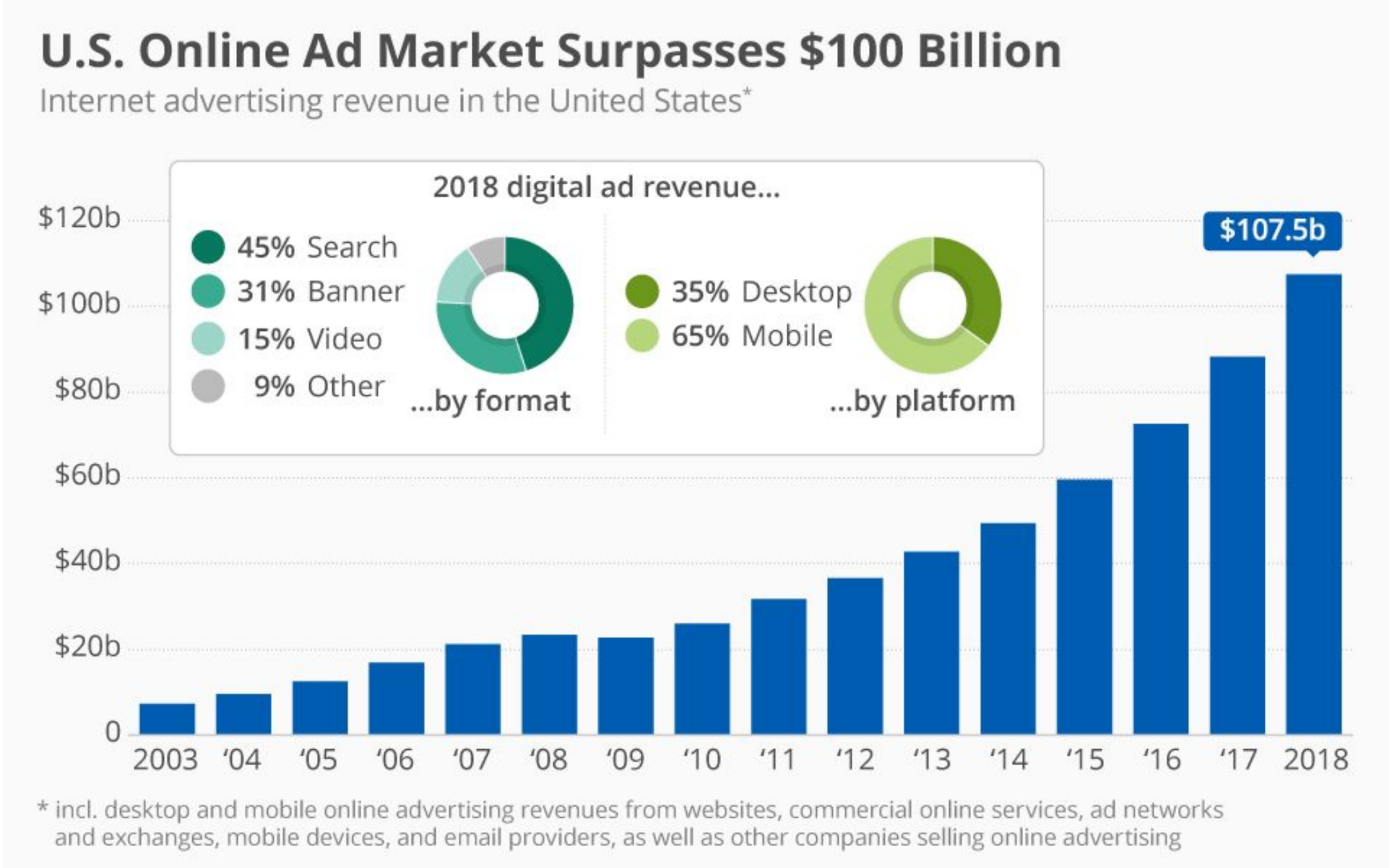
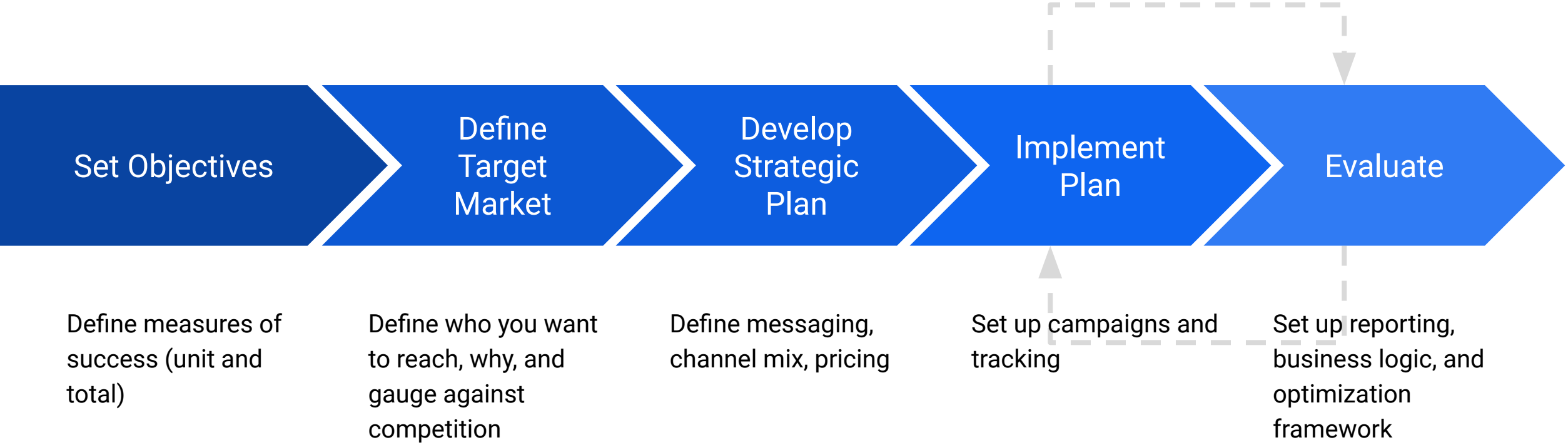
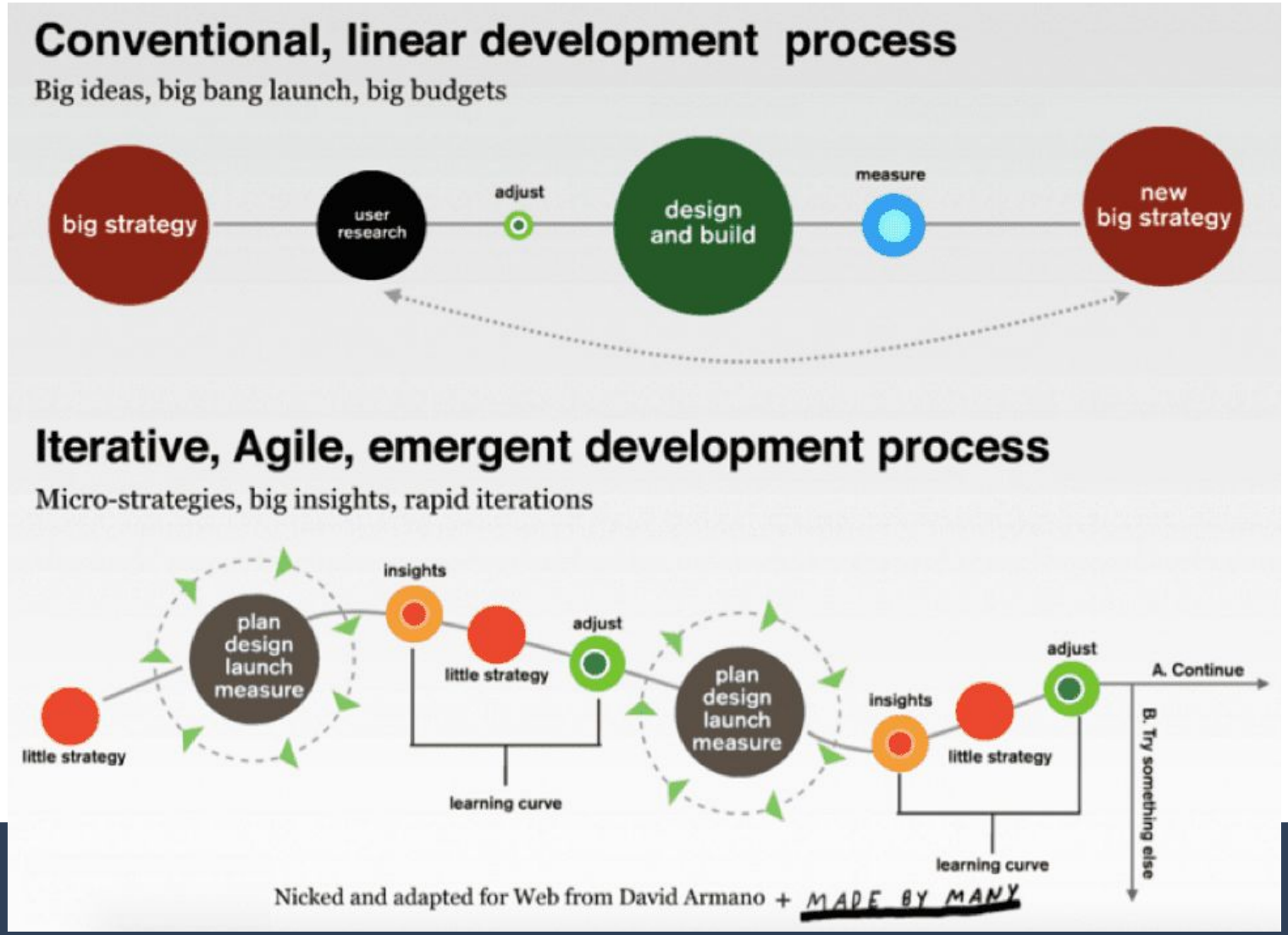


Source: https://www.statista.com/chart/18143/us-internet-advertising-revenue/

Marketing activities seem to be the same as they were in the past



But what has changed is that the marketing process has sped up and become much more iterative



Data-driven marketing relies on 3 core analyses

#1 VALUATION
(Measurement)
"What is my target metric and how much am I willing to pay for it?"
(X is typically a customer action/value)

#2 ATTRIBUTION & SEGMENTATION
(Analysis)
"What is contributing to my target metric?"
(And at what cost?)

#3 ALLOCATION
(Management)
"How often and at what rate should I shift resources to more efficient marketing activities?"

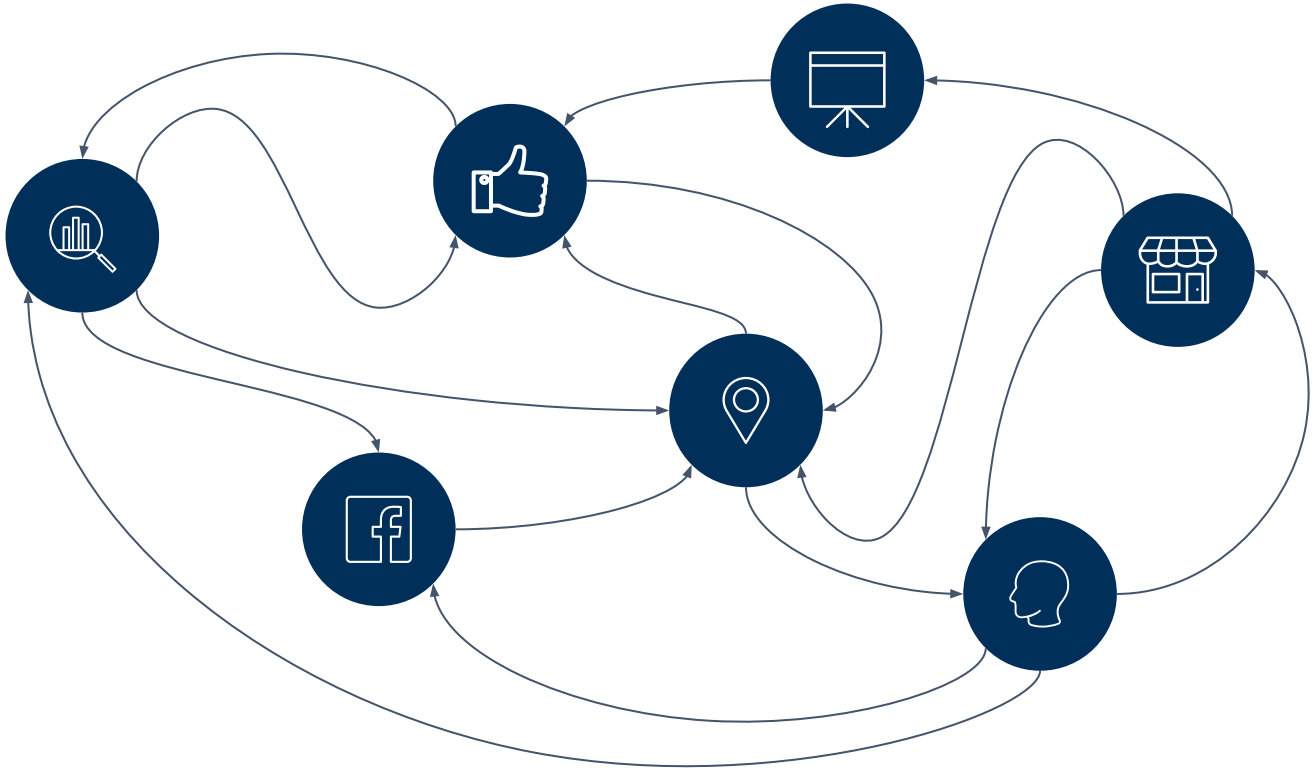
Valuation defines a “target” metric and a target cost for that metric (typically an action/value)

Customer action-level valuation comes from defining revenue per action and linking the company’s target margin

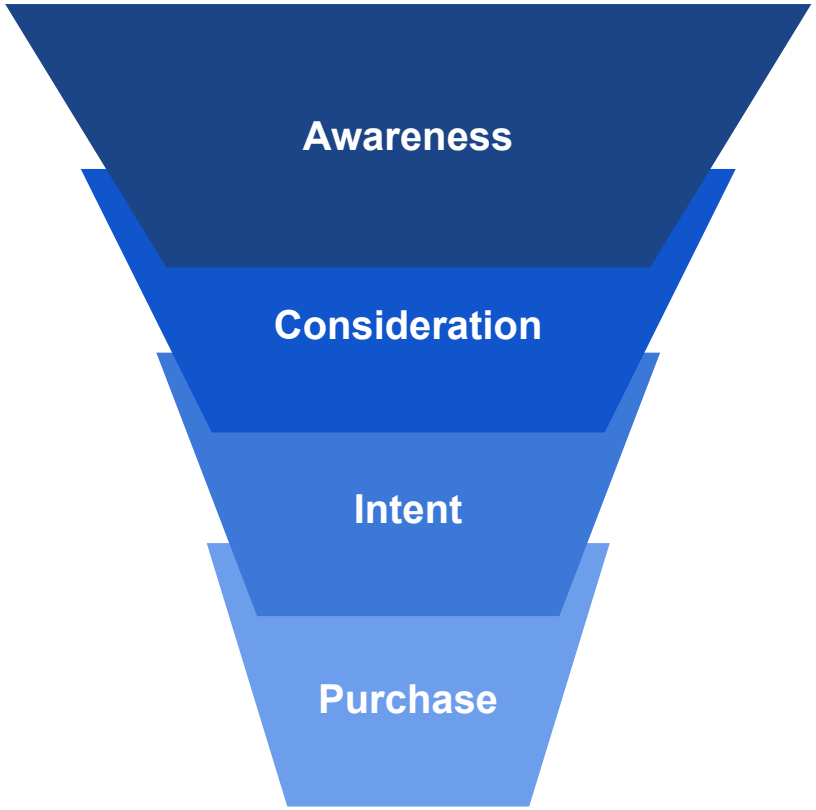
For upper funnel metrics, that value is divided across touchpoints

A customer's path to purchase is complex... so often abstracted by marketers to a purchase funnel

Customer Decision Journey

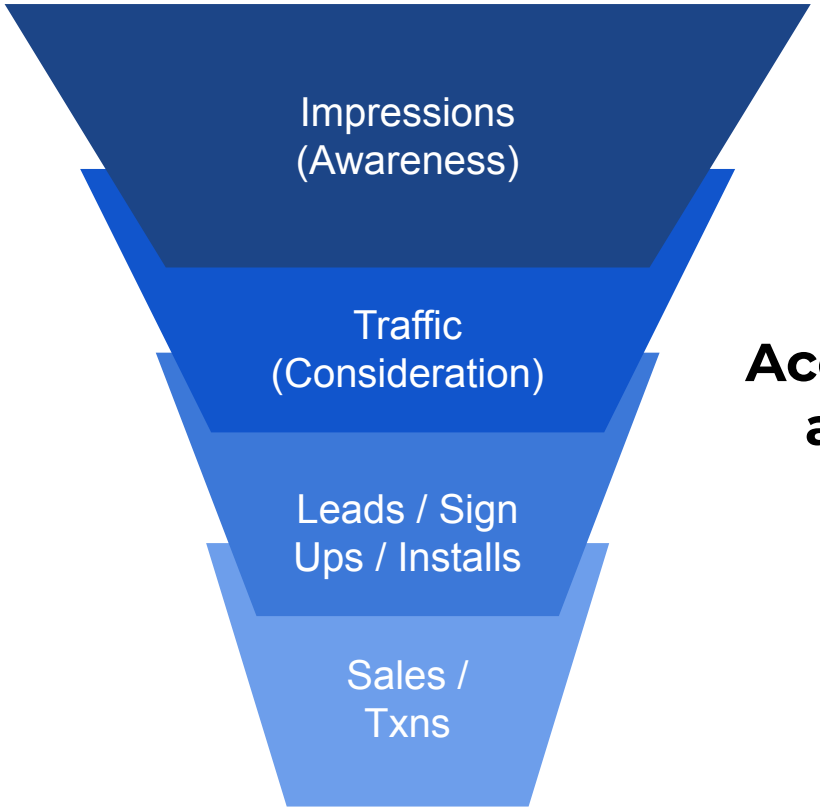


Purchase Funnel



Proxy metrics at each step of the funnel stand for a customer's likelihood to purchase (aka value)

Accessibility to Marketer

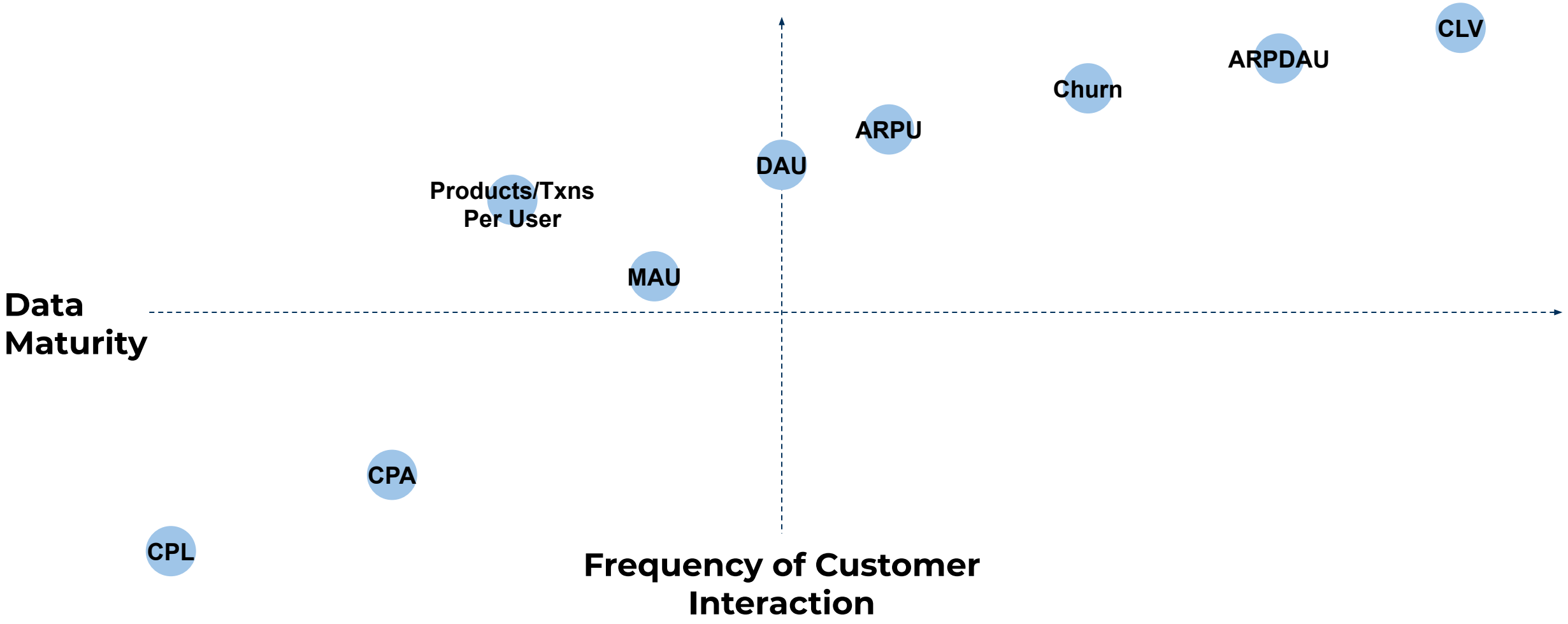


Accessibility and value are often inversely correlated

Value to Marketer

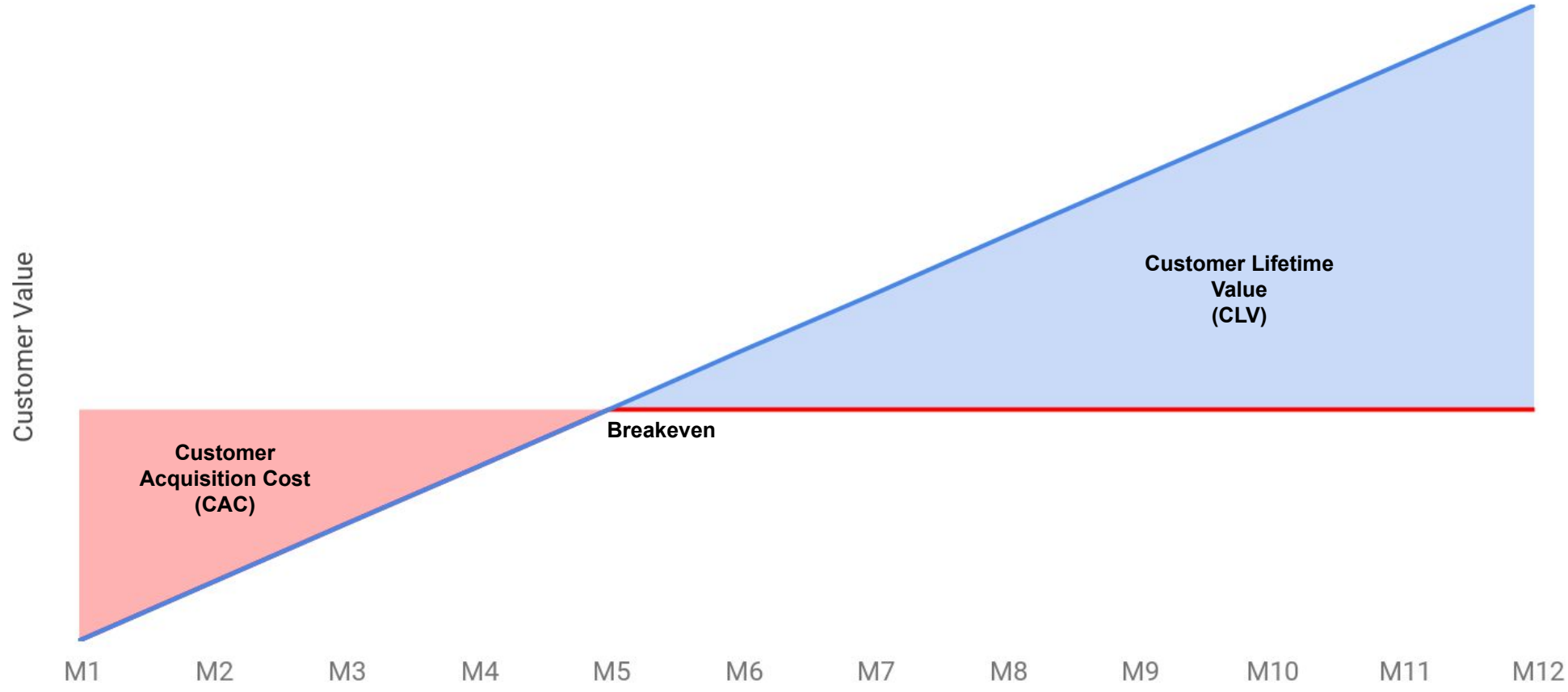
Terms	Meaning
CPL	Cost Per Lead
CPA	Cost Per Action
MAU	Monthly Active Users
Products/User	Products Per User
Transactions/User	Transactions Per User
DAU	Daily Active User
ARPU	Average Revenue Per User
Churn	How many users are leaving
ARPDAU	Average Revenue Per Daily Active User
CLV	Customer Lifetime Value

The “right” target metrics depend on a company’s maturity and frequency of customer interaction

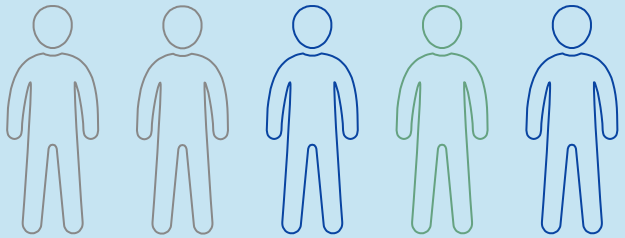


Terms	What's it good for
CPL: Cost per Lead	When you have a complex or undefined sales process
CPA: Cost per Action	When you have a specific action you want a user to do that results in something beneficial to your business
MAU: Monthly Active User	When you want to see a trend of your users over a long period of time
Products/User	When you want to optimize user product purchase behavior
Transactions/User	When you want to optimize user transaction numbers
DAU: Daily Active User	When you want to see a trend of your users over a short period of time
ARPU: Average Revenue Per User	When you want to know the effectiveness of project monetization for entire user base (not just paying users)
Churn	When you want to know the percentage of customers that stopped using your company's product or service during a certain time frame
ARPDAU	When you want to measure the effectiveness of finding paying users for new marketing campaigns
CLV: Customer Lifetime Value	When you want a metric that indicates the total revenue a business can reasonably expect from a single customer account

For retail banks, a key metric should be CLV: a combination of transaction/product-level revenue



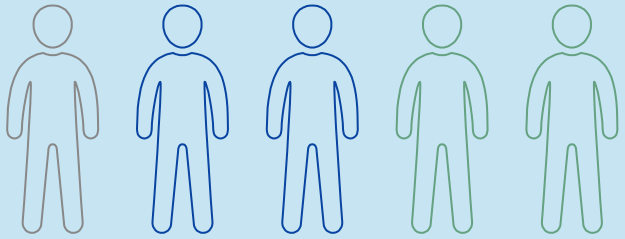
Attribution links target metrics (customers, transactions, etc) to marketing activities



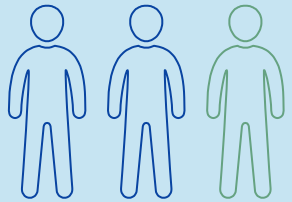
Target metric:
Conference Tickets Sold

Total Tickets Sold: 548

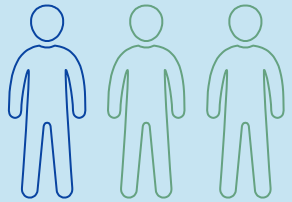
Avg Cost per Sale: $9.12



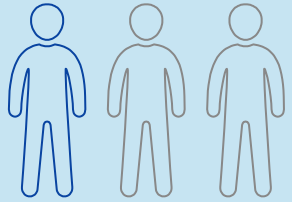
Campaign 1: Mall Event
Tickets Sold: 23
Event Cost: $1,000
Cost per Sale: $43.48



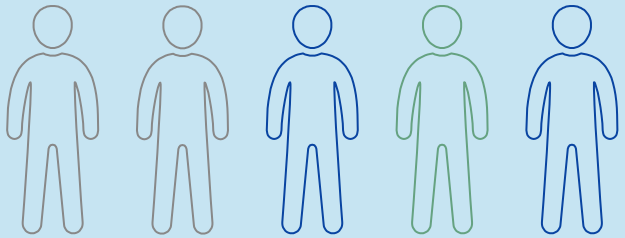
Campaign 2: Facebook Campaign
Tickets Sold: 225
Campaign Cost: $2,500
Cost per Sale: $11.11



Campaign 3: Referral Program
Tickets Sold: 300
Campaign Cost: $1,500
Cost per Sale: $5.45



The same principle applies to Segmentation, which (should) links metrics to customer characteristics



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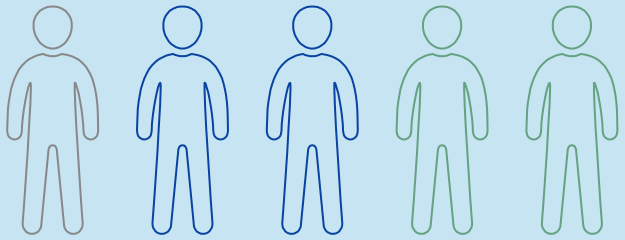
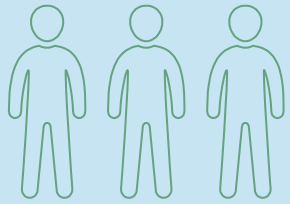
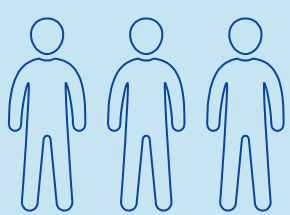
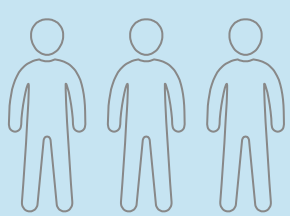




Age Between 18-24
Tickets Sold: 219
Attributed Cost: $2,302
Cost per Sale: $52.94

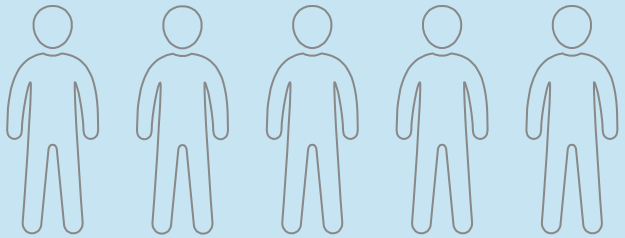


Age Between 25-34
Tickets Sold: 149
Attributed Cost: $1,112
Cost per Sale: $7.46



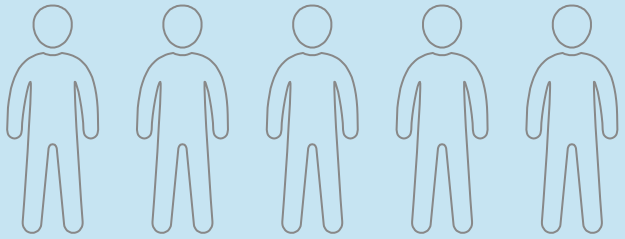
Age Between 35-44
Tickets Sold: 140
Attributed Cost: $1,586
Cost per Sale: $11.32

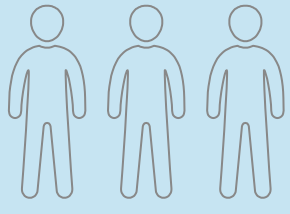
You can and should layer characteristics/activities to better understand marketing activity

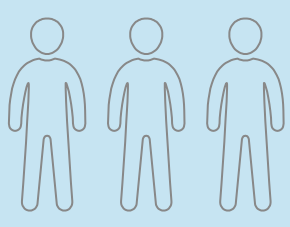


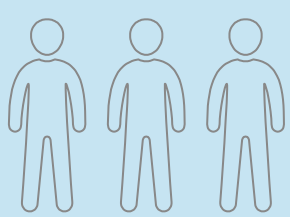
Total Sign Ups (Ages 35-44): 140

Avg Cost per Sale: $11.32









Campaign 1: Mall Event
Tickets Sold: 20
Attributed Cost: $812
Cost per Sale: $40.60

Campaign 2: Facebook Campaign
Tickets Sold: 20
Attributed Cost: $372
Cost per Sale: $18.60

Campaign 3: Referral Program
Tickets Sold: 100
Attributed Cost: $500
Cost per Sale: $5.00

Segmentation is just a way to classify data — it isn't limited to explicit characteristics like demographics

Demographic

Age
Income
Education
Job
Employer
Tenure
Ownership
Marital Status
with Children

Income/Age Ratio
# of Degrees
Worked at X Companies

Geographic

Continent
Country
Province
State
City
Village
Climate

X Miles away from...
Population Density
Urban/Rural
City Size
Terrain

Behavioral
(Usage patterns, propensity)

User Status
Depth of Engagement
Frequency
Likelihood to

Time spent per day
Total orders per month
Average order amount

Likelihood to Return
Price/Conv Sensitivity

Psychographic
(Activities, attitudes, personality, etc)

Interested in
Believes in
Agrees with
Disagrees with
Motivated by

Family Oriented
Likes Dogs
Disagrees with RH law
Does things last minute
Utility-driven


USE YOUR
IMAGINATION

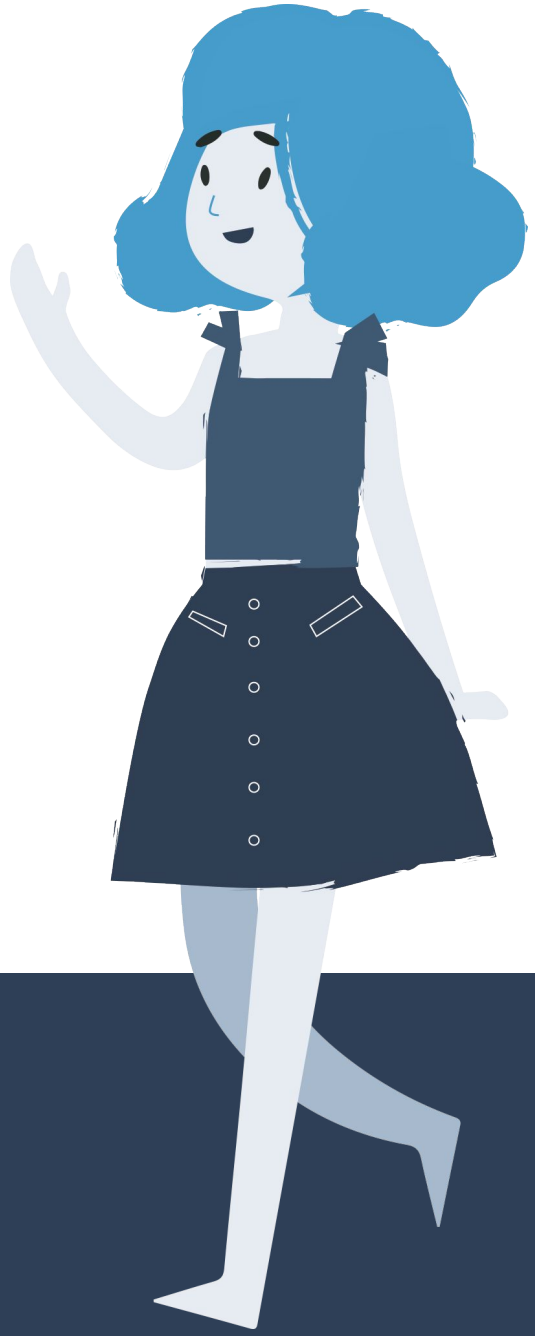
Allocation amounts to shifting resources to higher-efficiency activities/segments

Before ($9.12/sale)		After ($7.30/sale)
Campaign 1: Mall Event Tickets Sold: 23 Event Cost: $1,000 Cost per Sale: $43.48	Worst performing activity, stopped	
Campaign 2: Facebook Campaign Tickets Sold: 225 Campaign Cost: $2,500 Cost per Sale: $11.11	Lowered budget and bid cap	**Campaign 2: Facebook Campaign** Tickets Sold: 184 Campaign Cost: $1,500 Cost per Sale: $8.14
Campaign 3: Referral Program Tickets Sold: 300 Campaign Cost: $1,500 Cost per Sale: $5.00	Increased incentive amount to $7/ticket	**Campaign 3: Referral Program** Tickets Sold: 500 Campaign Cost: $3,500 Cost per Sale: $7.00

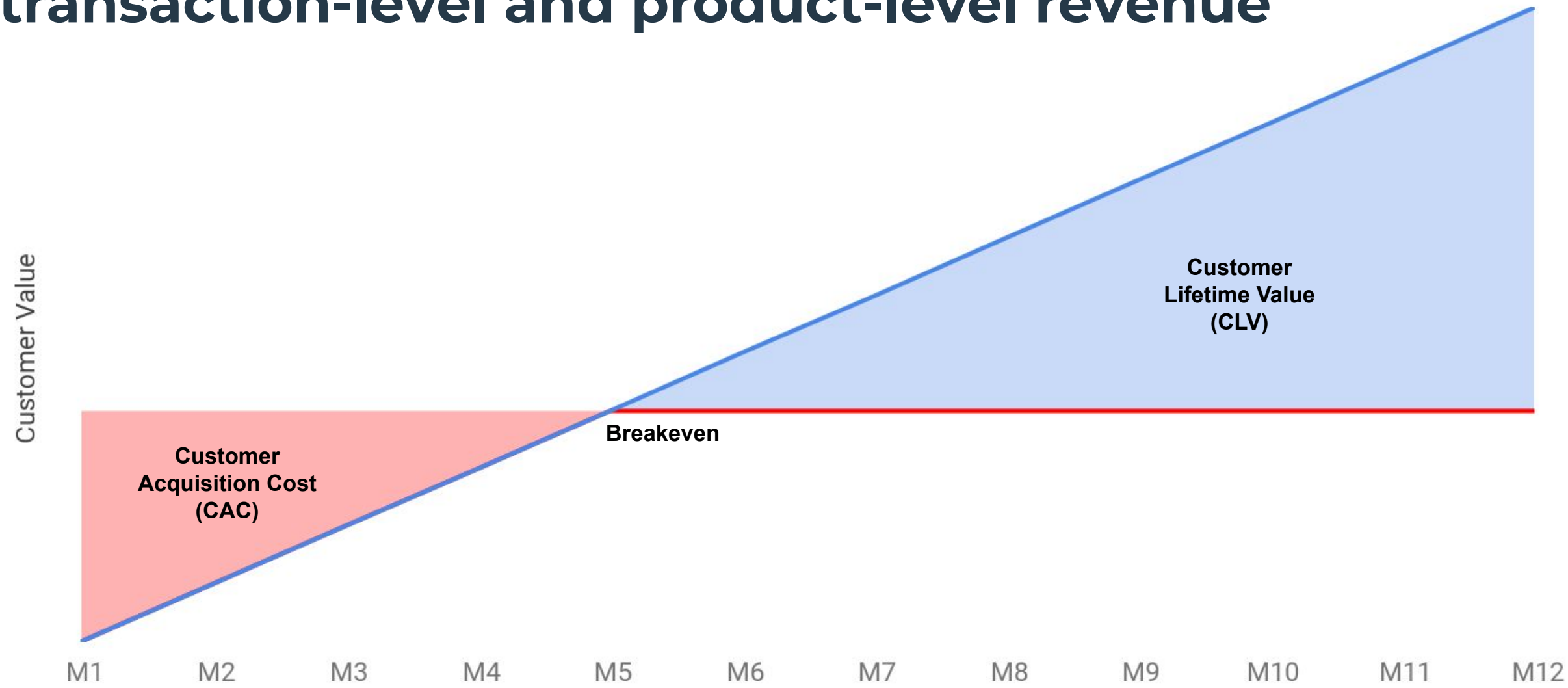
Marketing analytics measures, analyzes, and manages the effectiveness of marketing activities

Marketing Analytics in Practice

Measurement: Valuation & CLV

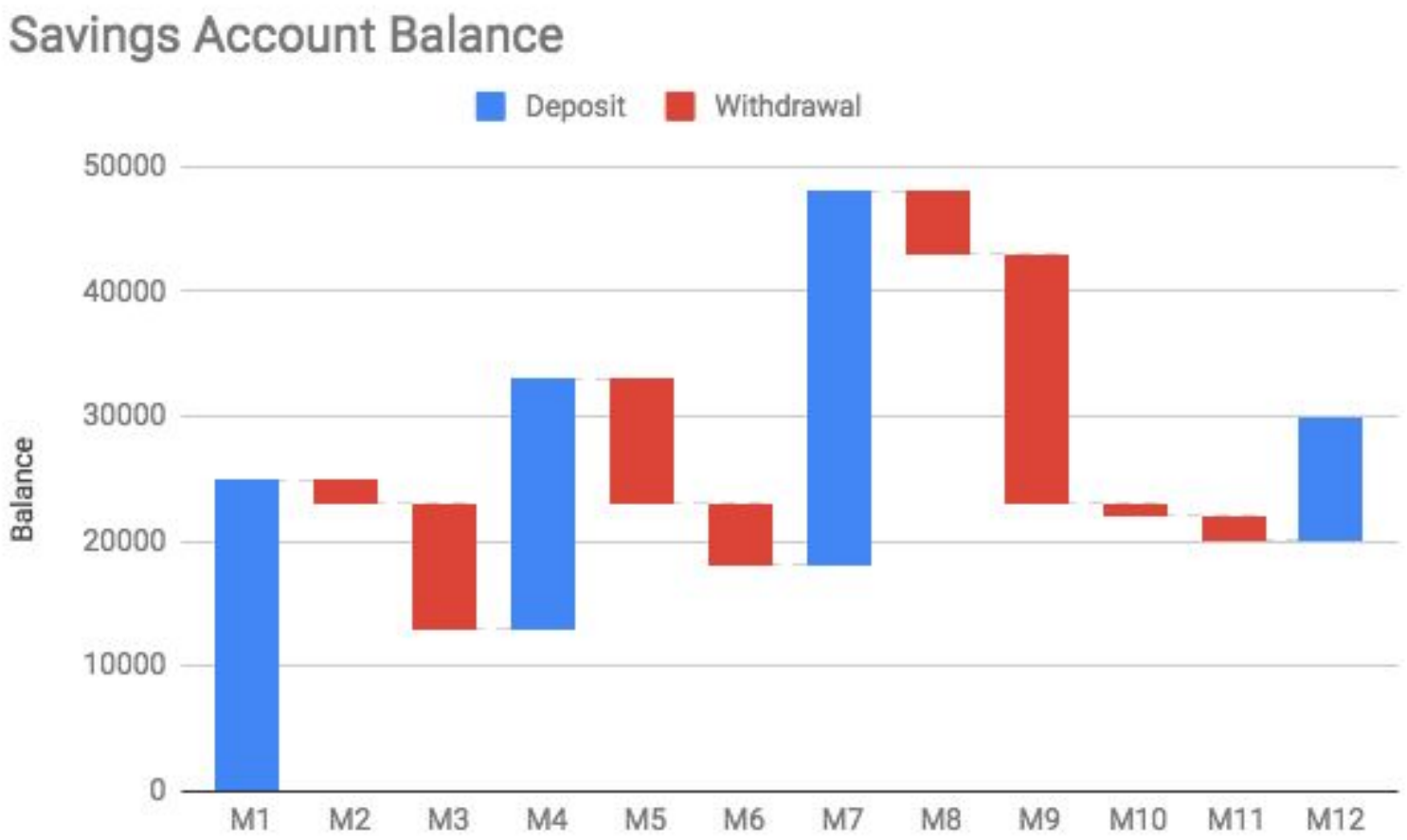


For retail banks, the key metric must become CLV, which is determined from a combination of transaction-level and product-level revenue



CLV is important as the majority of banking customers are technically unprofitable from single product-level view (product-level CLV-CAC)

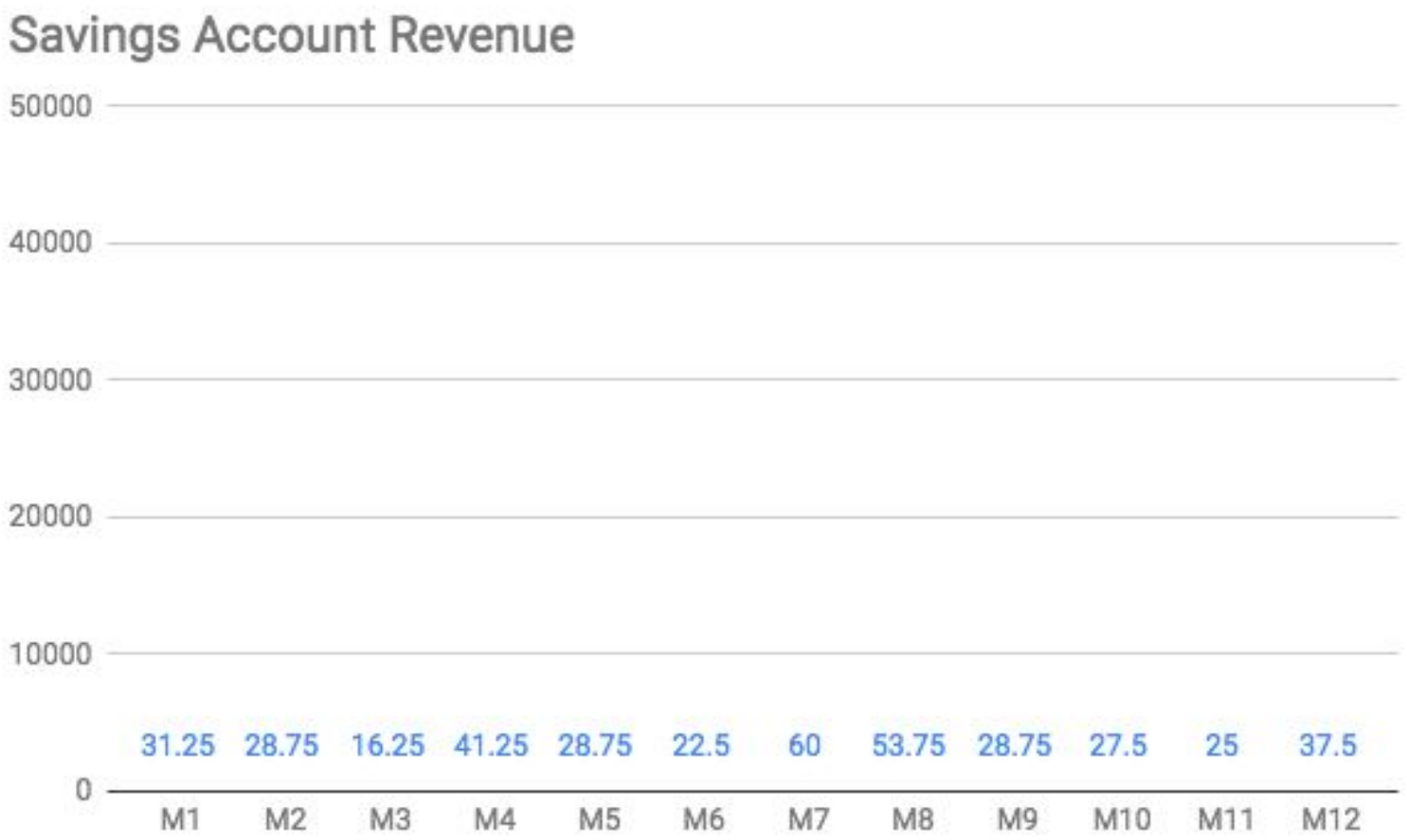
Customer Behavior / Transactions for Savings Accounts



Example

CLV is important as the majority of banking customers are technically unprofitable from single product-level view (product-level CLV-CAC)

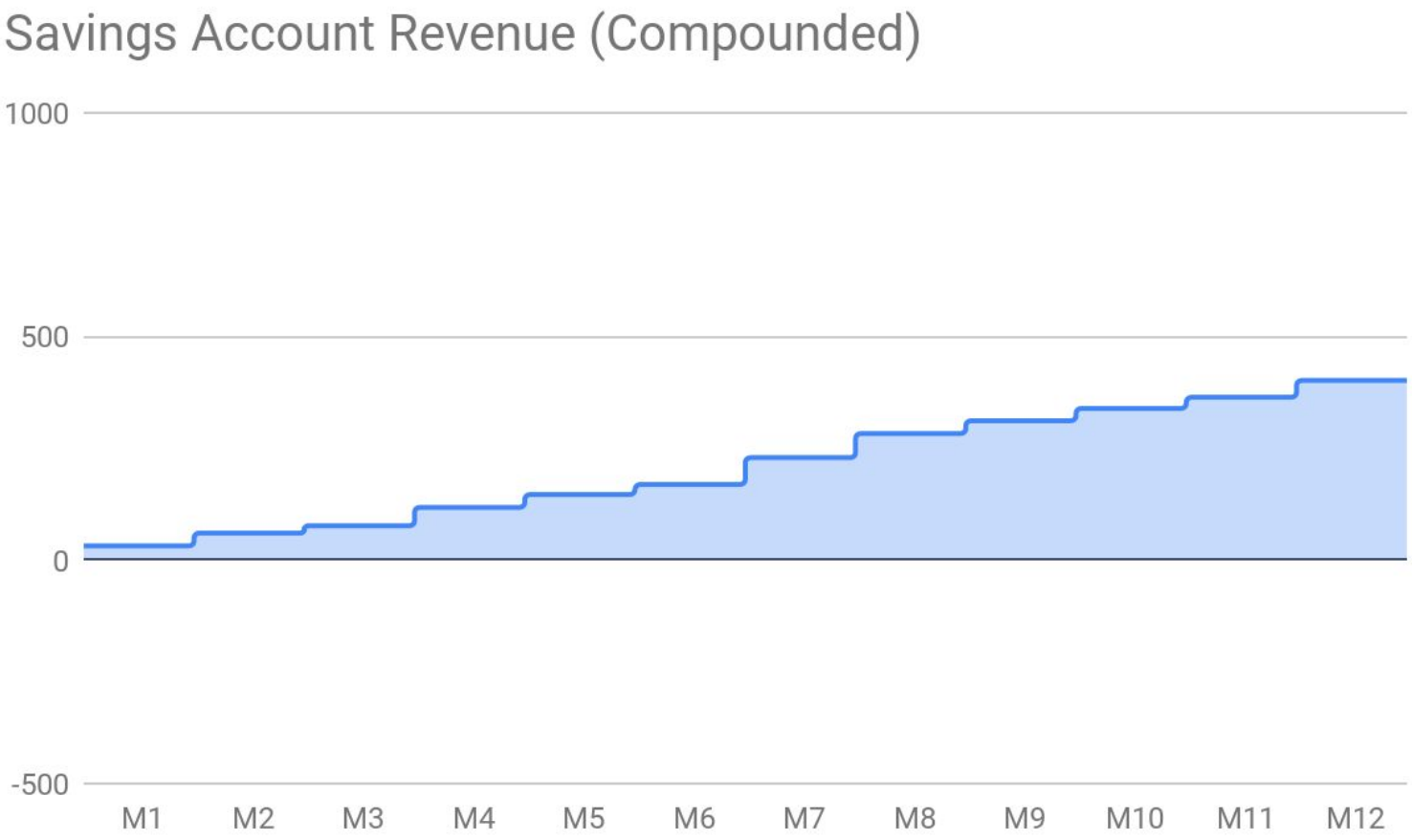
Revenue from Said Product



Example

CLV is important as the majority of banking customers are technically unprofitable from single product-level view (product-level CLV-CAC)

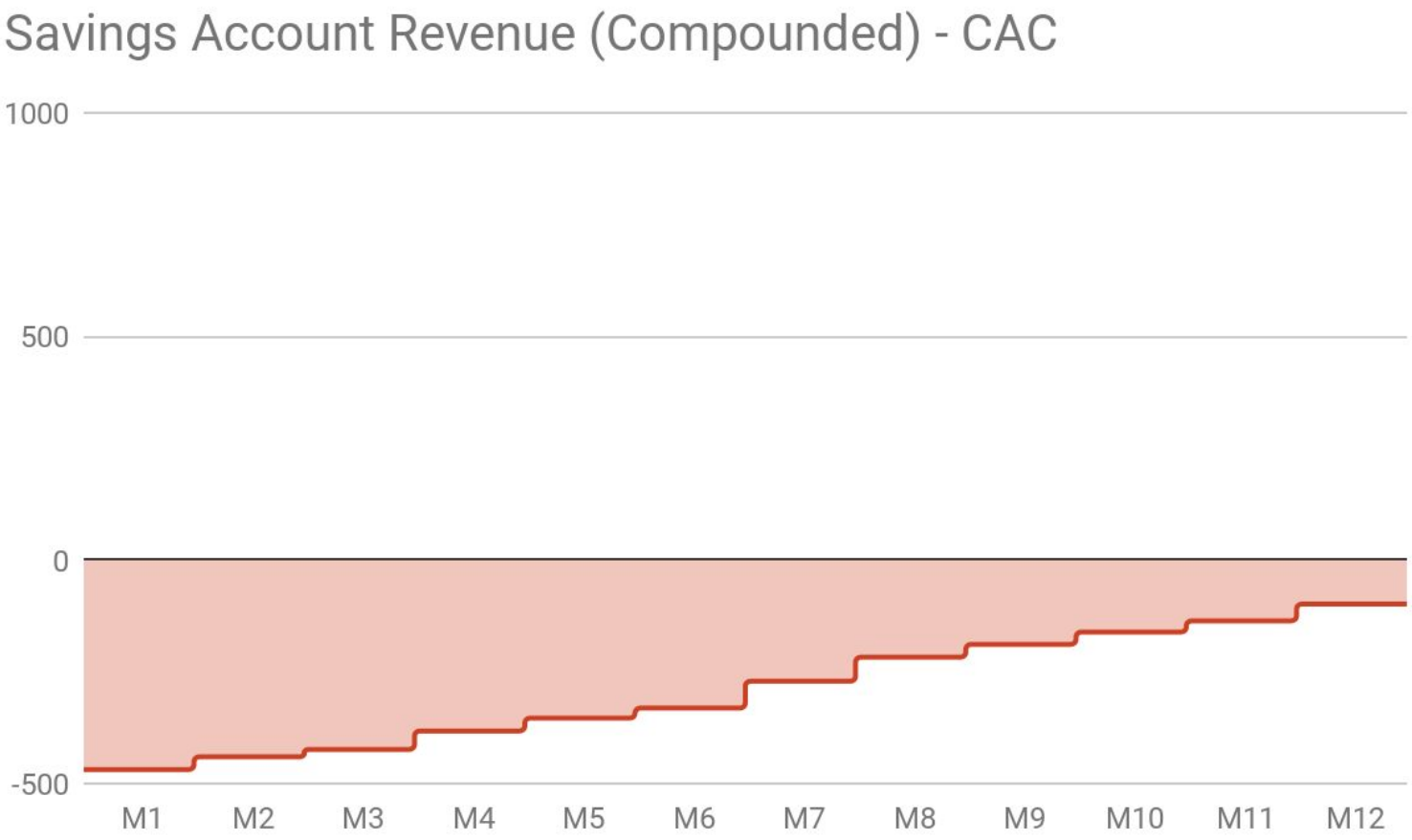
Compounded Revenue from Said Product



Example

CLV is important as the majority of banking customers are technically unprofitable from single product-level view (product-level CLV-CAC)

But what happens when you add in an acquisition cost of PHP500?

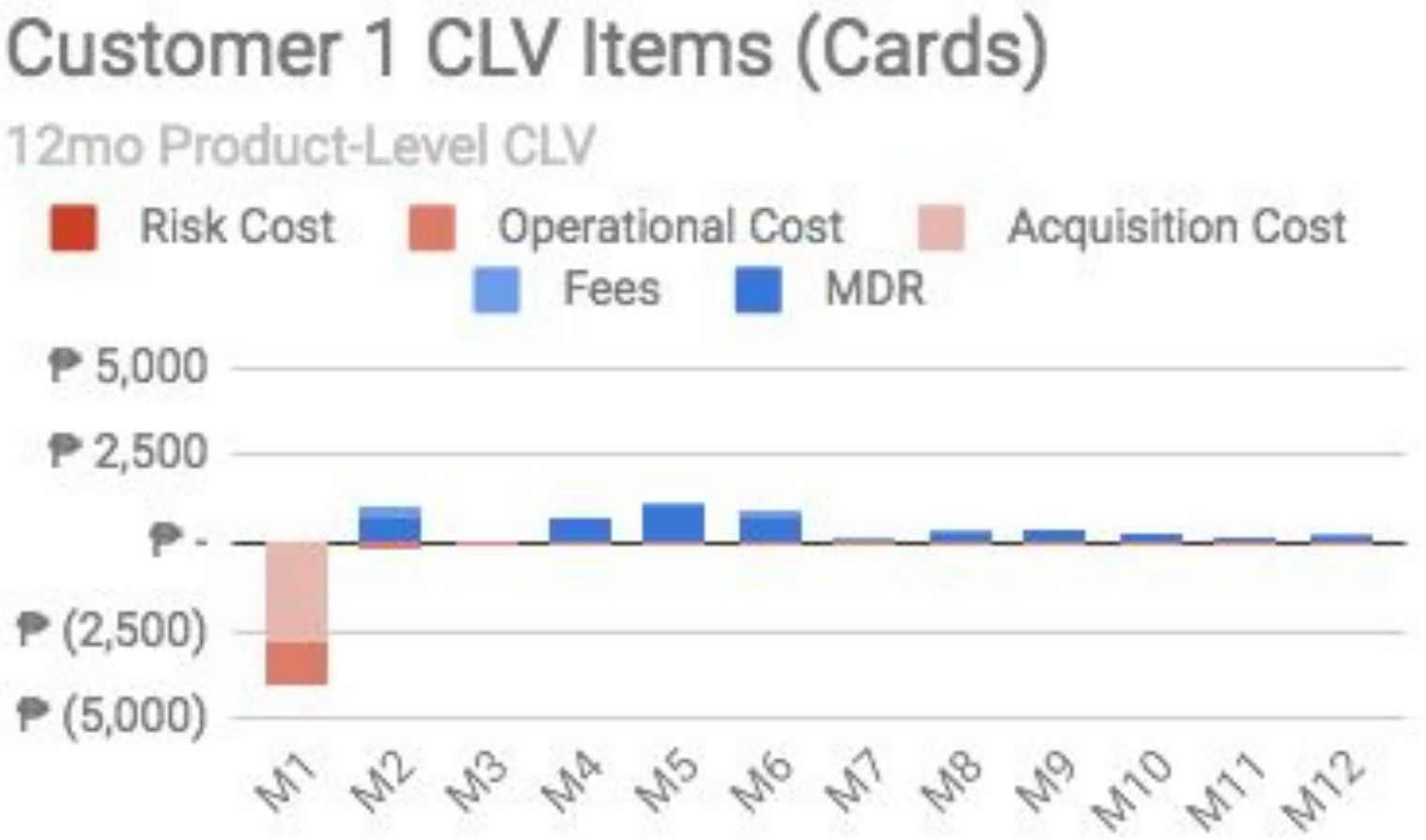


Example

CLV in retail banking has one a fundamental difference: the necessary inclusion of risk cost

To understand “risk cost”, let’s take a look at the profitability of 3 hypothetical credit card customers over 12mo

Customer #1
Customer who uses his credit card regularly and pays his bills in full and on time



Example

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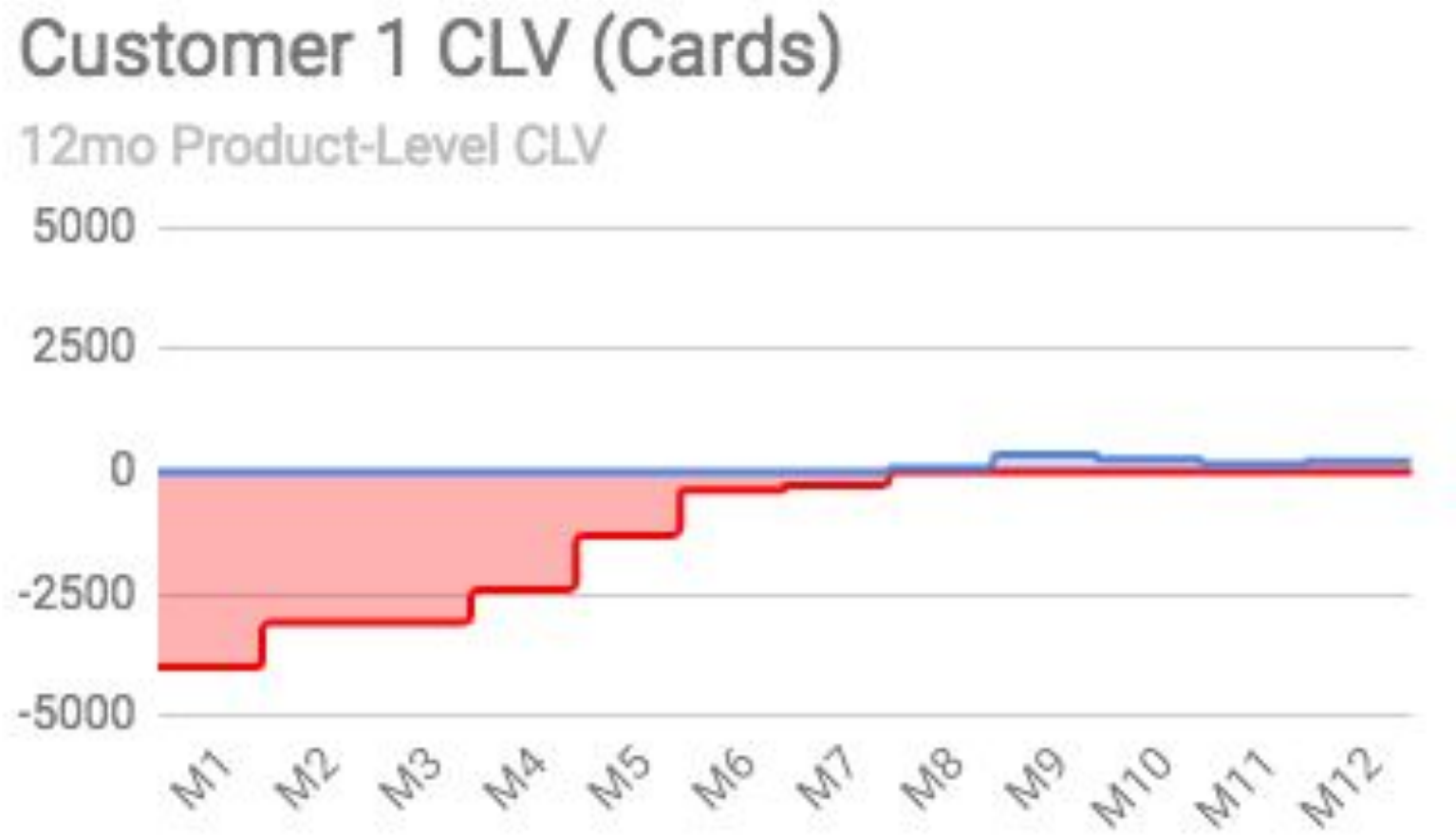
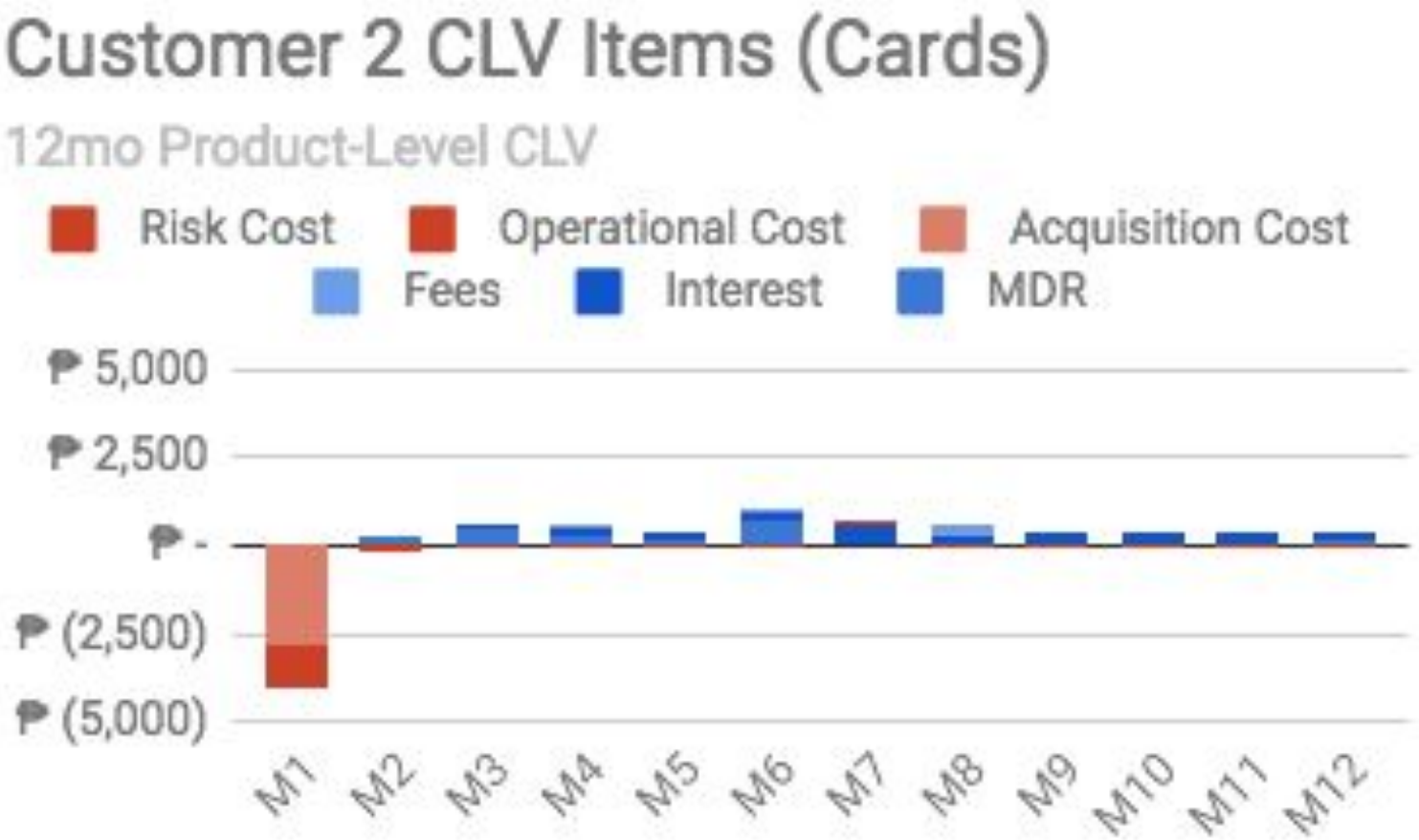


Example

To understand “risk cost”, let’s take a look at the profitability of 3 hypothetical credit card customers over 12mo

Customer #2
Customer who uses his credit card regularly and carries a balance



Example

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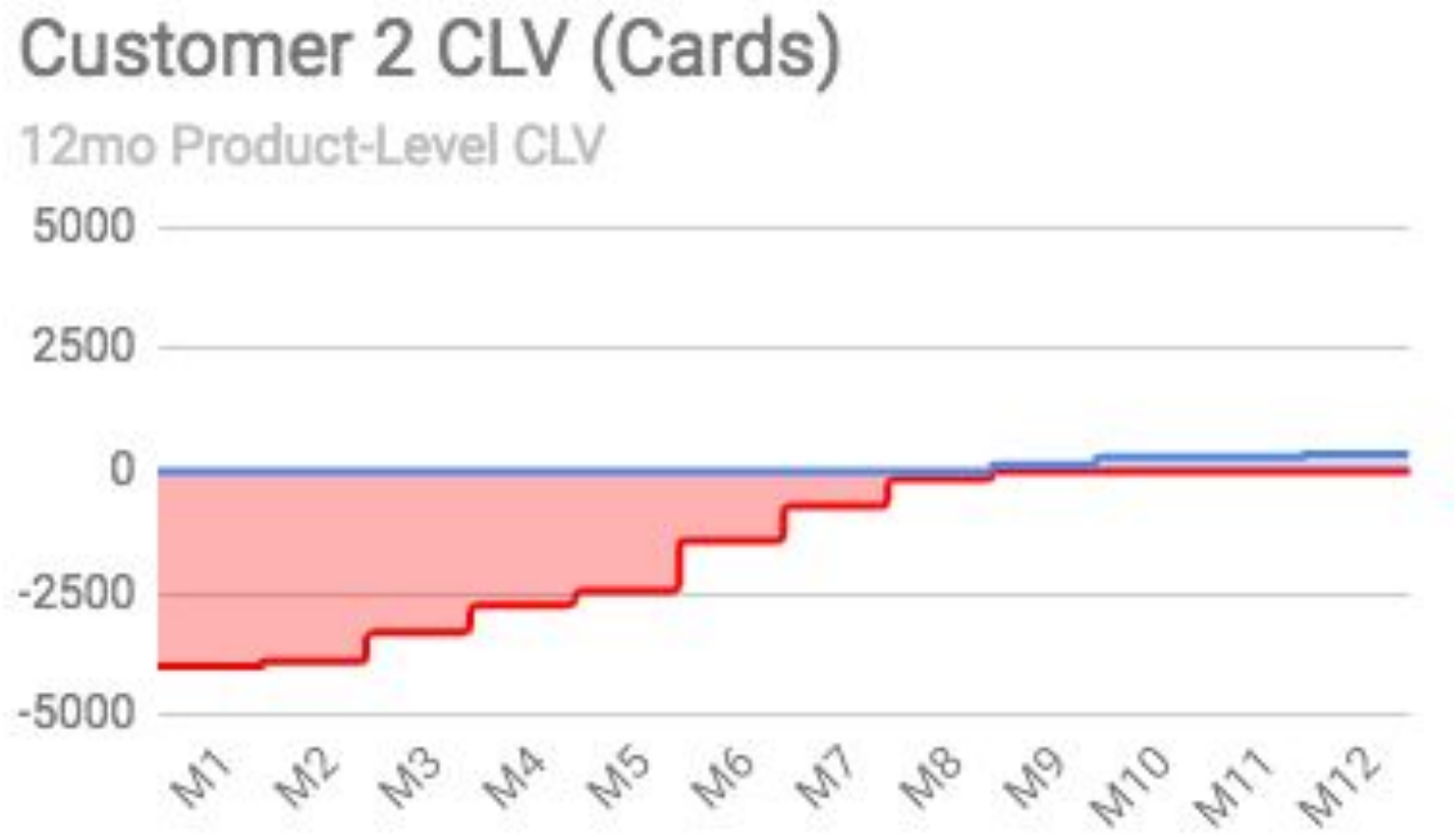
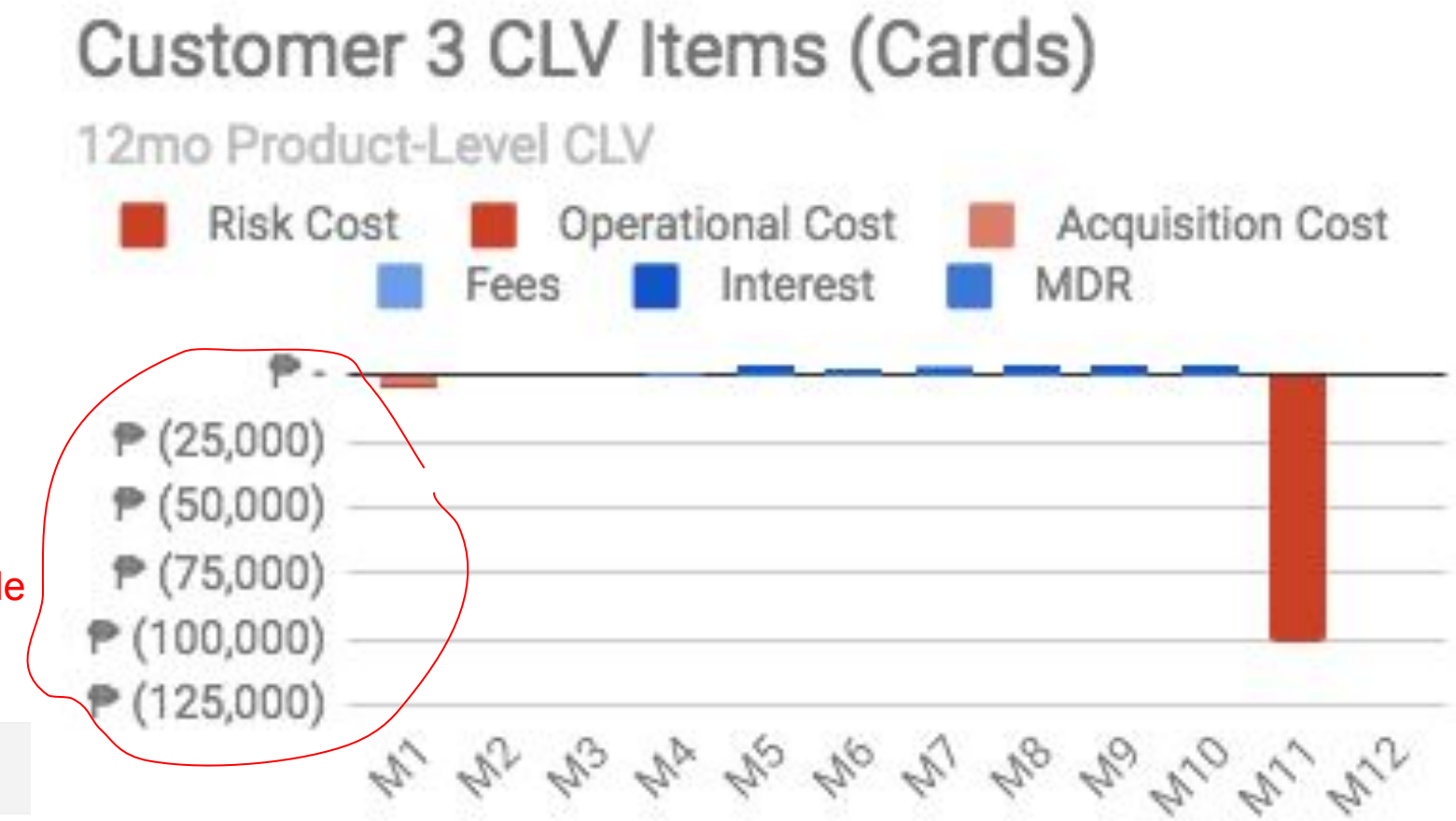


Example

To understand “risk cost”, let’s take a look at the profitability of 3 hypothetical credit card customers over 12mo

Customer #3
Customer who uses his credit card regularly and carries interest but stops paying his balance in the 11th month



Note change in scale

Example

To understand “risk cost”, let’s take a look at the profitability of 3 hypothetical credit card customers over 12mo

Customer #3
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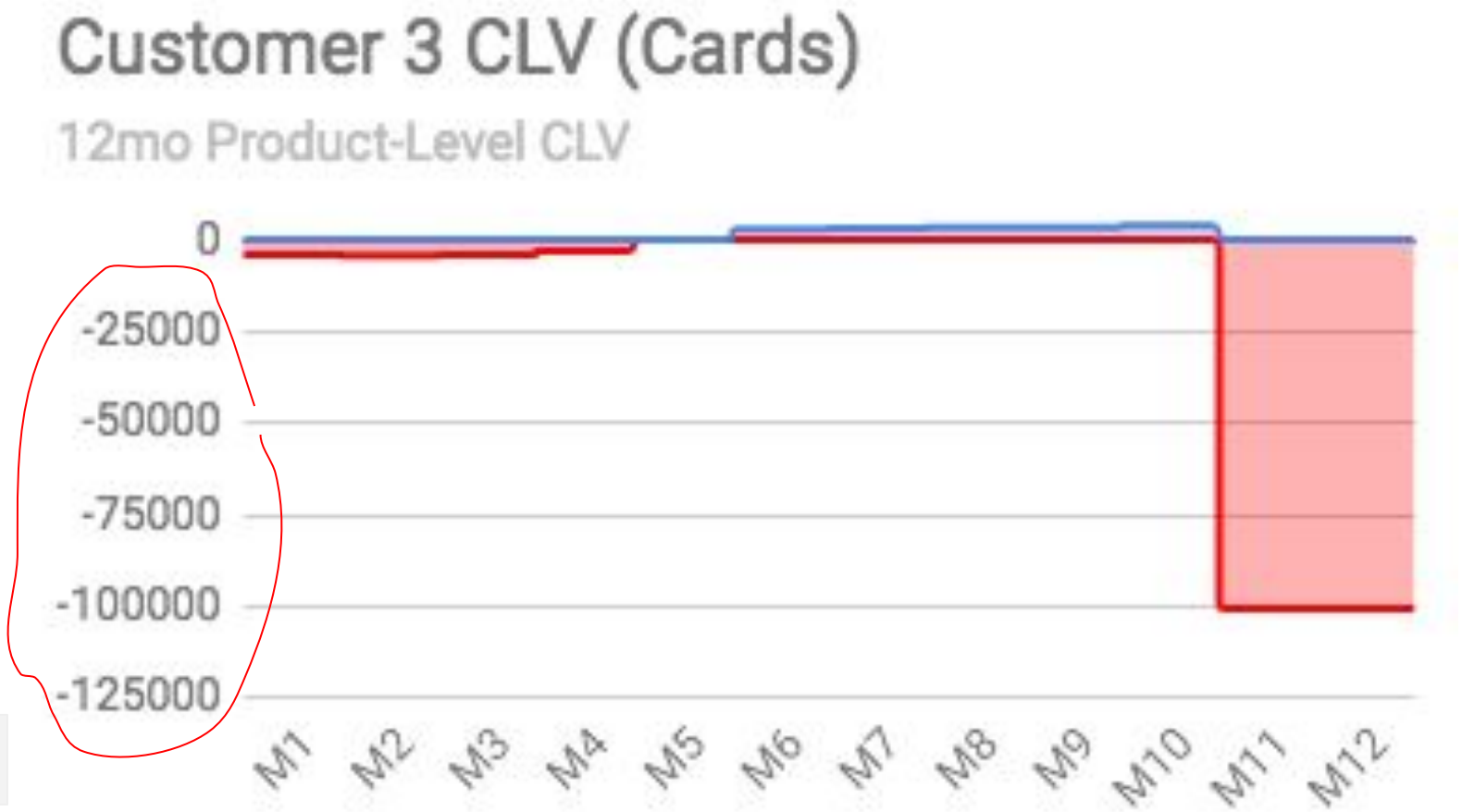
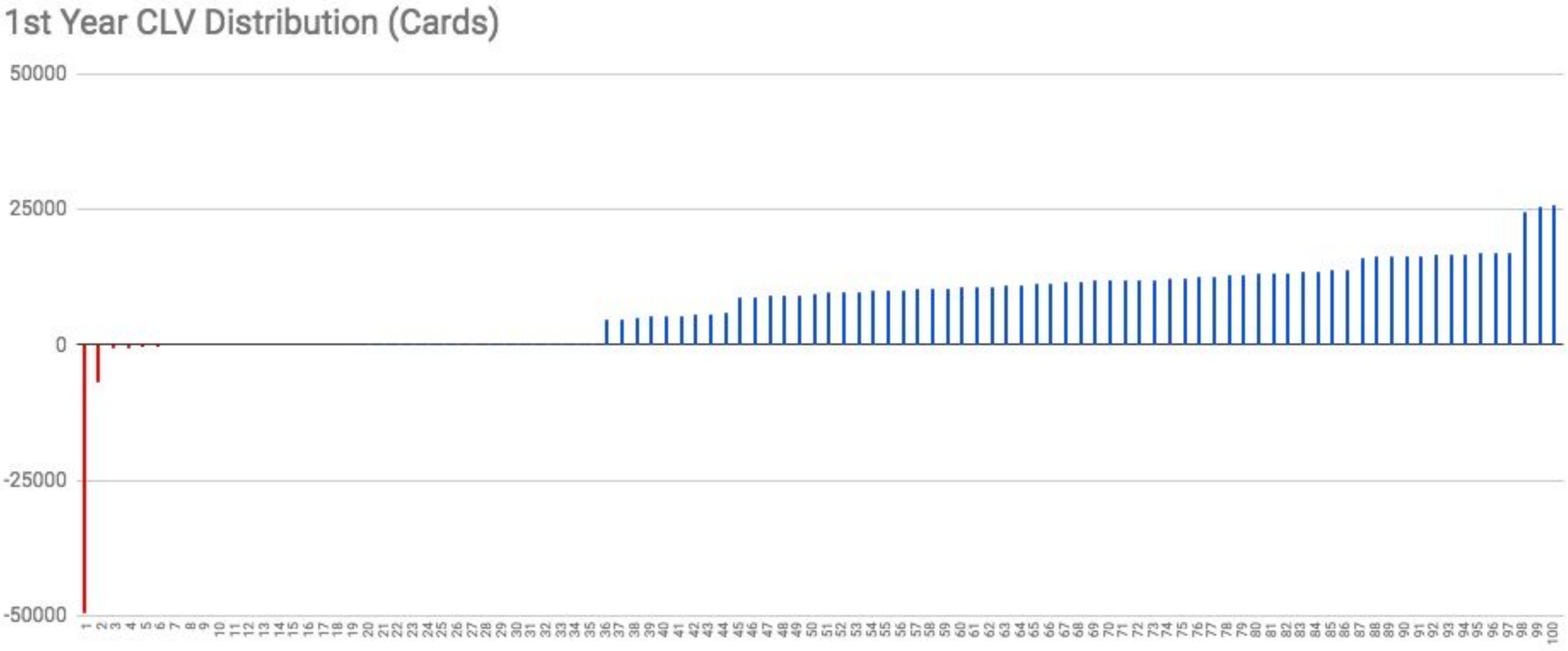


Note change in scale

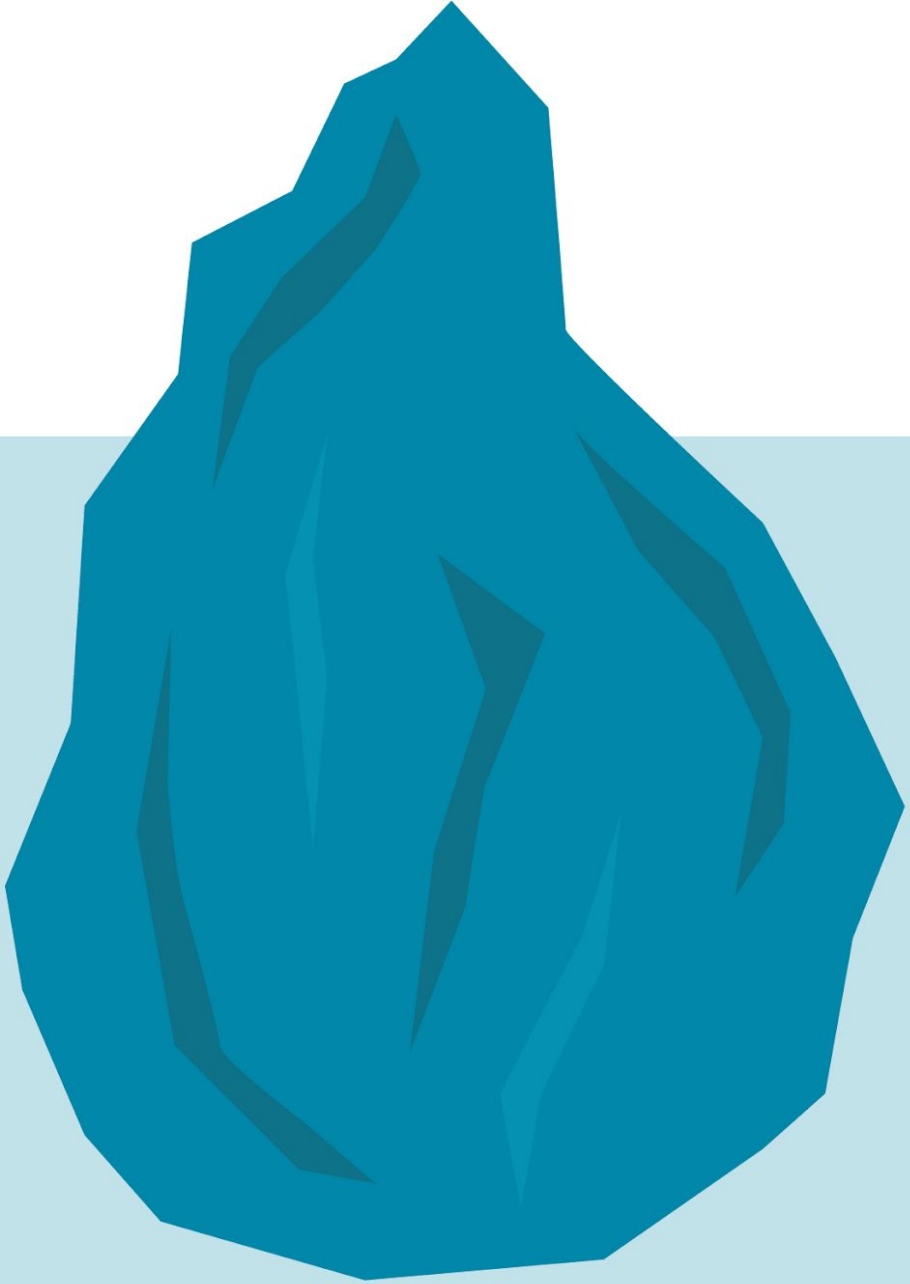
Example

Segmentation is key to driving value: CLV can vary widely across a customer base



Example

20%
CAUSES

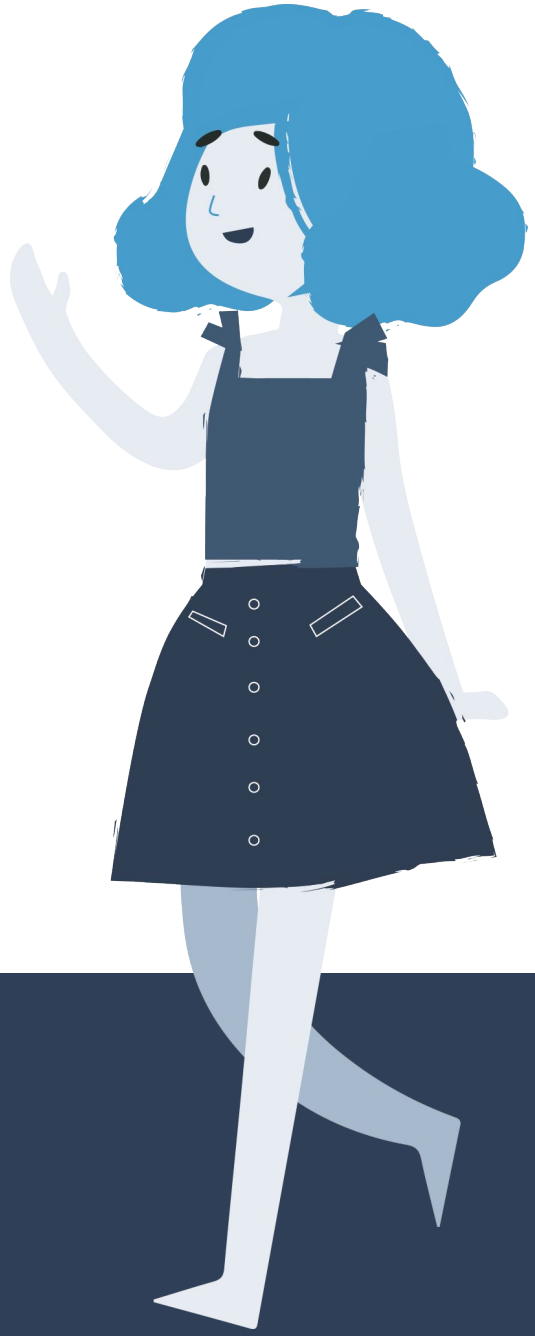


80%
EFFECTS

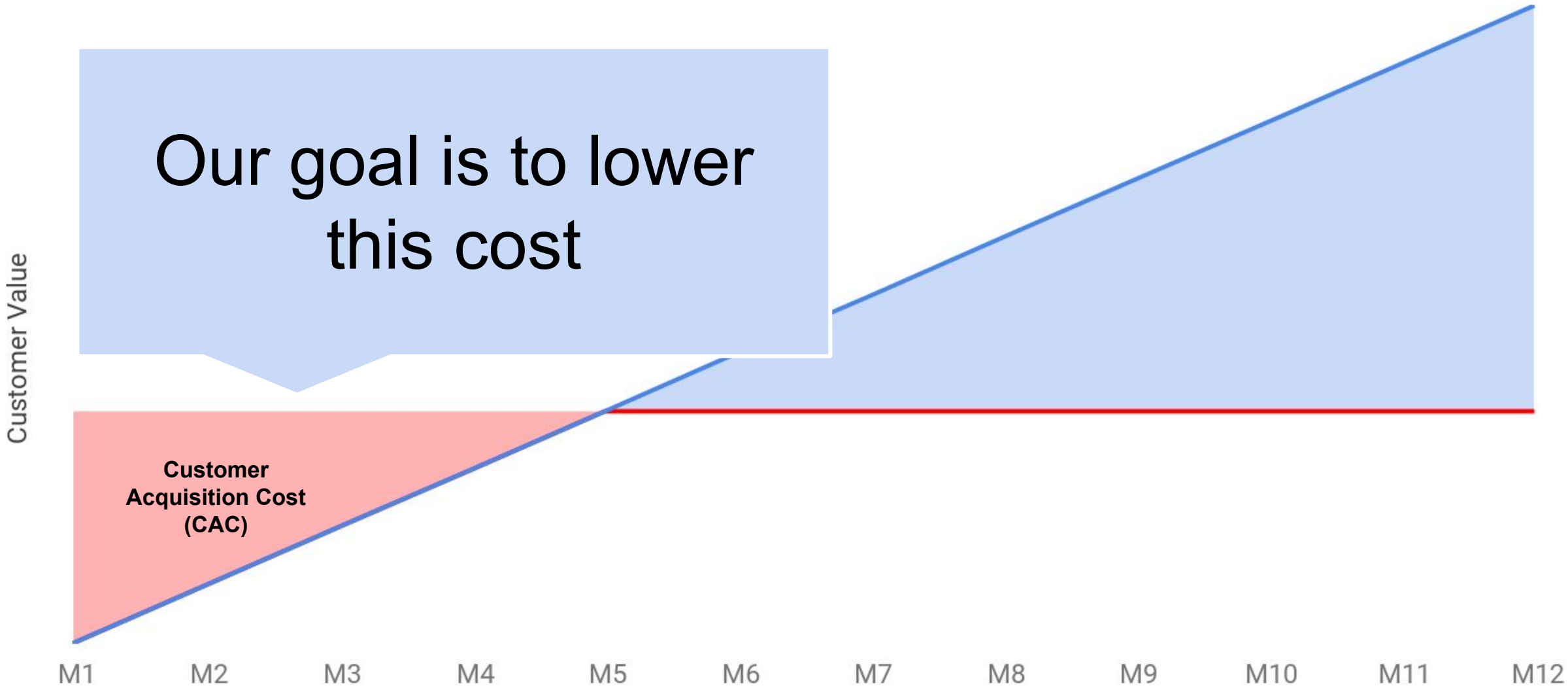
PARETO PRINCIPLE

Marketing Analytics in Practice

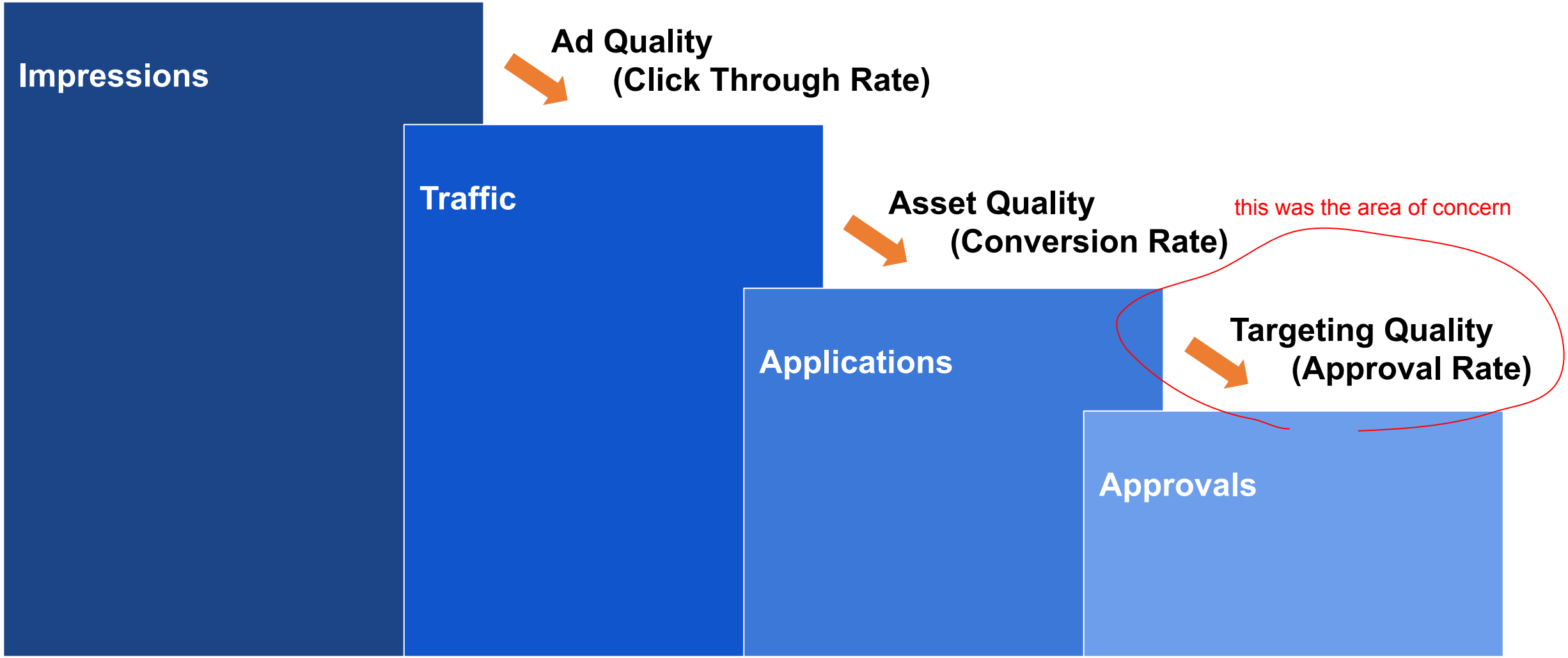
Analysis: Segmentation



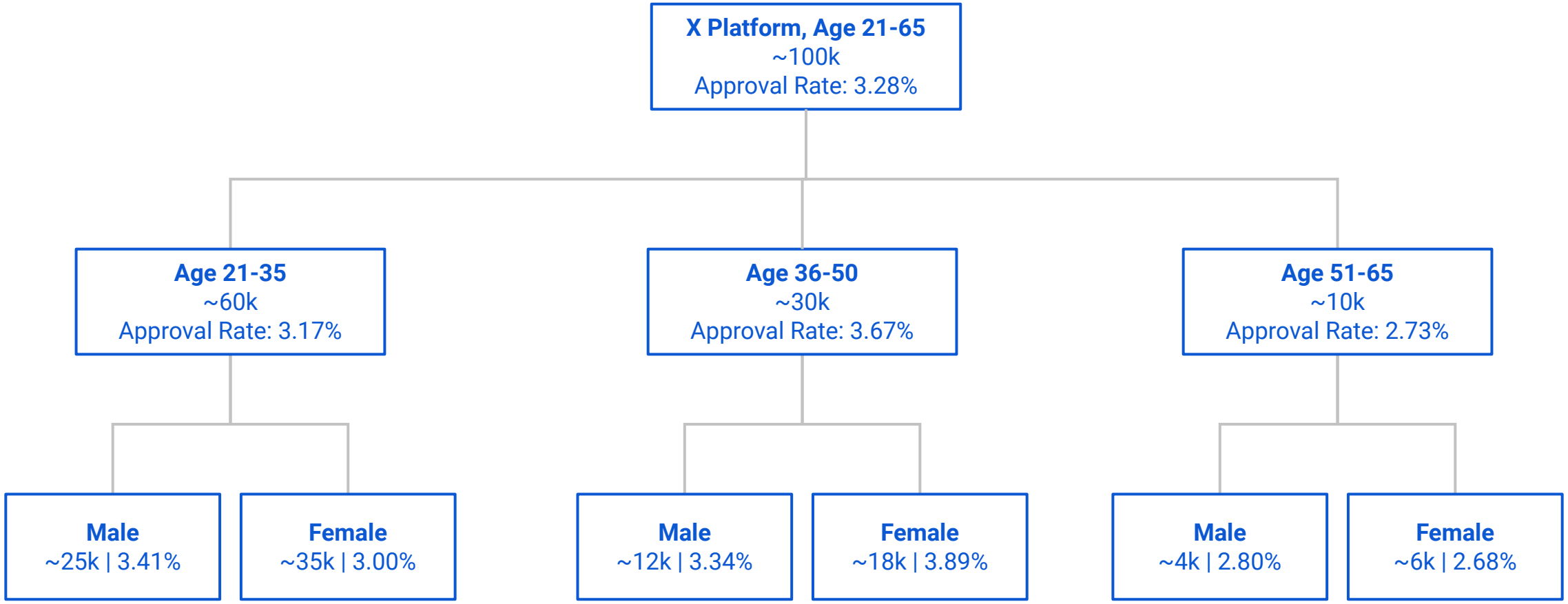
How did we use use segmentation to lower our CAC? (and hypothetically increase customer profitability)



Customer acquisition process flow / funnel for consumer finance (loans, etc)

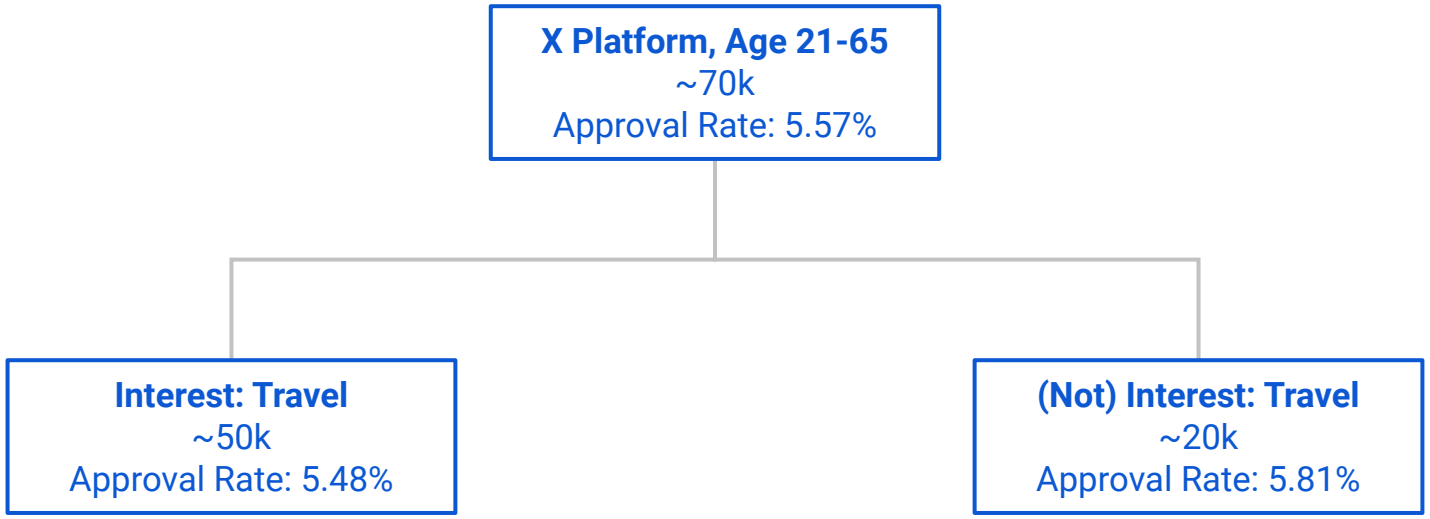


Traditional Demographic segments had low variance in approval rates



Example

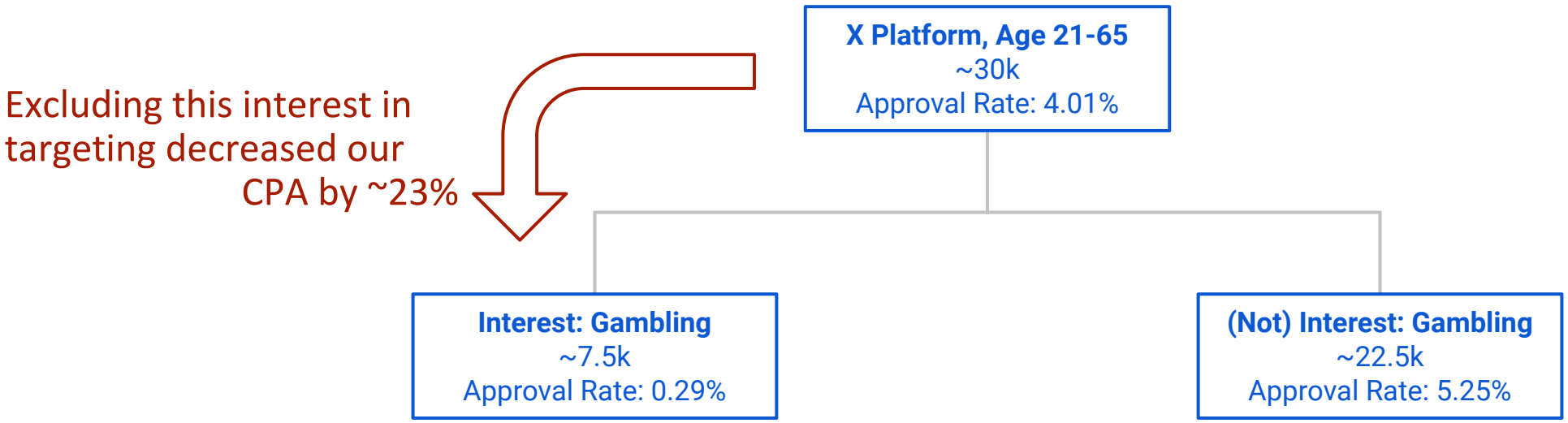
The same was true of some natively available Psychographic Segments available for targeting on Facebook/Google



Example

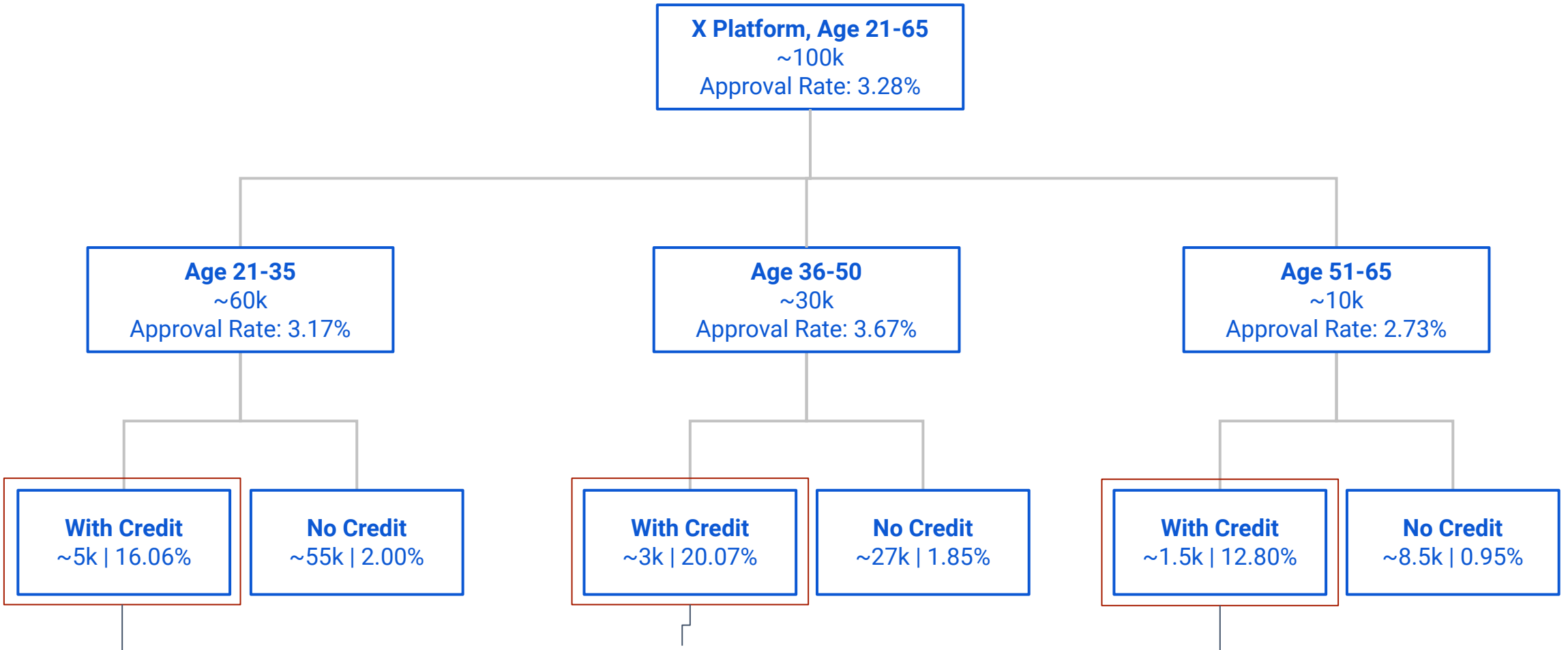
TL;DR
A lot of the marketing decisions we were making had ~zero impact

We looked for high variance segments using available Facebook targeting options; in this case, the action was exclusion leading to a decrease in CAC



Example

We also created lookalike audiences based on other identified high value segments

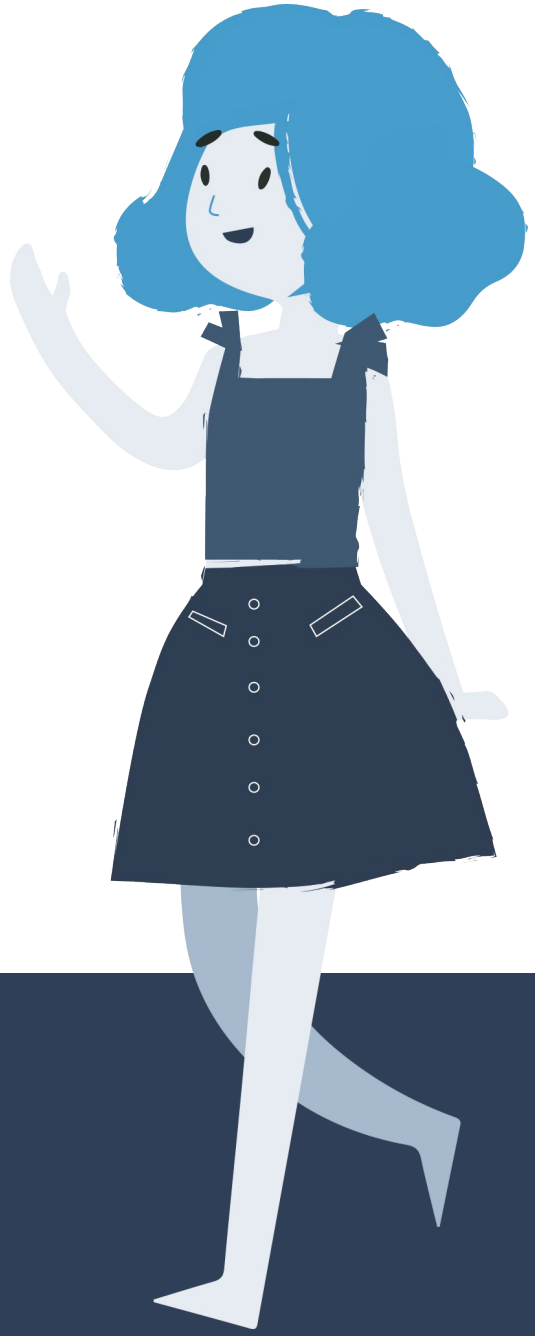


Creating a lookalike audience of “with credit” users created a new targeting segment with a CPA that was ~73% lower than average

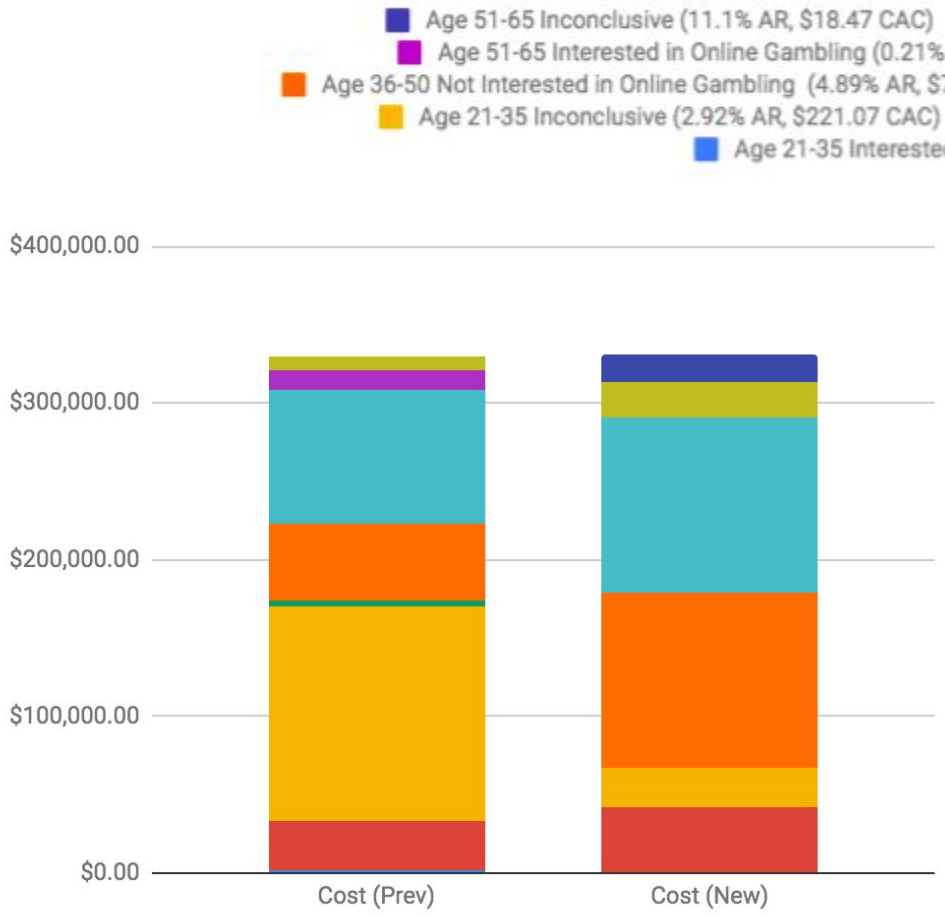
Example

Marketing Analytics in Practice

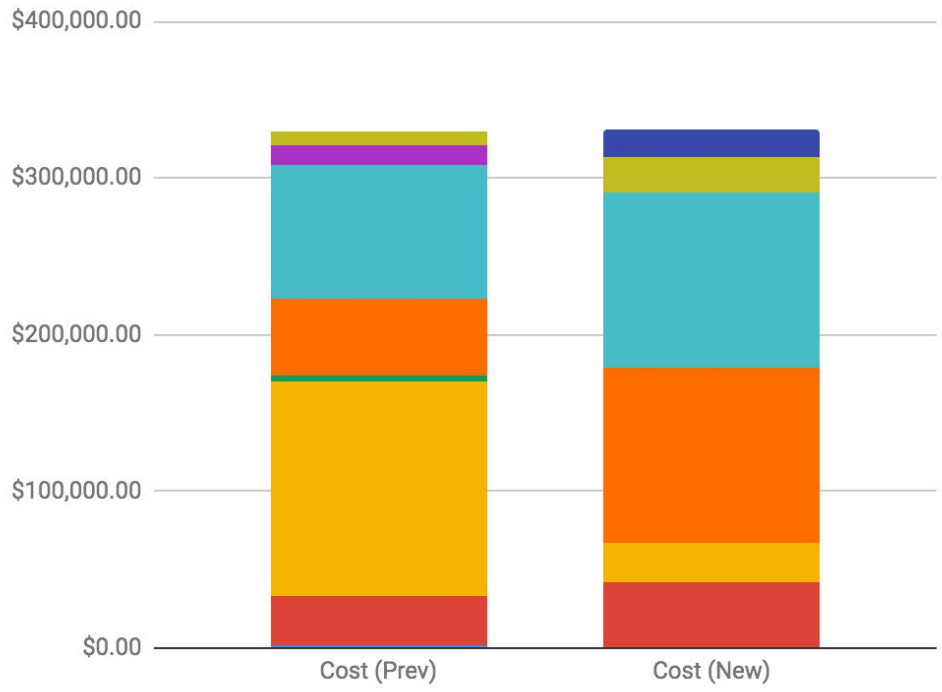
Management: Allocation



Then we allocated marketing spend to target high value customers to decrease overall CAC



Same spend



But 59% more customers
37% decrease in average CAC

Q&A

Exercise Time!

Spreadsheet Link: https://urlzs.com/GZxyb

Go to File > Make a Copy

Scenario: Creative Education Platform

Your company launched in 2016, producing learning content geared for creatives.

The business is a subscription (6 or 12 mo) where users access unlimited content. After registration, users access content free for the first 30 days

Content produced includes film, design, art, etc education.

Your company wants to understand whether the current marketing strategy is bringing in the right customers

Exercise 1: Calculate CLV and CAC

Your company wants to understand whether the current marketing strategy is working

Exercise 1: Calculate CLV and CAC

Your company wants to understand whether the current marketing strategy is bringing in the right customers

Exercise 2: Identify / create potential segments

Your company wants to know which customer types it should be going after next based on value

Exercise 3: Calculate CLV / CAC per segment

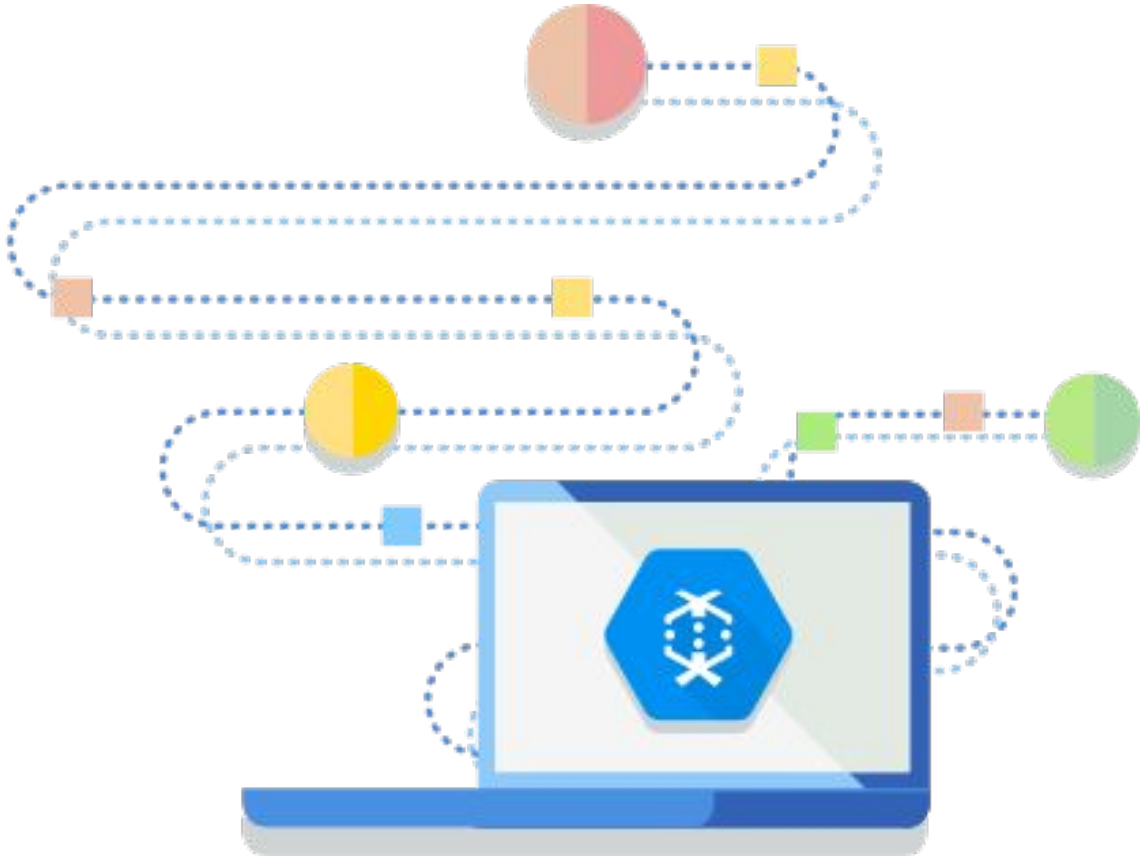
Your company wants to know which customer types it should be going after next based on value

Exercise 4: Make recommendations

Thanks!

gdy@securitybank.com.ph
+63 917 548 0396

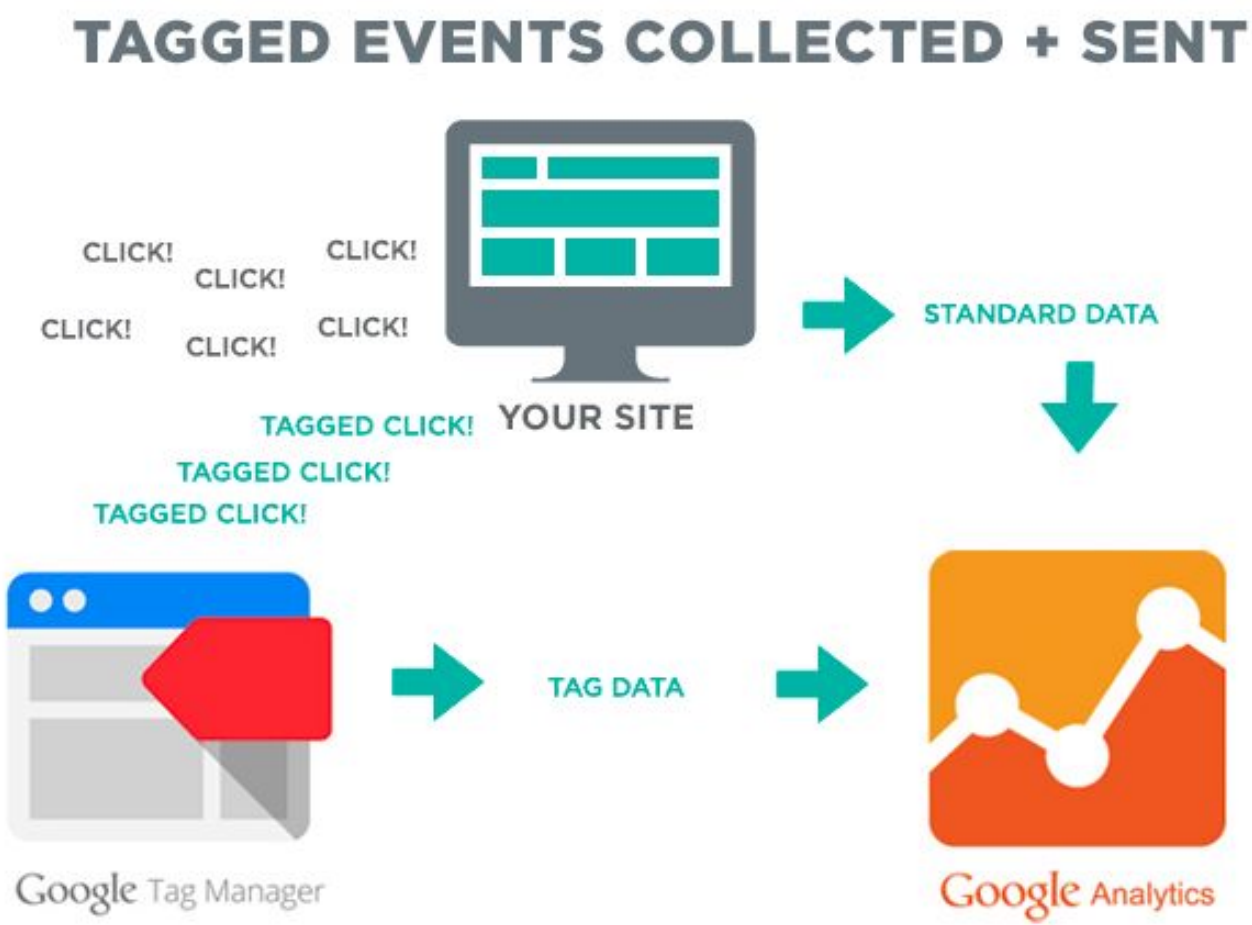
Attribution comes down to linking revenue generating actions (or customers) to costs and allocating them



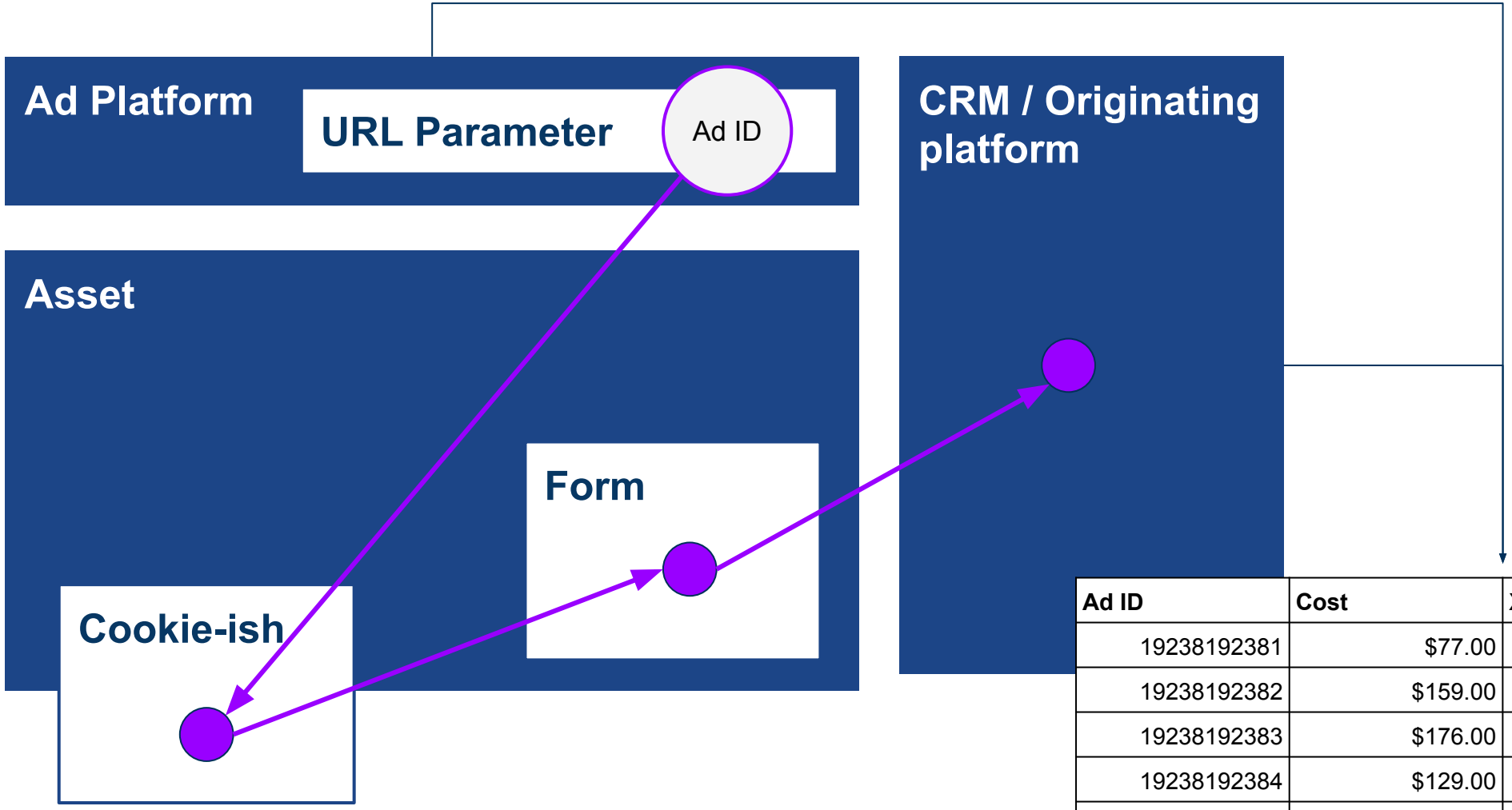
Attribution is basically

1) Setting up your data pipeline
2) Defining your match keys
3) Defining your target metrics
4) Linking your target metrics to costs

If your product's revenue-generating activity (or the activity you'd like to track) takes place completely online, it's (relatively) easy



But if your product's revenue-generating activity is offline, it amounts to linking cost and sales/revenue data using some type of match key

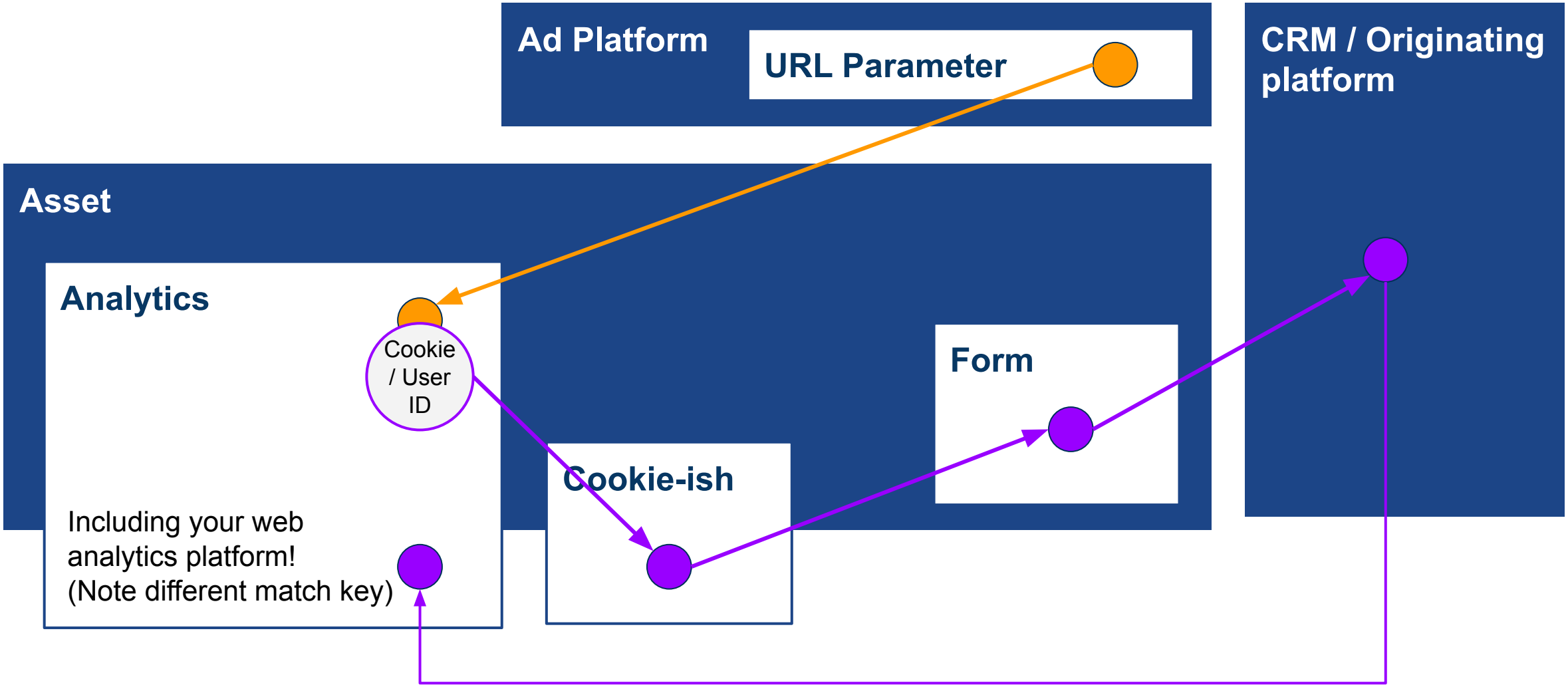


Reconciliation can occur in many ways / on many platforms

Ad ID	Cost	X (Target Metric)	Cost Per X
19238192381	$77.00	91	$0.85
19238192382	$159.00	60	$2.65
19238192383	$176.00	23	$7.65
19238192384	$129.00	67	$1.93
19238192385	$115.00		
19238192386	$196.00		

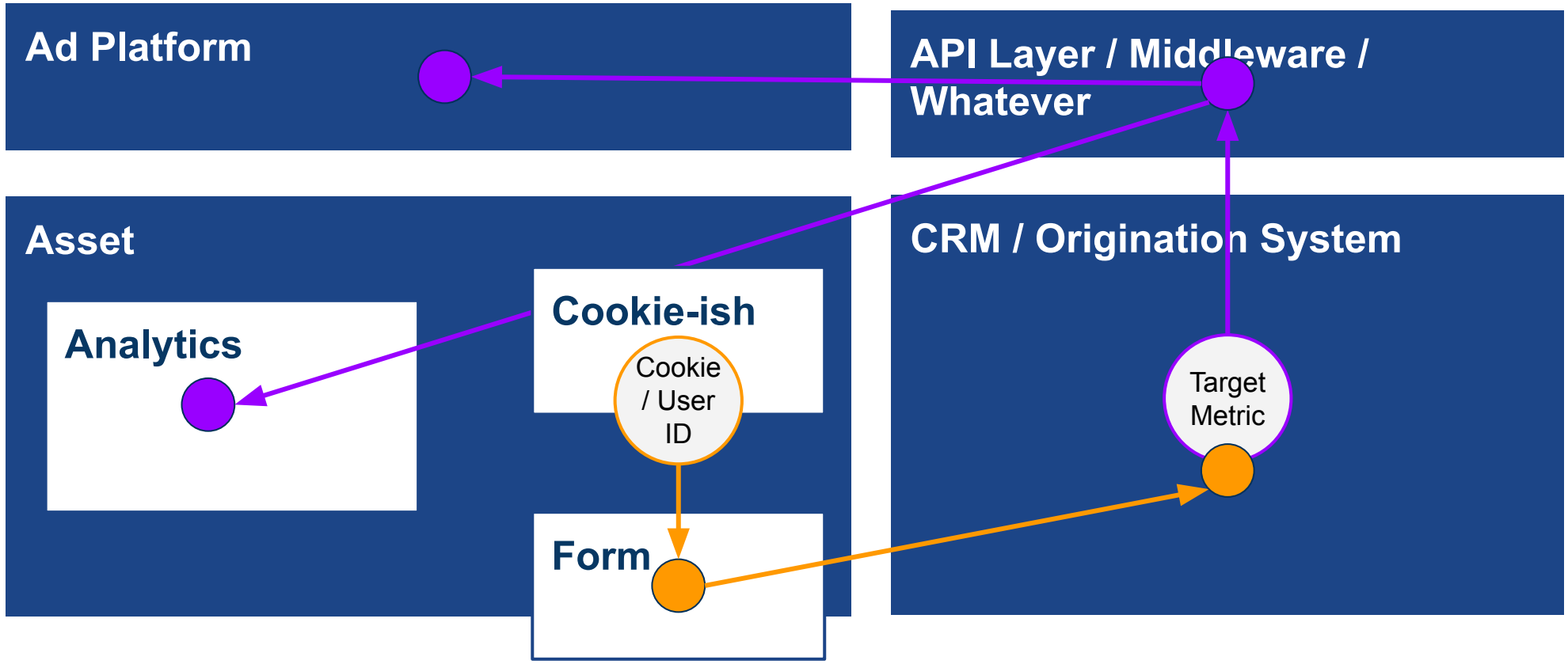
Example

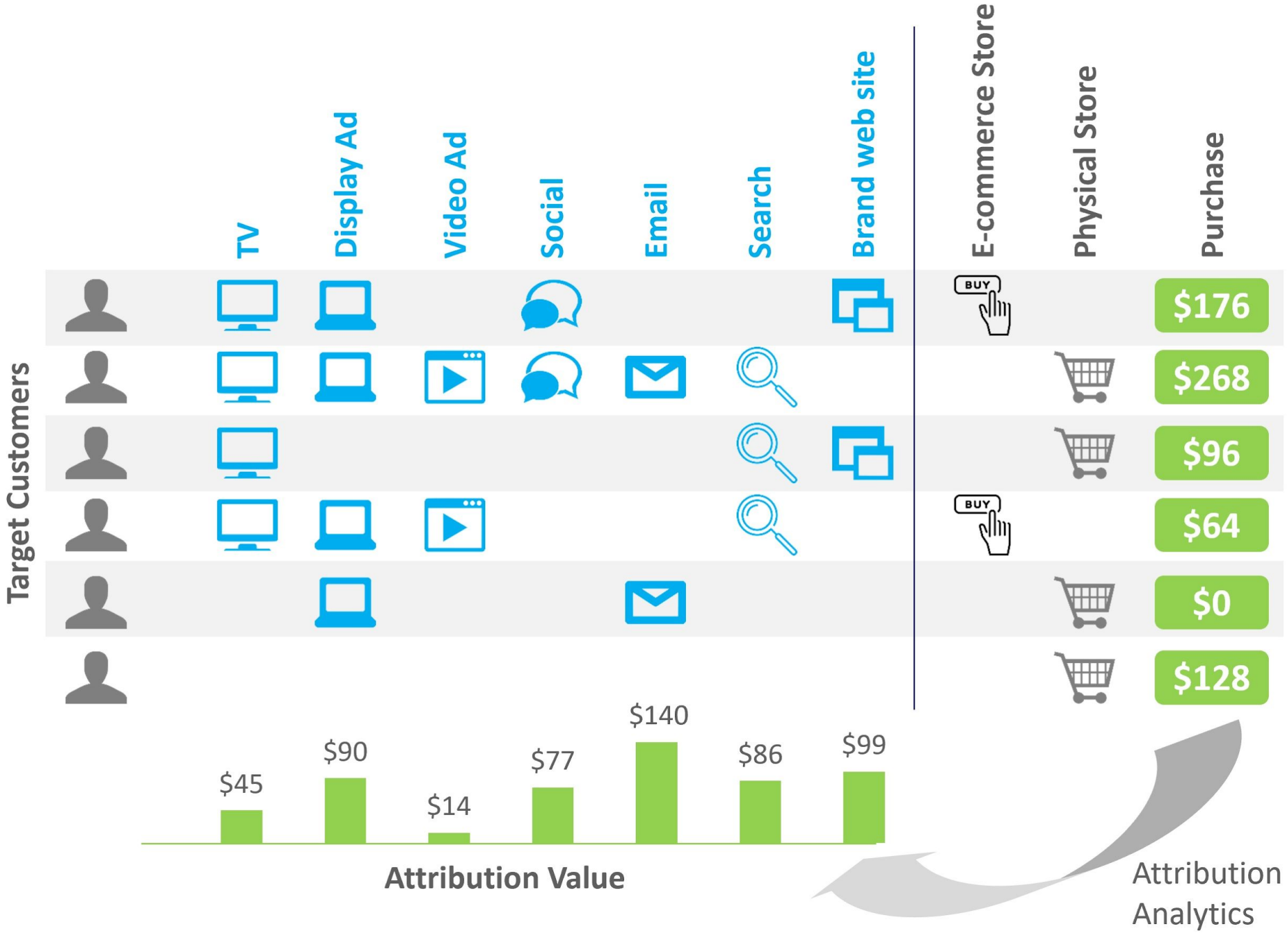
But if your product's revenue-generating activity is offline, it amounts to linking cost and sales/revenue data using some type of match key



You can also do it the other way around (for some products) to answer the question, “How do we know what customers (who did X) this ad touched?”

Match keys include click IDs, cookie IDs, hashed customer identifiers, etc




Target Customers
TV
Display Ad
Video Ad
Social
Email
Search
Brand web site
E-commerce Store
Physical Store
Purchase
BUY
BUY
$176
$268
$96
$64
$0
$128
$45
$90
$14
$77
$140
$86
$99
Attribution Value
Attribution
Analytics

Simple models

Last Touch

First Touch

First and Last

Linear

Time Decay

Position Based (fixed)

Complex models

Custom or Rule-Based

Statistical Model

Note about attribution:
All views are technically imperfect but provide valuable data.

Just remember to calibrate for lift.