

DN SC 6290: Customer Analytics, Fall 2021

Lecture 1

Introduction to the course + Why Customer Analytics matters

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<https://gwu.webex.com/meet/alipilehvarm>



9/2/2021

About me



Ali Pilehvar

University of Maryland, College Park

Ph.D., Operations Management, May '13

M.Sc., Sys. Eng., May '07

LinkedIn: <https://www.linkedin.com/in/alipilehvar/>

Most recent experience (2015- present)

- **Realtor.com– Director of Product Analytics (June 2021- present)**
 - Overseeing the team of data access and strategy: KPI definition, KPI build /improvement/ reporting
 - Advanced analytics and funnel investigation
 - **Wayfair– Advanced Analytics and Insights Manager (Oct 2019- June 2021)**
 - Lead the team of analysts to unlock web analytics insights and execute data-driven and high-ROI initiatives to grow \$70 million annual home service business (e.g., assembly, warranty)
 - **Liquidity Services – Head of Marketing Analytics and Auction Marketing (April 2015- Oct 2019)**
 - Overseeing buyer journey funnel and marketing analytics execution across 4 marketplace with annual revenue of \$600MM
 - Data management, customer insights & segmentation
 - Marketing spend tracking and customer retention strategies
-

Agenda for today

- ▶ Going around room and introduce ourselves
- ▶ Review of the course/syllabus [\[Link\]](#)
- ▶ Customer Analytics: What it is and why it matters?
- ▶ Different sources of customer data
- ▶ What defines a good metric?
 - ▶ North Star Metrics
- ▶ In-class exercise

Customer Analytics: What it is and why it matters

“If you can’t measure it, you can’t manage it”

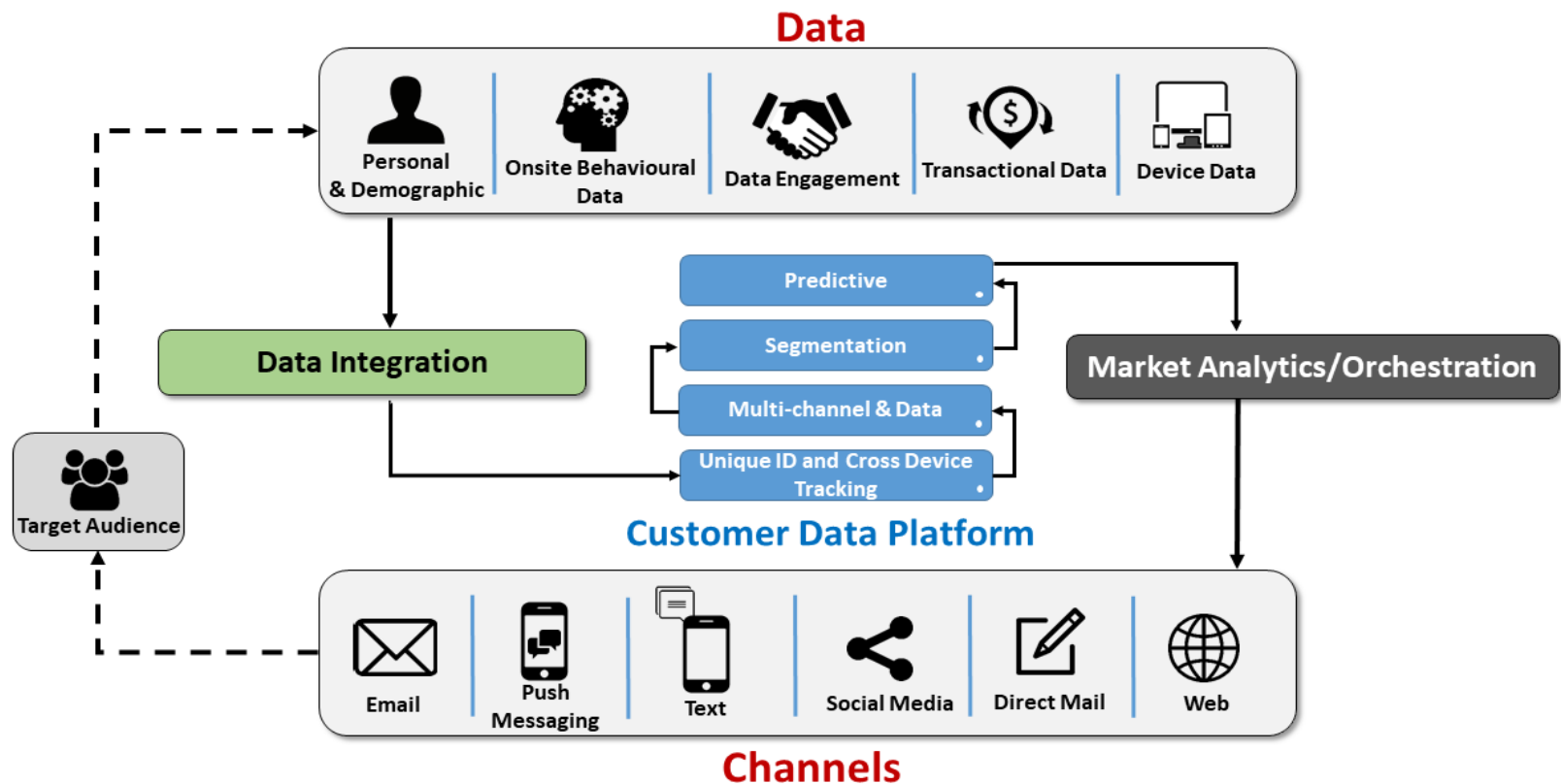
Peter Drucker

My definition of Customer Analytics

“Customer Analytics is simply all about the actionable measurements. It includes a rigorous process of identifying and measuring meaningful customer engagement and relevant metrics across customer journey, and mapping everything out to the company’s true north star metrics”

Customer Analytics *at a glance*

Customer Analytics refers to the processes and technologies that enables companies to learn about customer behavior by collecting data from different sources and stage of the customer journey.



Source: <https://vigoursoft.com/customer-analytics/>

Customer Analytics empowers companies to measure, learn, and optimize the customer behavior

- Companies leverage Customer Analytics to **grow their business** and **improve the customer experience**.
- Customer Analytics use techniques such as predictive modeling, data visualization, and segmentation to convert the customer data into the actionable intelligence.
- Where we need Customer Analytics:

Product

- Measure features, usage, and customer journeys
- Test the product engagement

Marketing

- Create segments and look-alike audiences
- Identify the best channels

Sales

- Score and segment leads, prospects, and users.

What questions can Customer Analytics answer....?



Loyalty

Generate customer loyalty by discovering response patterns



Acquisition

Which channels bring the biggest number of new customers?



Retention

Increase the frequency of visit and purchased items from existing customer pool



Cross sell/upsell

Identify related products and interests to promote



Churn prevention

Identify dissatisfied customers & churn patterns



Engagement

How long and where customers spend most time on the site (app)?



ROI maximization

Increase the spend in most efficient marketing channels, lower the spend in weakest channels

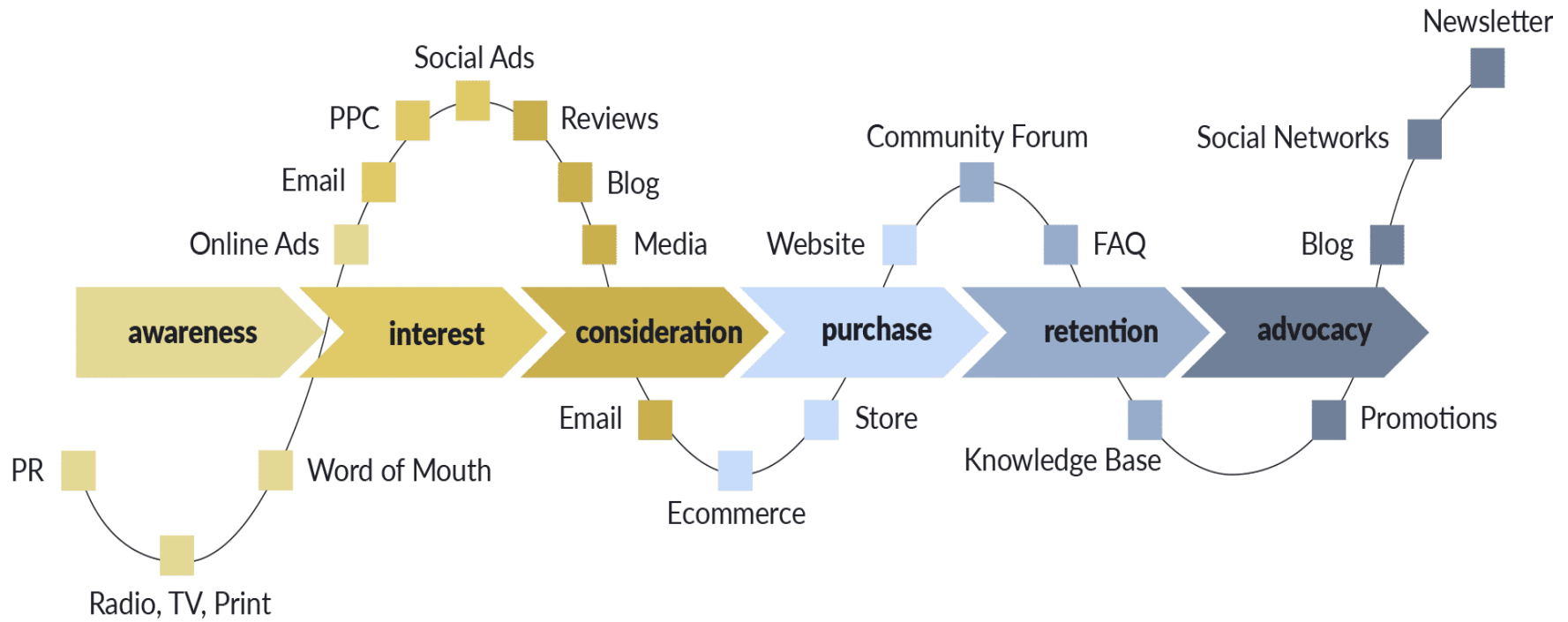


Segmentation

Identify different segment by predicting customer lifetime value (CLV)

Customer Analytics drive values for companies across all stages of customer journey

Across different stage of customer journey and at each customer touch point, companies could leverage customer data to eliminate the friction and increase conversion from each stage to the next one.



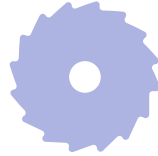
Source: <https://www.revelx.co/blog/customer-journey-optimization/>

Four core building blocks which define Customer Analytics process



Data Management

- Data sources/types
- Data preparation and tracking
- Data Warehouses
- Metric & variable preparation
- Data security and privacy



Analytics Production

- Data validation
- Data modeling
- Predictive, prescriptive, and descriptive analytics



Analytics Consumption

- Reporting
- Data Visualization
- A/B testing
- Business intelligence

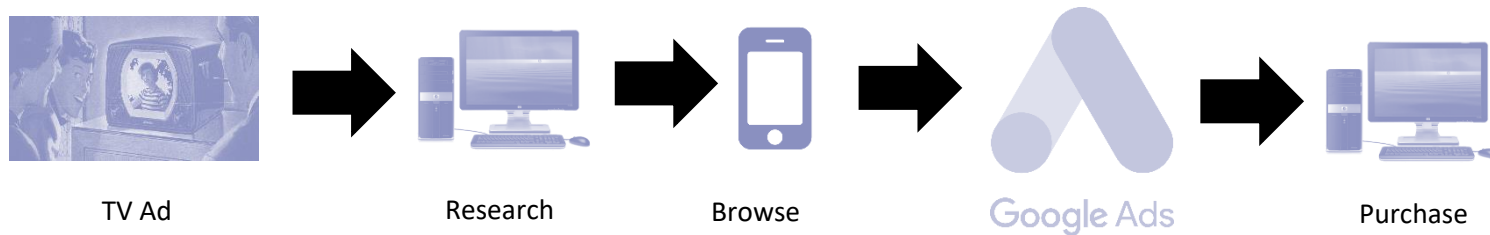


Analytics Activation

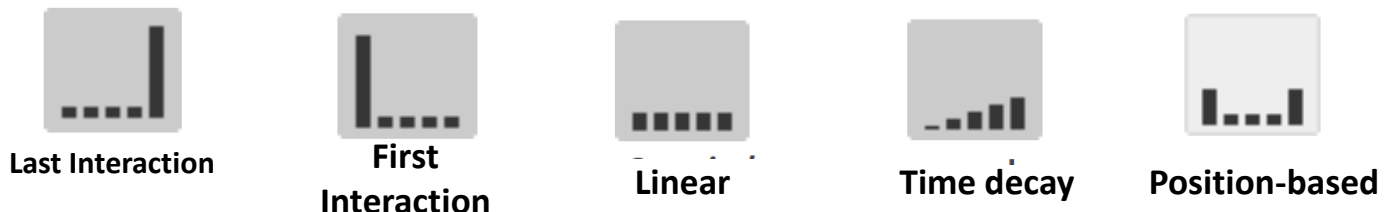
- Marketing planning & performance
- Product usage & optimization
- Customer experience

Cross-device customer journey make the customer analysis and ad measurement challenging

- **Problem with switching between devices:** finding the actual marketing influences and calculating the ad measurement/ROI on a purchase decision is not easy specifically for a larger and more complex buyer journey.

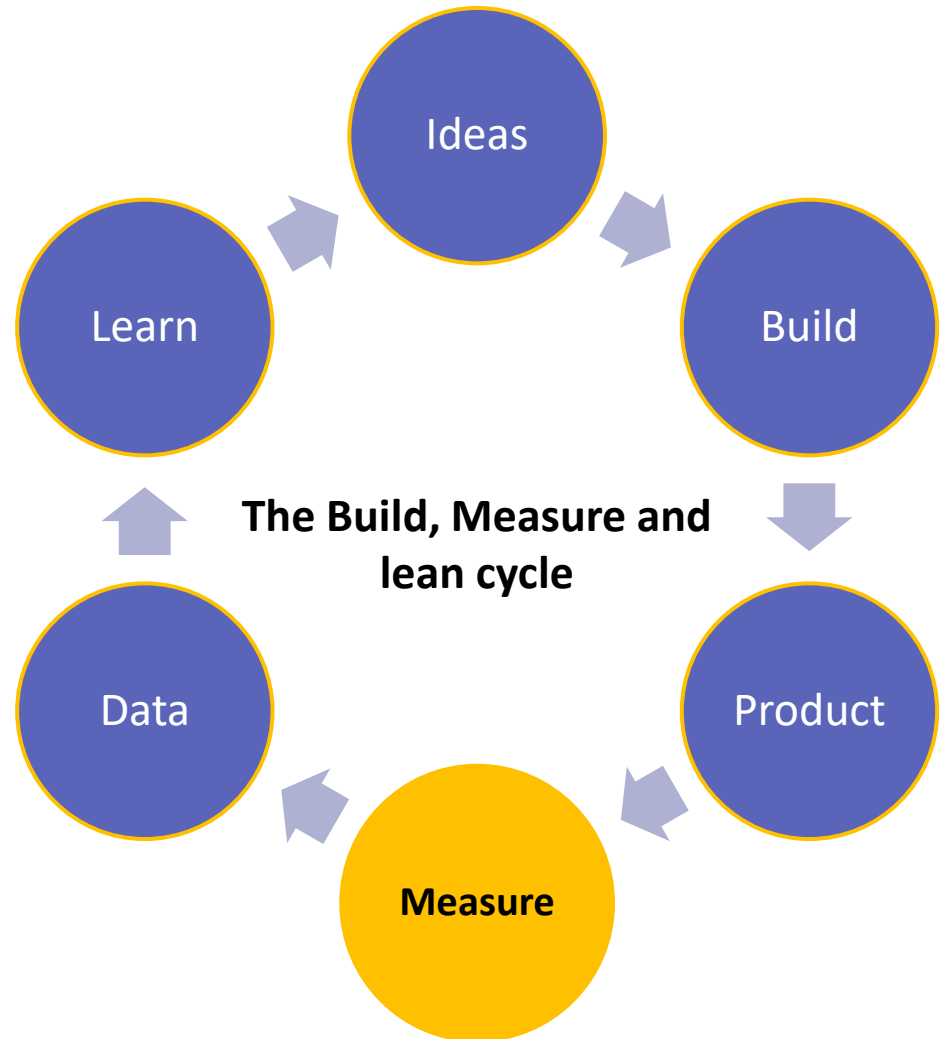


- Companies invest millions to track customer across different devices from login, sign ups, apps, email, CRM, cookies and link them together to explore how big is the issue.
- Different attribution models is used and built to deal with multi-touch cross-device journeys



Customer analytics is one critical part of lean startup framework

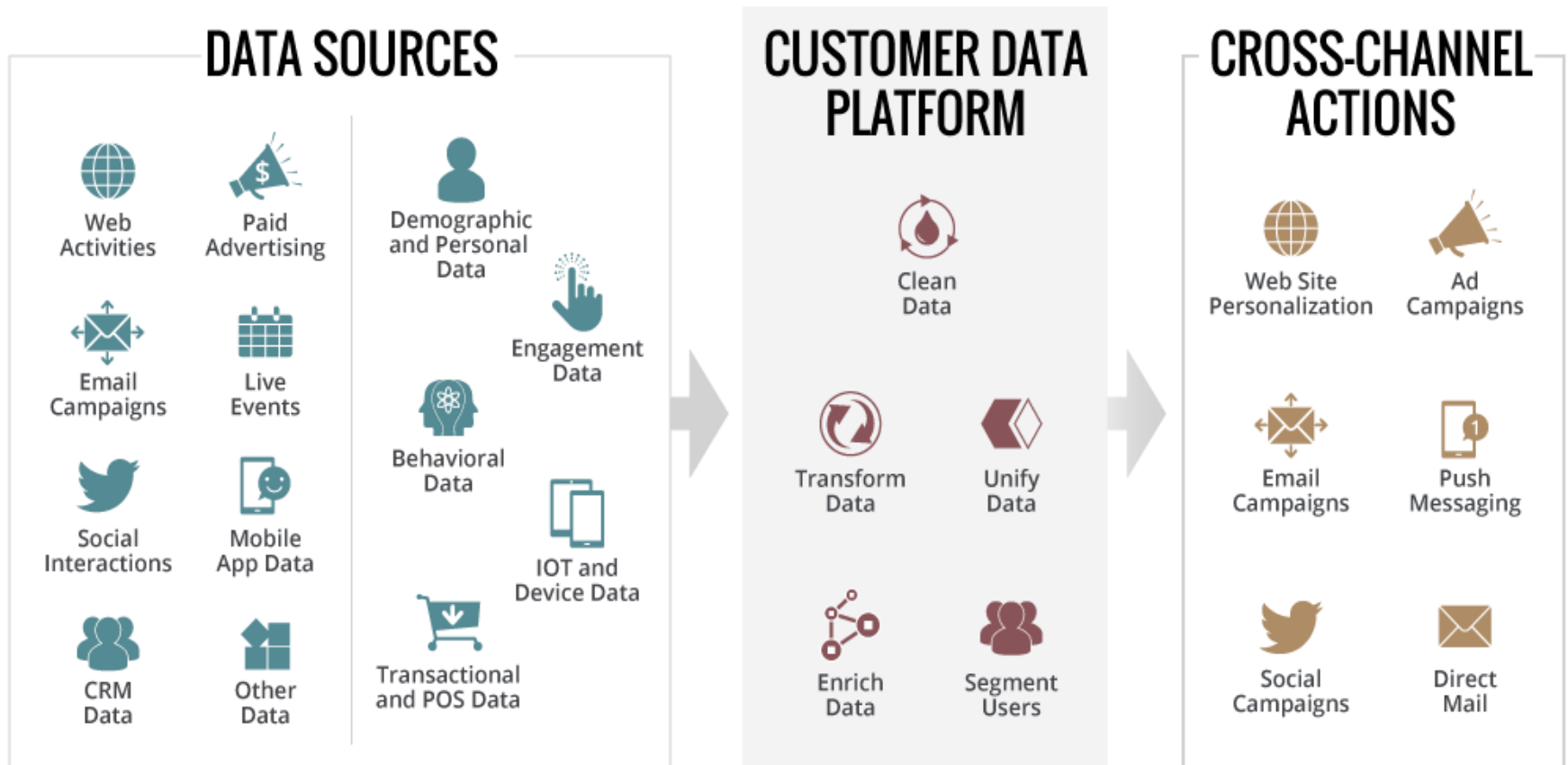
- ▶ [Eric Ries's](#) core Lean Startup's concept is:
build -> measure -> Learn
- ▶ The process focus on doing everything from establishing an idea to developing the product, learning, testing, and iterating quickly and efficiently.
- ▶ Lean analytics focuses on ***measure*** stage and is the key in this iterative cycle.



Notes

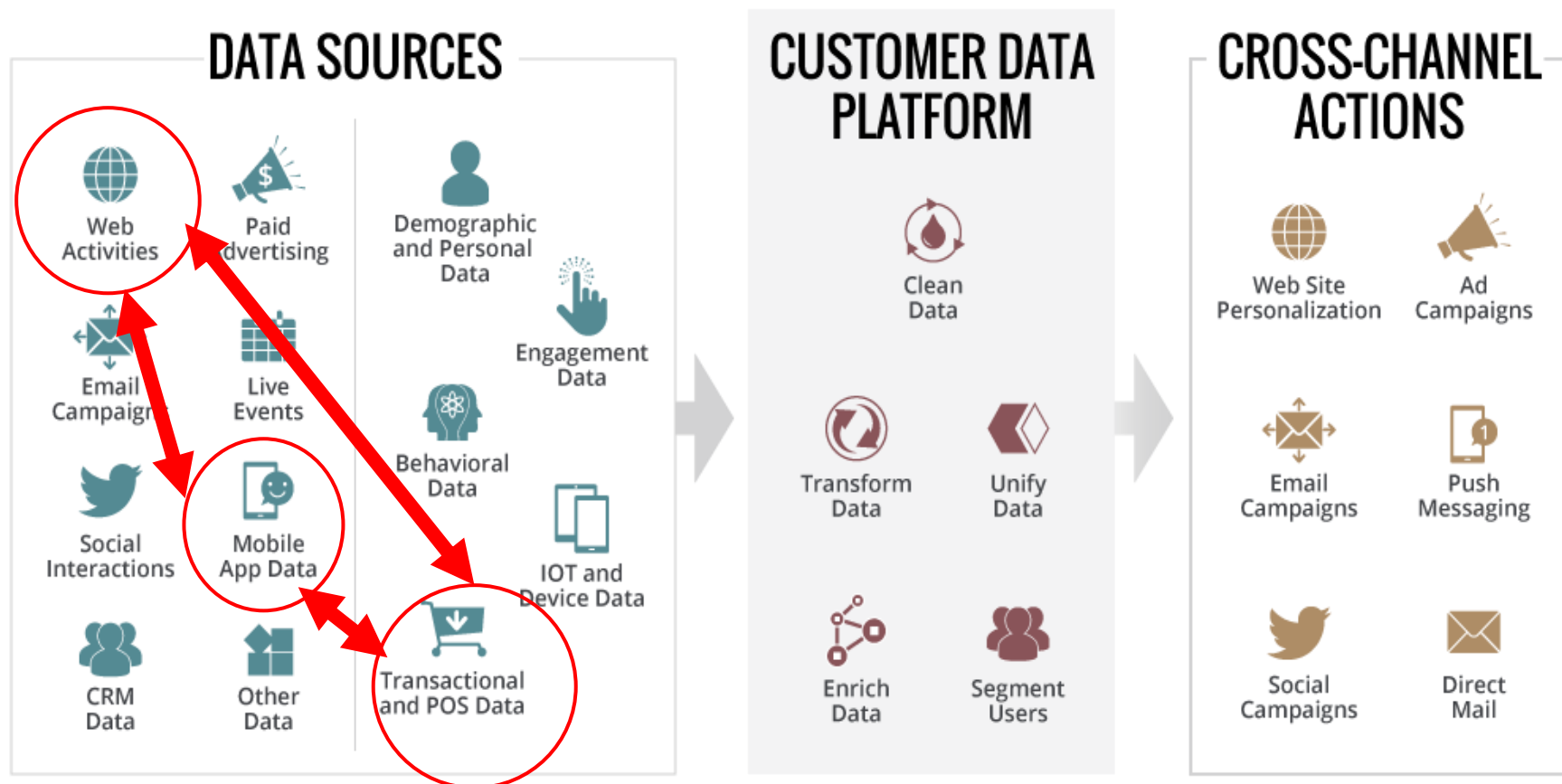
Different sources of customer data and acquisition channels

Different source of customer data is available and could feed Customer Analytics



Source: <https://www.columbiaroad.com/blog/customer-data-platform-a-revenue-engine-or-just-another-buzzword>

Linking the web and mobile analytics and transactional data at customer level is *critical* and a continuous process



Source: <https://www.columbiaroad.com/blog/customer-data-platform-a-revenue-engine-or-just-another-buzzword>

Customer can arrive from different type of acquisition channels at the web/mobile site/app

Organic Search (SEO)

Users find a website after using a search engine like Google or Bing, without referring by any other website.

Direct channel

Visitors who know about the brand come directly to the site

Social Media

Visitors come to the site via social medial pages and post (e.g., Facebook, Instagram)

Paid per click (PPC)

Google search
paid social (e.g., Facebook)
Display ad

Email Marketing

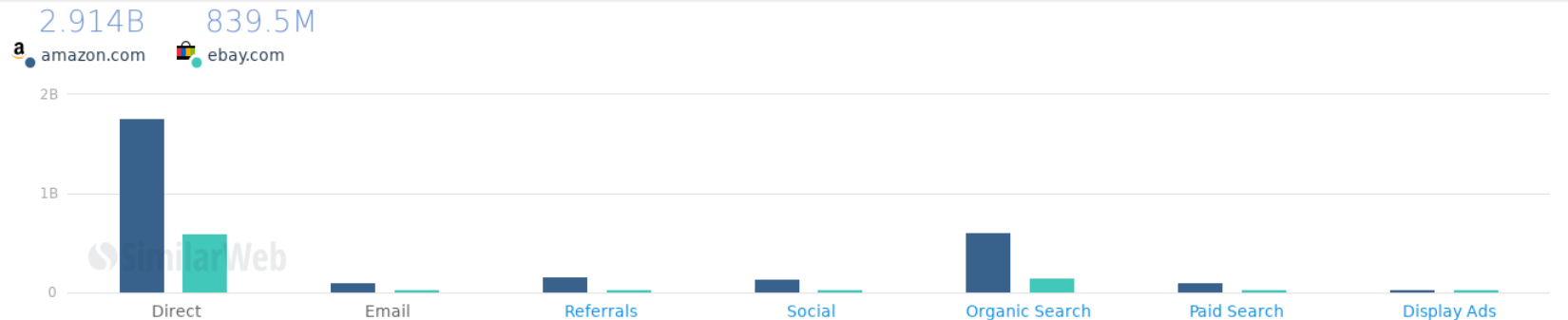
Visitors who are opted-in to receive emails will be targeted
[great opportunity for personalization]

Referral/affiliate

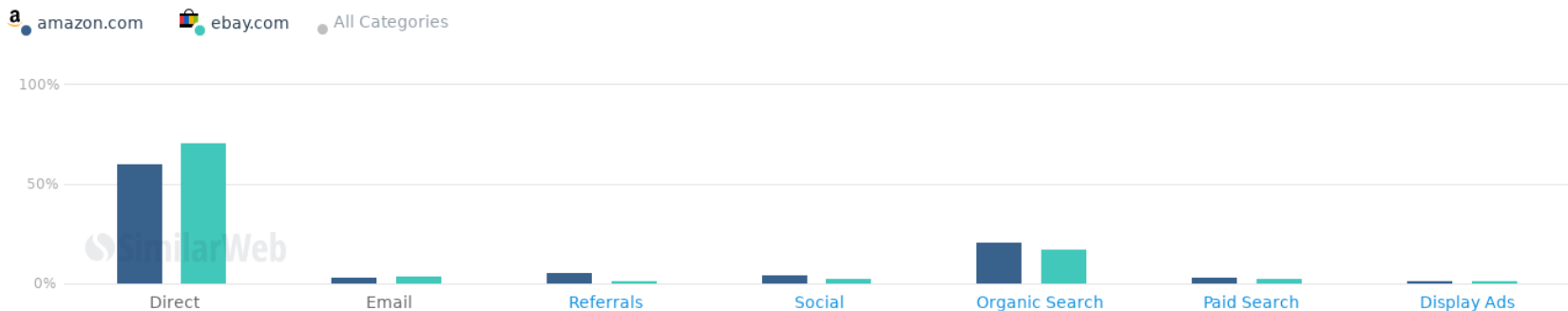
Traffic coming other 3rd parties (e.g., articles on FT which talked about a brand with the site ink)

A glance into Amazon/ebay's acquisition channel breakdown (May-July 2019, Desktop, US only)

Channels Overview | May 2019 - Jul 2019 | United States | Desktop Only



Channels Overview | May 2019 - Jul 2019 | United States | Desktop Only



Source: SimilarWeb

Transactional data can track all interactions between users and brand since they get acquired

- ▶ Example from an Amazon-like ecommerce site

Buyer journey: Sign up>Browse>View>Add to cart>Purchase>Post Purchase

customer id	1153	1153	3146	3146
Acquisition Date	2/15/2011	2/15/2011	7/1/2010	7/1/2010
Acquisition Channel	0	0	Search - Paid	Search - Paid
Acquisition Device	Desktop	Desktop	Desktop	Desktop
year	2018	2018	2017	2018
month	7	6	11	3
Category Name	X	Y	X	Z
skus viewed	1	6	4	2
skus added to cart	1	2	1	1
skus purchased	1	1	1	1
Revenue generated	\$257	\$69	\$327	\$59

Notes

What defines a good metric?

What makes a good and relevant metric?

- ▶ **A good metric is comparative**

E.g., purchase conversion increase 5% MOM

- ▶ **A good metric is understandable**

If people cannot remember it, cannot discuss it!

- ▶ **A good metric is a ratio and rate**

Ratios are easier to act on, they are comparative,

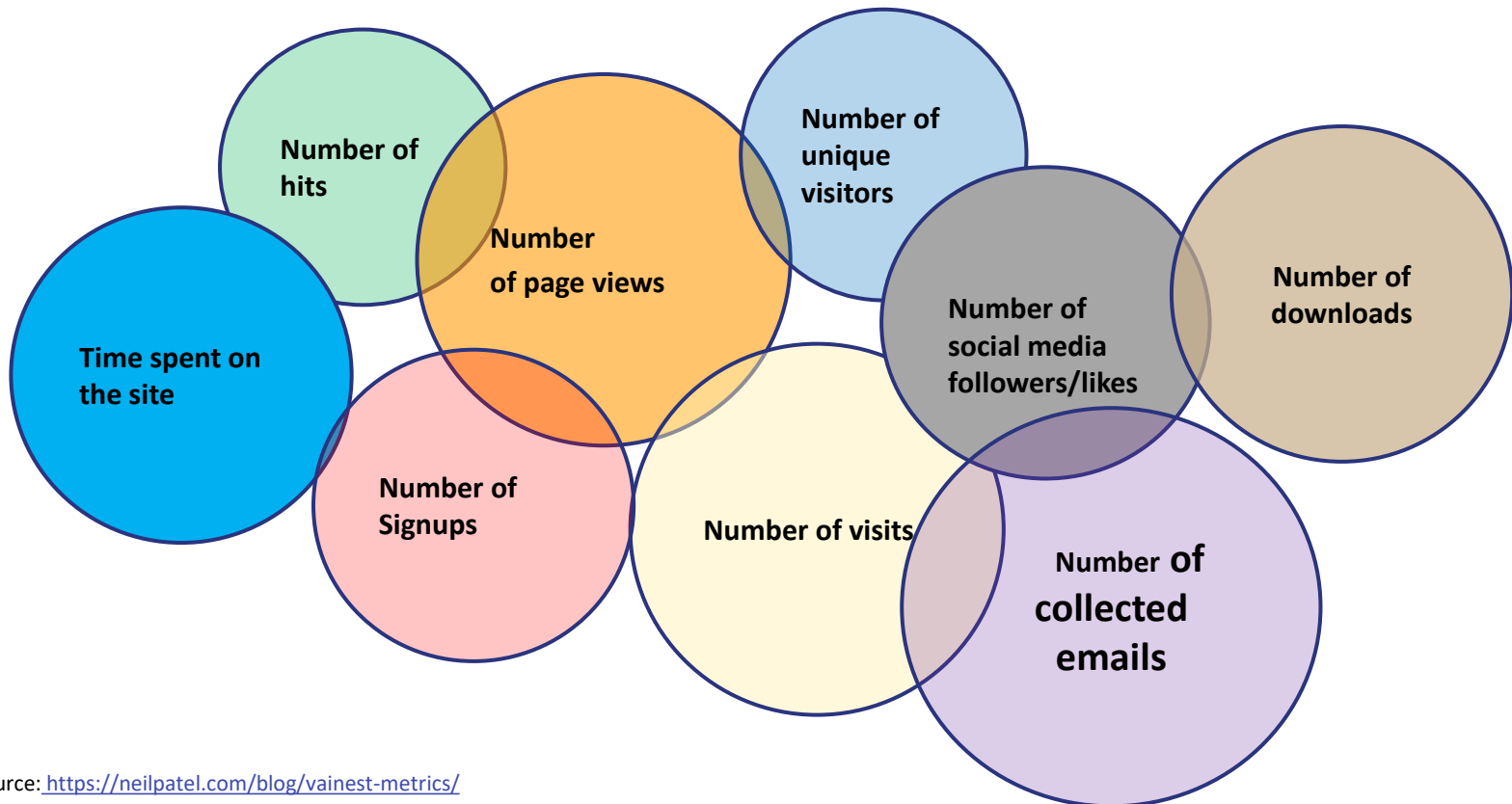
- ▶ **A good metric should be actionable (not vanity)**

A real metric should be able to define an action and change your behavior

*e.g., “total signups” could be a **vanity metric** versus “% of active users” which is more actionable*

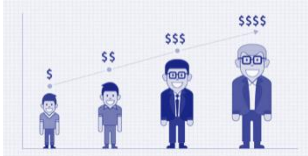
Some vanity metrics to watch out for

- **Vanity metrics** are all those data points that make us feel good if they go up but don't help us make decisions:
 - They still have value, but their performance is not a leading indicator of how your business is doing.

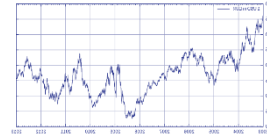


Source: <https://neilpatel.com/blog/vainest-metrics/>

The most important e-commerce metrics to track



Customer Lifetime Value



Social Media Conversion Rate



Revenue Per Traffic Sources



Average Order Value



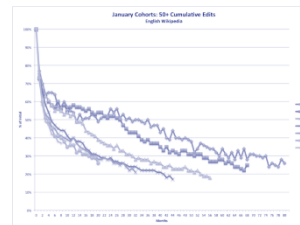
Cart Abandonment Rate



Sales Conversion Rate



Email Conversion Rate



Returning Customer Percentage

The relationship between Metrics and KPIs

The set of specific metrics which are most closely aligned with your **critical business objectives** (e.g., revenue growth, user engagement) called **KPIs** (key performance indicators)



Metrics

***Example:** Monthly site traffic to Wayfair*

- Quantifiable measures used to gauge performance or progress
- Monitor it to track progress toward a business objective

Every **KPI** is a metric, but not a way around



KPIs

***Example:** Monthly Revenue on Wayfair*

- Things that matter most to keep your business **alive** and **well**
- Monitor it to track progress toward a business objective

Ultimately, you need both.

KPIs keep you focused and quickly tell you what's working (or not working) in your business.
The rest of your metrics help you diagnose *WHY*.

Source: <https://www.grow.com/blog/metrics-and-kpis-are-different>

Every company needs a North Start Metric (NSM) to align all stakeholders and teams



Without north stars, your list of KPIs can easily just become a metric soup

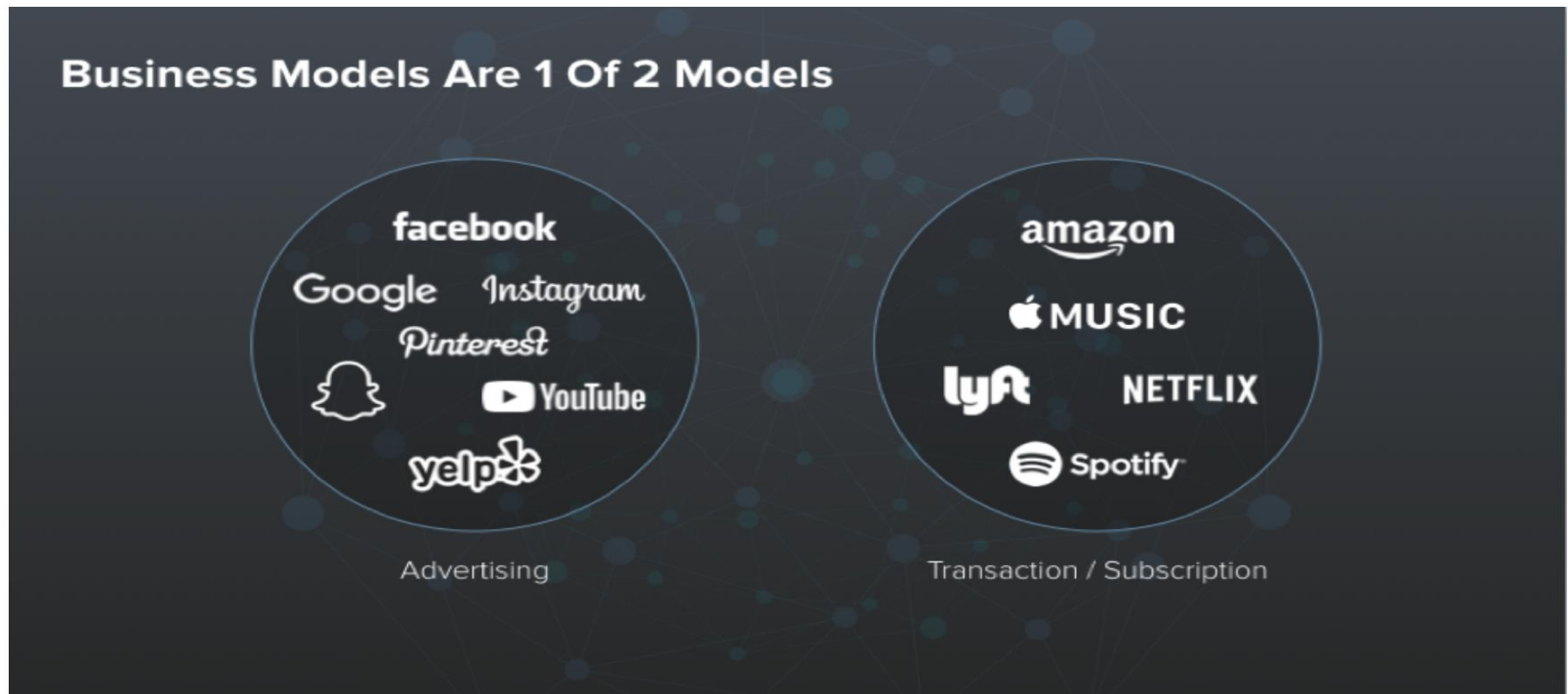
Finding the relevant NSM depends mainly on the business model

Advertising/Attention -driven

Focus on increasing engagement and time in app

Transaction/subscription-driven

Optimize for the lowest friction before the check out point



Source: <https://a16z.com/2018/12/07/when-advertising-isnt-enough-multimodal-business-models-product-strategy/>

Some NSM examples from big companies

- **Airbnb:** Number of Nights Booked
- **Facebook:** Number of daily Active Users
- **Quora:** Number of questions a user answers
- **WhatsApp:** Number of messages a user sends
- **Walmart:** Number of purchased transactions
- **Netflix:** Number of subscribers watching >X hrs of content per month

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What could be the NSM for UberEats?

In-class Video: Alex Schultz: North start metric

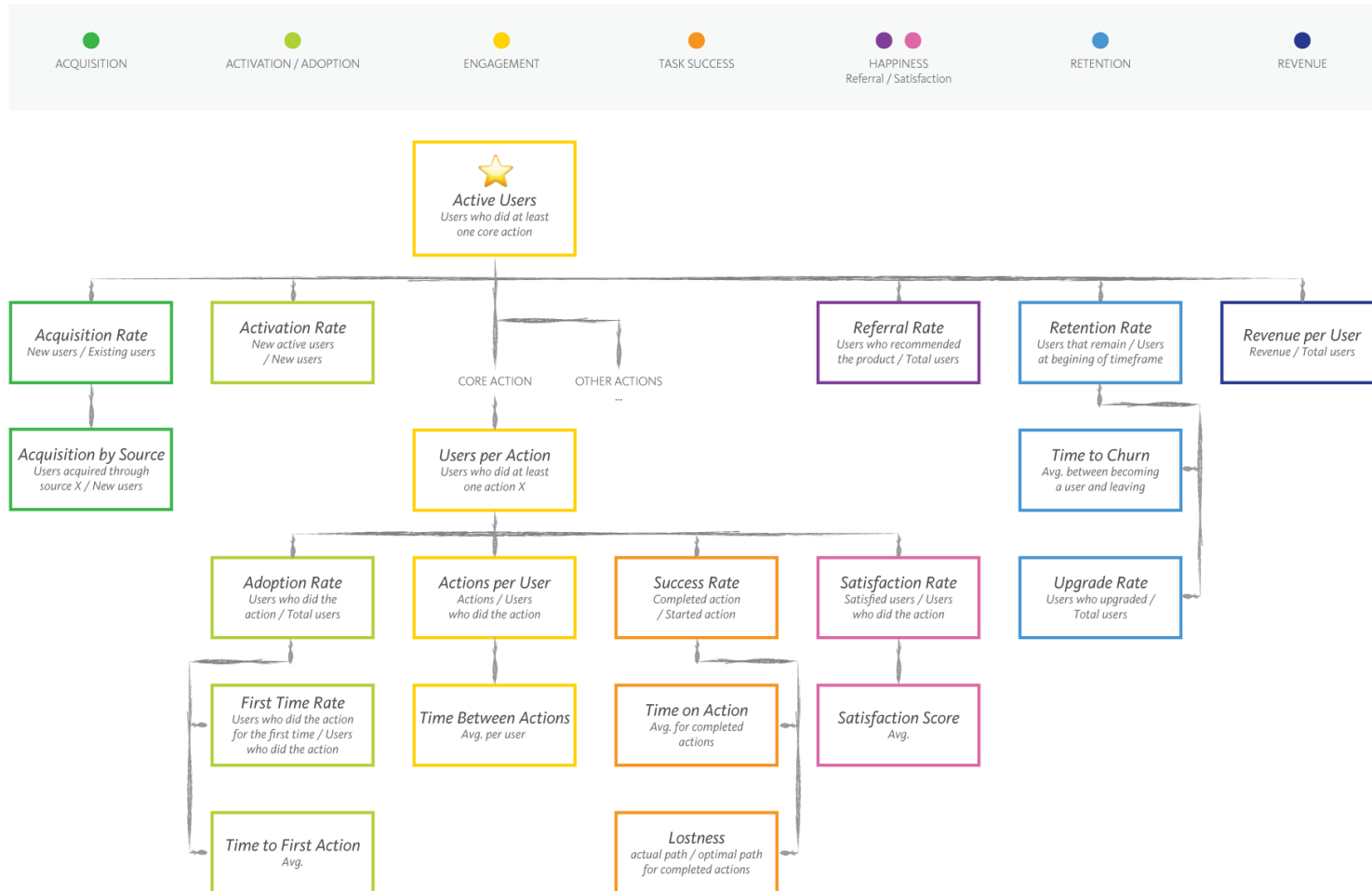
(Minute 11:15-16)

Growth

alex schultz

https://www.youtube.com/watch?time_continue=1&v=n_yHZ_vKjno&feature=emb_logo

Standard metrics for a generic product (product analytics)



<https://uxdesign.cc/product-metrics-that-matter-951b9e4d4eca>

In class exercise

1. Identify a north star metrics (NSM) for below businesses which matters the most for the growth of the companies

- Wayfair
- Doordash
- Ebay
- Open table

2. For all recommended NSMs bring at least 2 reasons of how each of product, marketing and sale team in above companies can relate to these metrics?

Example: for Facebook, the number of Daily/Monthly Active Users (DAU/MAU) is NSM determined by Mark Zuckerberg early on. This is the metric through which they can estimate the advertisement revenue from this number since they know historically for each MAU they can make up to \$x from the advertisers.

Reading/listening list

Relevant readings, articles, podcasts and videos

15-min round discussion for next week

- [Reading: Different type of Acquisition Channels](#)
- [Reading: 10 Most Important Ecommerce Metrics To Track](#)
- [Reading: Every product needs a north star metric](#)
- [Podcast: What's the north star metric \(minute 7 onward\)](#)
- [Reading: Lean Analytics – Use Data to Build a Better Startup Faster \(Chapter 1-4\)](#)

Extra interesting and relevant content

- ▶ [Reading: How to define a metric to prove or disprove your hypotheses and measure progress](#)
- ▶ [Reading: How Amazon, Google, and Belsimpel Perfected the Customer Journey](#)
- ▶ [Video: Find Your North Star Metric, Alex Schultz \(VP growth\)](#)
- ▶ [Podcast: Eric Ries -- From Lean to "Lean Startup" to "The Startup Way"](#)
- ▶ [Reading: Cross device marketing: the attribution challenge you cannot ignore](#)
- ▶ [Reading: Attribution modeling overview](#)
- ▶ [Reading: Product Metrics That Matter](#)

Post your questions @

Week 1 discussion board in

Blackboard