



Digital Technologies and Value Creation

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Business analytics: same same, but different?

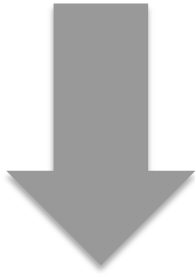
Point of view:

INTERNAL

vs.

EXTERNAL

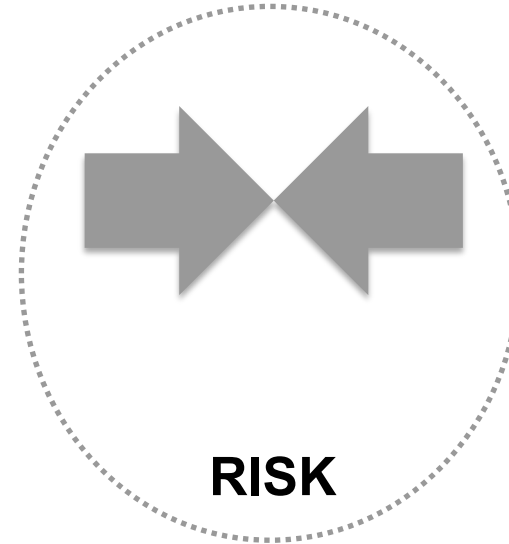
Questions:



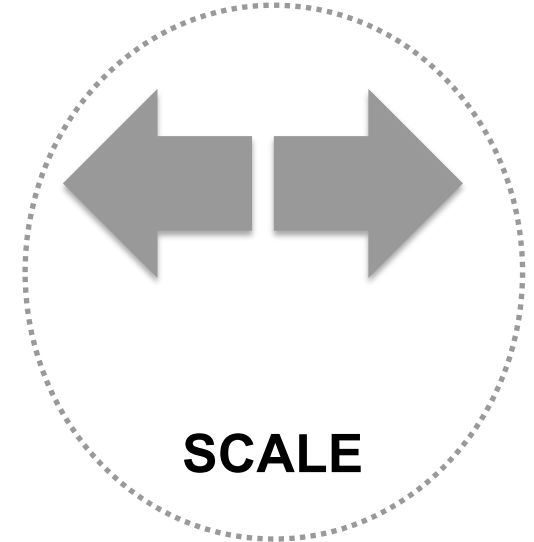
COST



REVENUE



RISK



SCALE

Measures: “What gets measured gets managed”

(mostly attributed to Peter Drucker, but apparently that's incorrect)



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What we measure (and manage) in marketing analytics

- Preferences and customers
- Marketing and promotional activities
- Sales activity



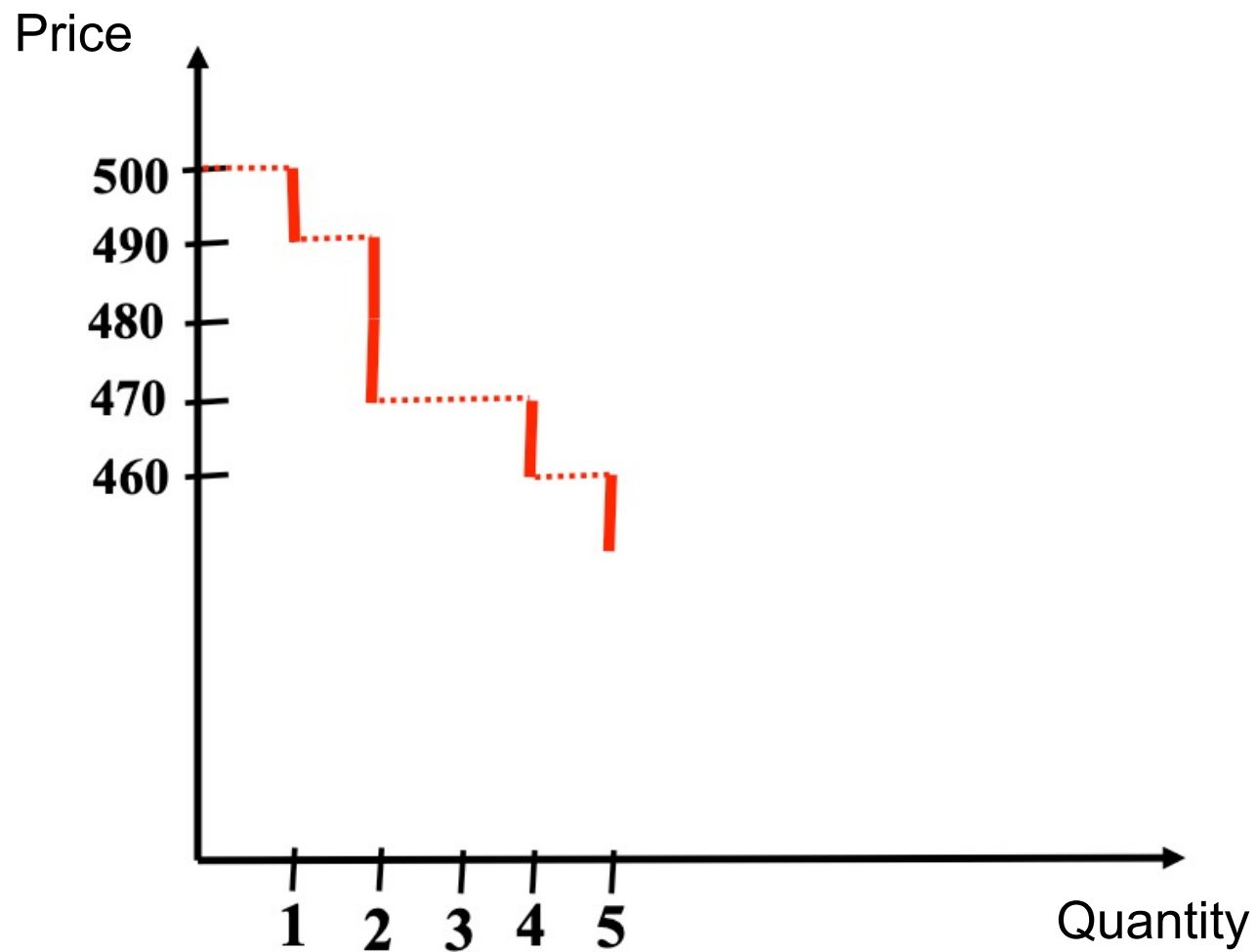
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Preferences and customers

The issue with measuring preferences

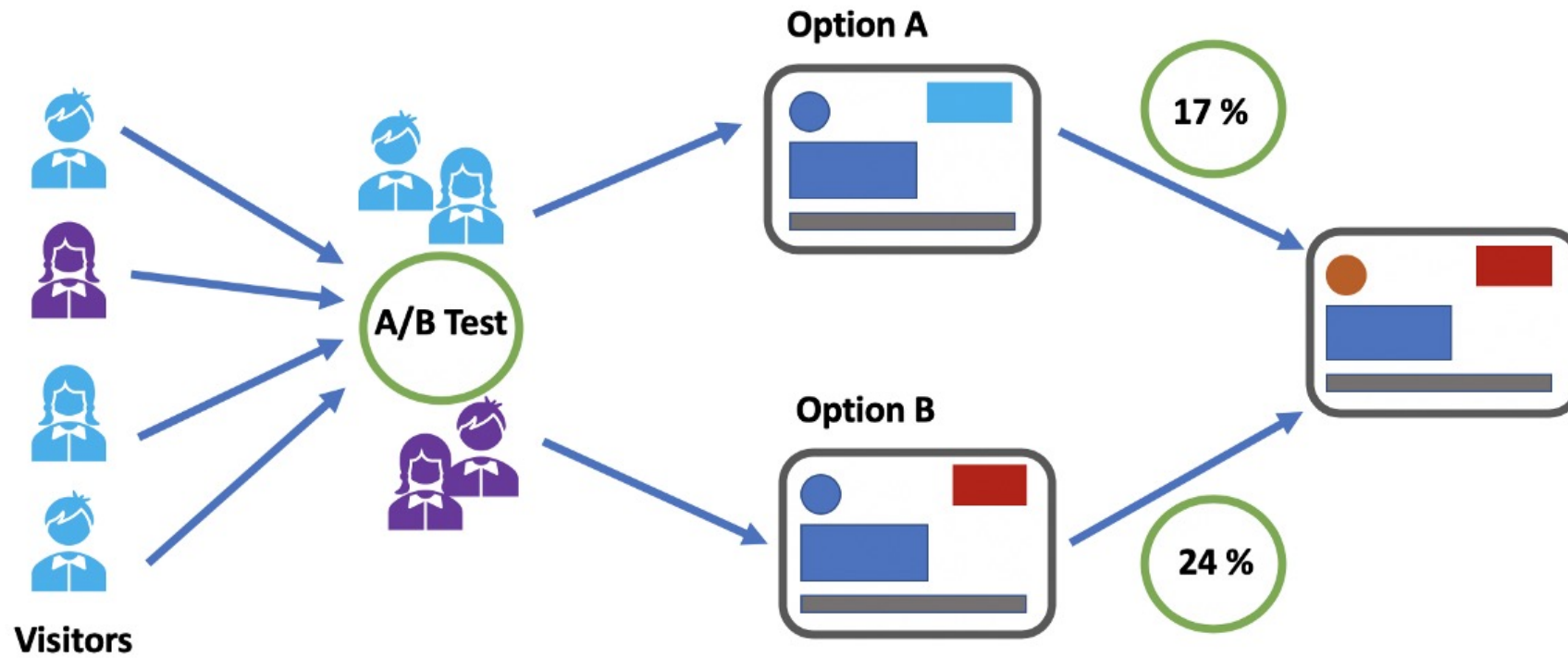
1 x £500
1 x £490
2 x £470
1 x £460
...



Measuring preferences: conjoint analysis

Brand	Yanso	Edge	Yanso
Screen Size	75"	36"	60"
Refresh Rate	240hz	120hz	60hz
Price	\$1099	\$529	\$899
HDMI Ports	3 2.0 HDMI Ports	4 2.0 HDMI Ports	2 2.0 HDMI Ports
Wi-Fi	Wi-Fi Enabled	Wi-Fi Enabled	Wi-Fi Enabled
Appearance	Level 1	Level 2	Level 2
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

From surveys to experiments



Source: Towards Data Science

Customer types: new and old

“It costs five times more to create a new customer than to retain an old one”



Source: Try Chameleon

Customer types: segmentation



“Have you heard of market segmentation?”



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Targeting a segment

- 82% of social media and parents' forum posts fall into one of these two categories:
 - "How long should I wait before ...?"
 - "I've ignored it for three days but ..."
- Using a regression model, identify perfect condition for cough
- Targeted media to deliver message



Source: Prospan

Customer types: value

Customer Lifetime Value = Rate of (variable) profit x “Lifespan”

Business Value = Customer Lifetime Value x Customers – Fixed costs



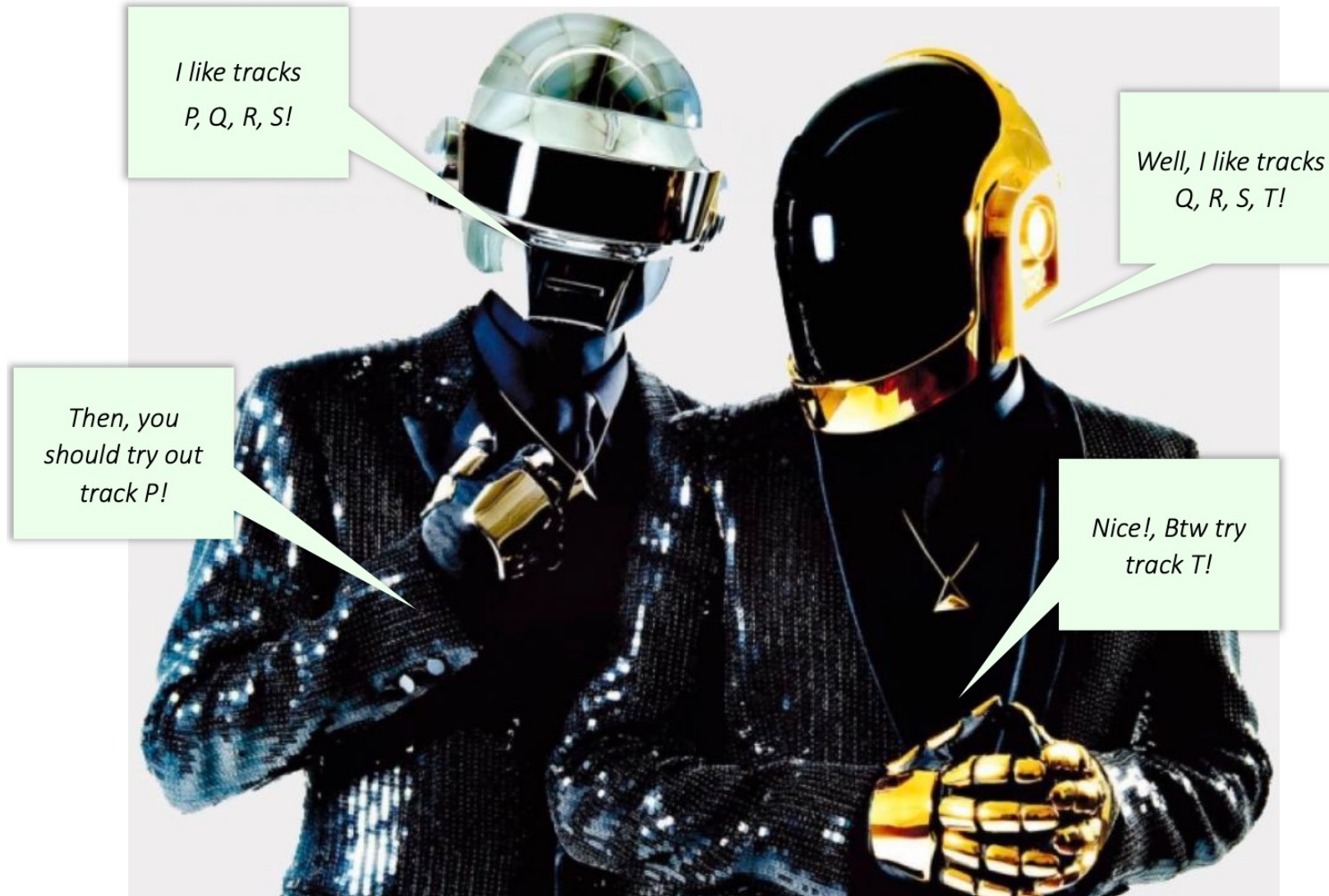
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Customer types: recommendations



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Recommendations with collaborative filtering



Source: Daft Punk

Recommendations with content-based filtering

Because you watched Narcos



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Marketing and promotional activities

Cost(-per-click)

- “Traditional” campaigns: a high percentage of fixed costs
- Online ad campaigns: largely variable costs (per click)

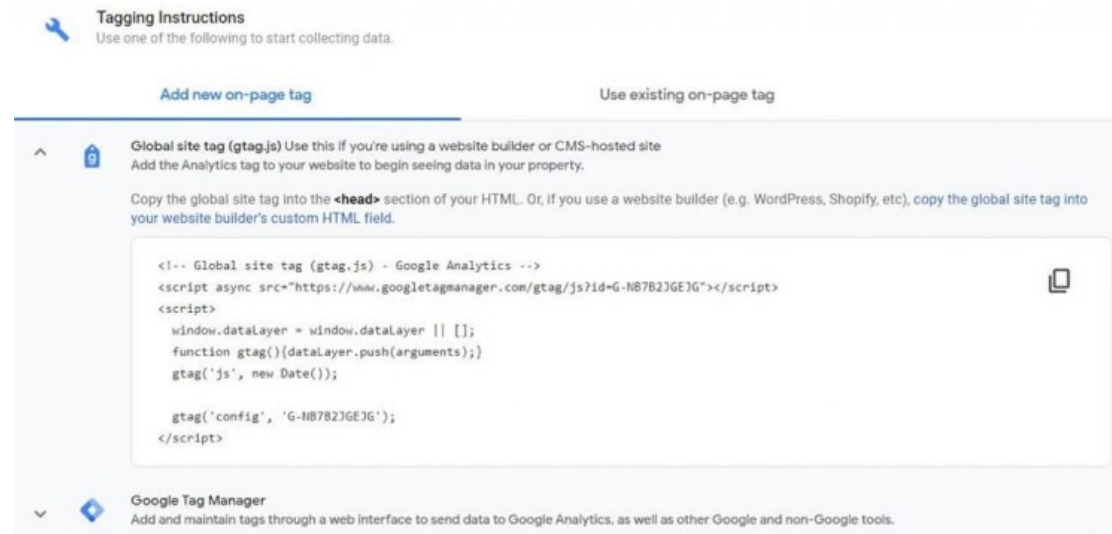
Conversion rates

Conversion rate: percentage of the audience (e.g., of an ad campaign, or a website visit) that completes a desired goal (e.g., buys a product)

- Variation by marketing channel
- Variation by sales channel

Measuring conversion rates in ecommerce (and many other things): Google Analytics

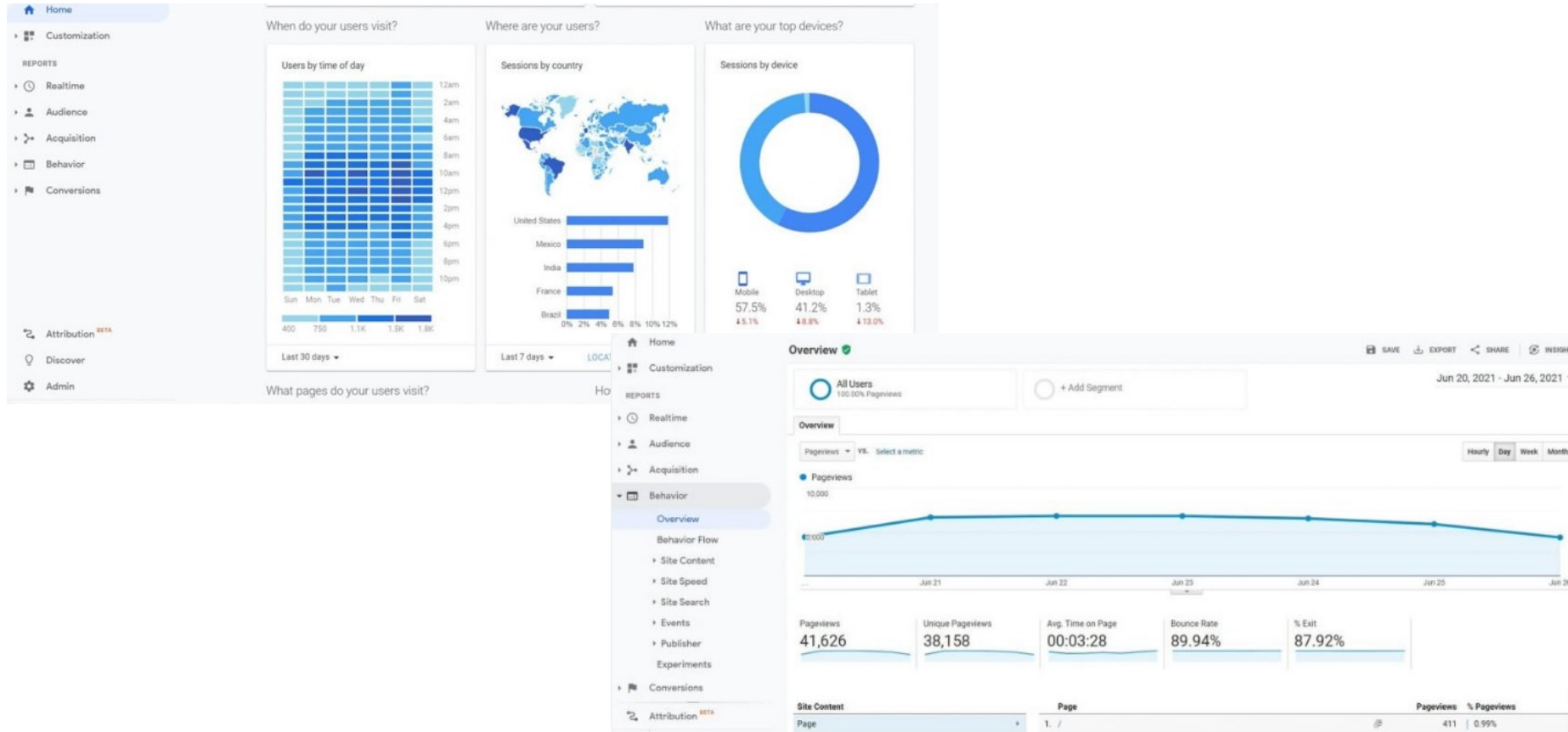
- The most popular Google product together with search
- Freemium – only need a Google account to get started
- With a little bit of code on your website, Google can track the traffic
 - After creating an account and adding your site, you receive an ID
 - You then need to copy a little bit of code into the <head> section of the website you want to track:



- Be aware: under GDPR, you need to ask users for permission!



A little code goes a long way

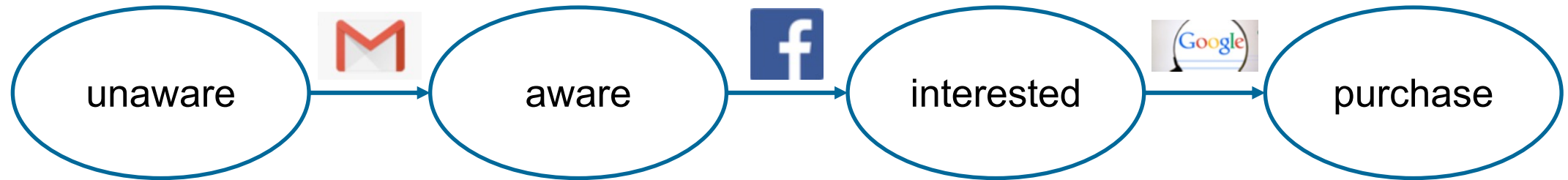


Source: First Site Guide



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Attribution and channel comparison

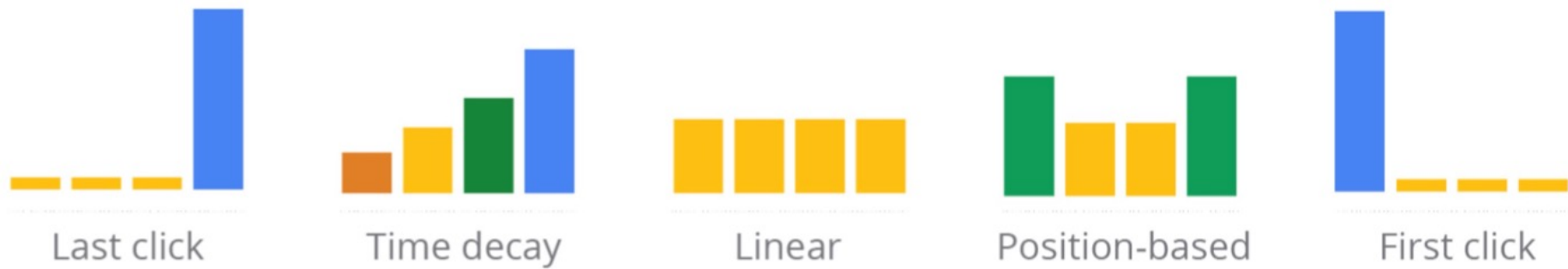


→ Attribution problem: how to attribute credit to your action?

- Identified as the top-most important research priority in 2018 by the Marketing Institute
- Budget allocation, incentives for bidding strategy

Attribution: existing methods

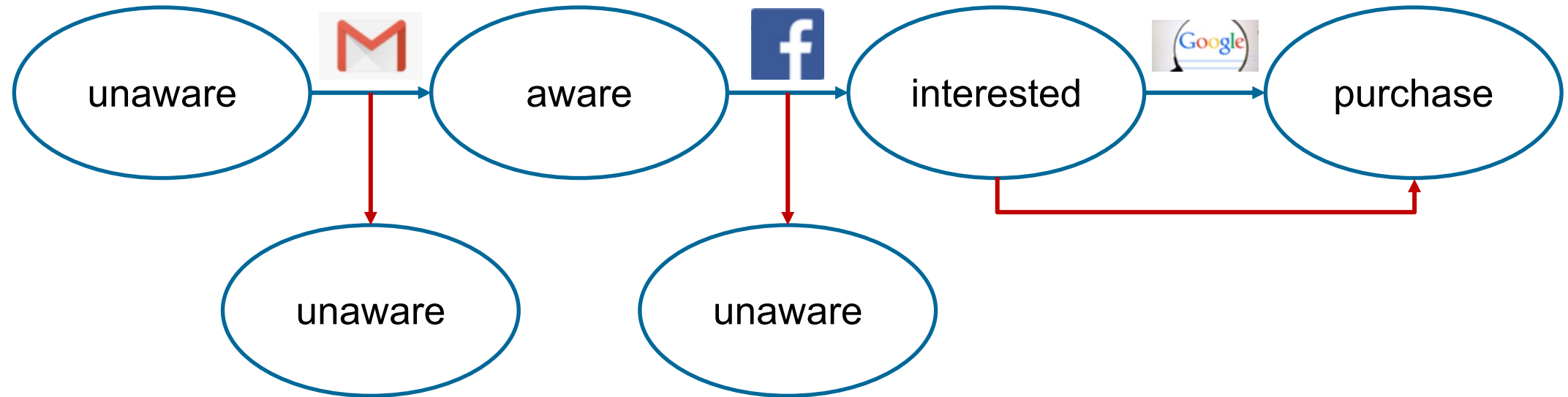
- Rule-based attribution:






Source: Humanlytics

- Algorithmic attribution
 - Attribute incremental value
 - A/B testing

Attribution example continued



			
Last touch	0%	0%	100%
Uniform	33%	33%	33%
Incremental	100%	100%	0%

Engagement

- Brand value
- Network effects
- Retention
- Measuring the effects of marketing campaigns when there is a delay

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Sales activity

Sales (by channel), costs, and margins

- Many classic metrics:
 - Sales revenue
 - Sales productivity
 - Cost of goods sold
 - ...
- For ecommerce, tools like Google Analytics allow to gather more information than pure sales numbers (e.g., behaviors)

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 - Sales (by channel)
 - Costs and margins



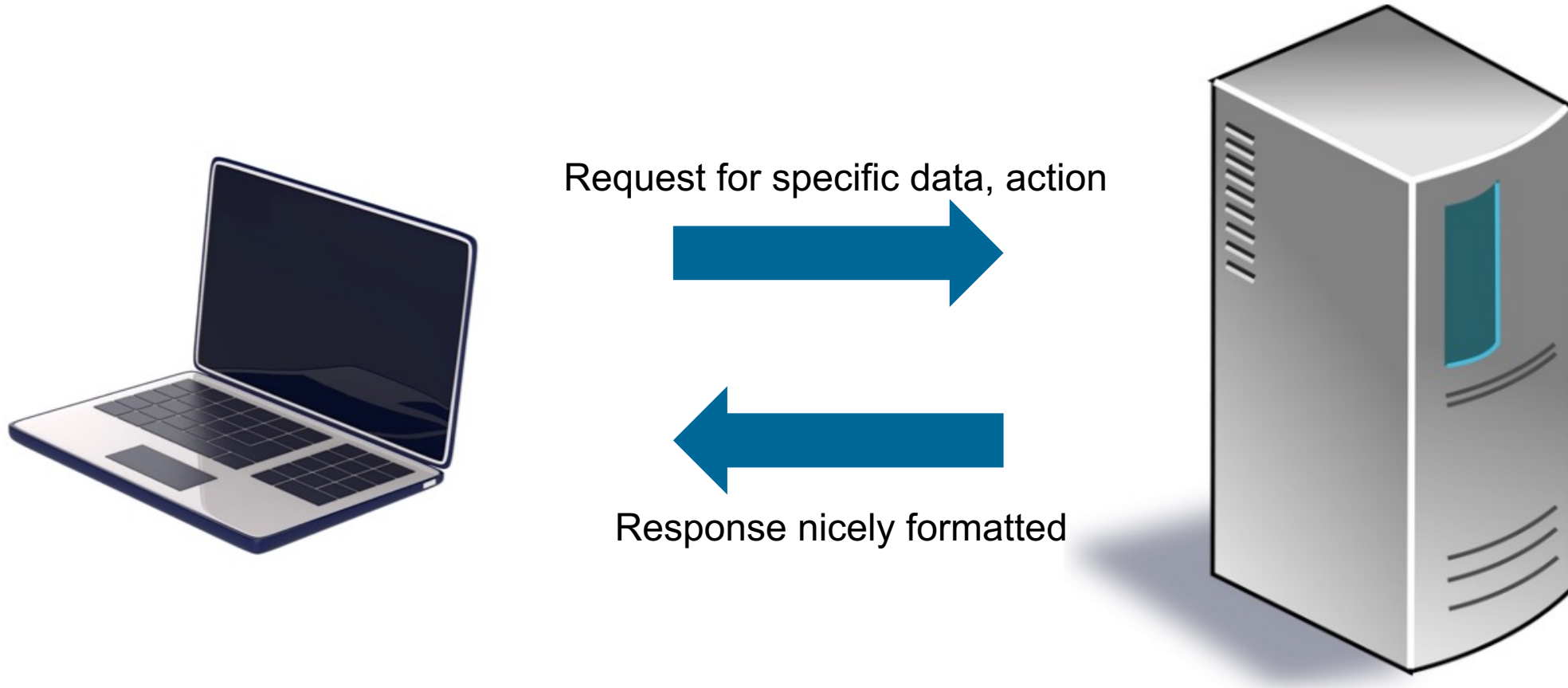


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Application Programming Interface (API)



The Twitter API

- An interface provided by Twitter to access its information (Users, Tweets, etc.) within software
 - Actually, more than one, but will focus on Developer API
- Access is controlled – authentication is needed, which requires signing up and agreeing to conditions
- Limitations on what can be searched, and at what rates we can make requests

Let's get it to run



See you in class!