

Securitate informațională. Date și modele de afaceri

Proiectul învățământului
superior din Moldova –
DATASEA

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**UNIVERSITATEA TEHNICĂ
A MOLDOVEI**

A large, round hay bale sits in the foreground of a golden field at sunset. The sky is filled with soft, orange and yellow light, with some clouds. In the background, there are silhouettes of trees and a line of green crops.

The economic framework: Data & business models

Răzvan Rughiniș

Ethical vs. impact analysis

Values:	Economics	Psychology	Sociology
Fairness	<p>Platforms: unfair competitive advantages over players</p> <ul style="list-style-type: none"> - Market dominance - Information asymmetry 	<p>Unequal quality of digital engagement</p> <p>Enhanced vs. diminished cognition & abilities</p>	<p>Algorithmic biases</p> <p>Unequal access to digitalization</p>
Harm	<p>Platforms (Amazon etc.): harm to competitor businesses</p> <p>Gig & ghost labor (Uber etc.): harm to workers</p>	<p>Online harassment</p> <p>Self-harm related to social media consumption</p> <p>Amplification of hate</p>	<p>Polarization</p> <p>Mistrust in democracy and expertise</p> <p>Decrease in social trust & public goods</p>
Autonomy	<p>Platforms: monopolistic reduction of free choice</p> <p>Surveillance: nudging through prediction</p>	<p>Addiction to social media and digital stimuli</p> <p>Decreased control over our attention and time</p> <p>Disinformation</p>	<p>Filter bubbles & misinformation machines: decreased control on information flows</p>

Data capitalism: Two sides of the same coin



Upside

- Economy: business
 - New markets and business models
 - Economic growth
 - Personalization
- Psychology: mind
 - Higher relevance & stimulation
 - Extended mind: digital tools
 - Distributed mind: digital communities
- Sociology: social impact
 - Co-ordination across time & space
 - Digitally mediated communities
 - Freedom from local structures

Downside

- Economy: business
 - Platform dominance
 - Information asymmetry
 - Manipulation through prediction ([Zuboff](#))
- Psychology: mind
 - Fragmented attention
 - Echo chambers & filter bubbles;
 - Amplification of negative emotions
- Sociology: social impact
 - Algorithmic bias
 - Polarization & parallel realities
 - Acceleration & disruption

Outline

1. Data and business models in surveillance capitalism
2. Emerging business models: Follow the money! Follow the data!
 1. Google business model: from advertising to AdTech
 2. Uber business model: in pursuit of market dominance and labor exploitation
 3. Tinder business model: selling data
 4. FaceApp business model: selling data
 5. Digital gaming - FIFA Ultimate Team & DomiNations: gaming vs. gambling (& selling data)

A dark brick wall is covered in a dense grid of security cameras. In the lower-left corner, two people are standing and talking. A dark door is visible in the lower-right corner. The overall scene is dimly lit, emphasizing the surveillance theme.

1. Data and business models in surveillance capitalism

It's all about the data

What is the business model for Shazam?

- Should Shazam know your **location**?
- Why?
- How is this information shared?
 - “You may choose to provide Shazam with permission to collect your location while you are using the app. We use location data to show you where your songs are Shazamed and improve the quality of the service.”
 - “We may also share your information: With service providers who perform services and functions on our behalf to help deliver the services and communicate with you.” ([Shazam Privacy](#))



Shazam & Privacy

Shazam is designed to protect your information and enable you to choose what you share.

We built this page to answer the questions you may have regarding your Shazam data—and show you how to easily manage your data.

Paying in data capitalism

- We pay with...
 - Our time / Eyeballs
 - Our money
 - **Our data**
- Do we have a choice?
- Do we pay multiple prices?

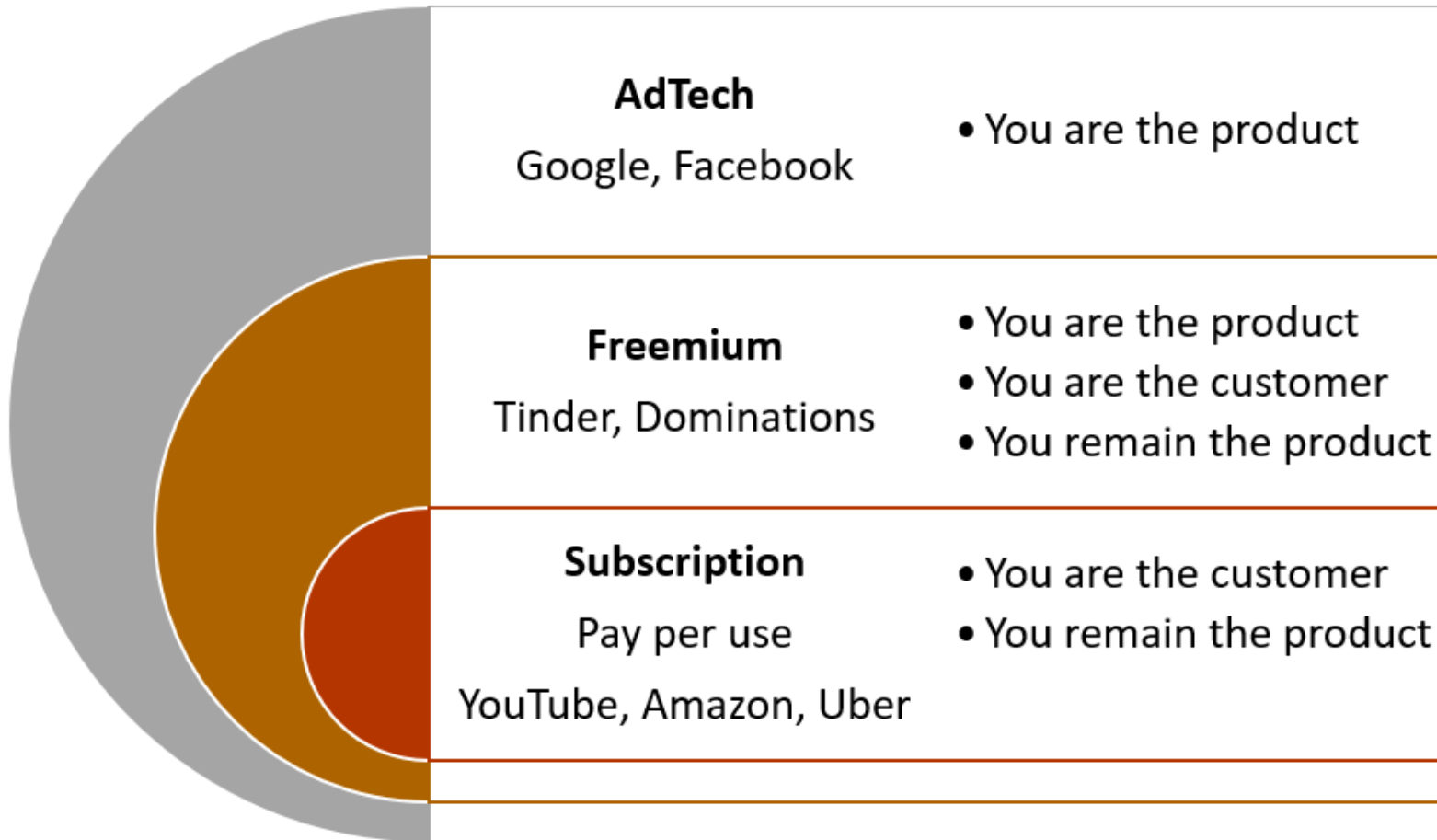


Data vs. us

- Surveillance capitalism relies on predictive models fueled by massive, intimate, updated data
 - Traces of our decisions
- Data flows are extracted by engaging platforms & apps
 - Powerful search engines
 - Effective markets on which we buy & sell
 - Wide-reaching social media
- Information asymmetry & psychological manipulation are disempowering



Feeding turkey to the turkey



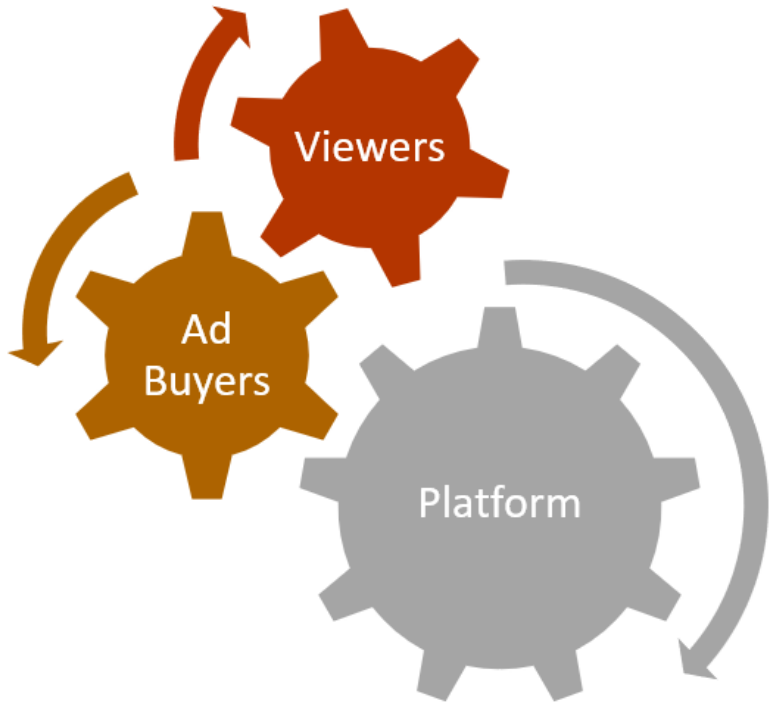
Privacy-enhancing technologies

- Enhance user control over data flows
- Diminish the vulnerability surface of our digital profile
- Monitoring algorithmic decision making
- Re-align commercial incentives



Two types of platform business models

Google, Facebook, Twitter



Viewers use the platforms for free
Ad buyers pay for the platform

Amazon, Uber, Airbnb



Buyers pay ON the platform
Sellers pay FOR the platform

A LEGO Stormtrooper figure is positioned inside a cracked brown eggshell. The eggshell is split into two halves, with the Stormtrooper standing in the left half. The background is a plain, light gray surface.

2. Data-driven tech business models

Are we customers or products?

Google, Uber, Tinder, FaceApp, digital gaming

Tech as possibility and probability

- We can extend our abilities through tech
- Tech possibilities become probabilities through business models



Making sense of tech

- Follow the money!
- Follow the **data**!



4.1 Google

How does Google make money?

The Google logo is displayed in its characteristic multi-colored font: blue 'G', red 'o', yellow 'o', blue 'g', green 'l', and red 'e'.A white search bar with rounded ends. On the left side, there is a magnifying glass icon and a vertical bar. On the right side, there is a microphone icon.

Google Search


I'm Feeling Lucky

Google offered in: [Română](#) [magyar](#) [Deutsch](#)

From advertising to AdTech

- The power of ads to change behavior is older than Big Tech
- “Torches of Freedom”: Edward Bernays’ psychoanalytical campaign of smoking for women
- Smoking = liberation





Who pays whom for an
ad you see on a blog?

November 3, 2020

Most Valuable Companies in the World - 2020



Cont Demo Gratuit

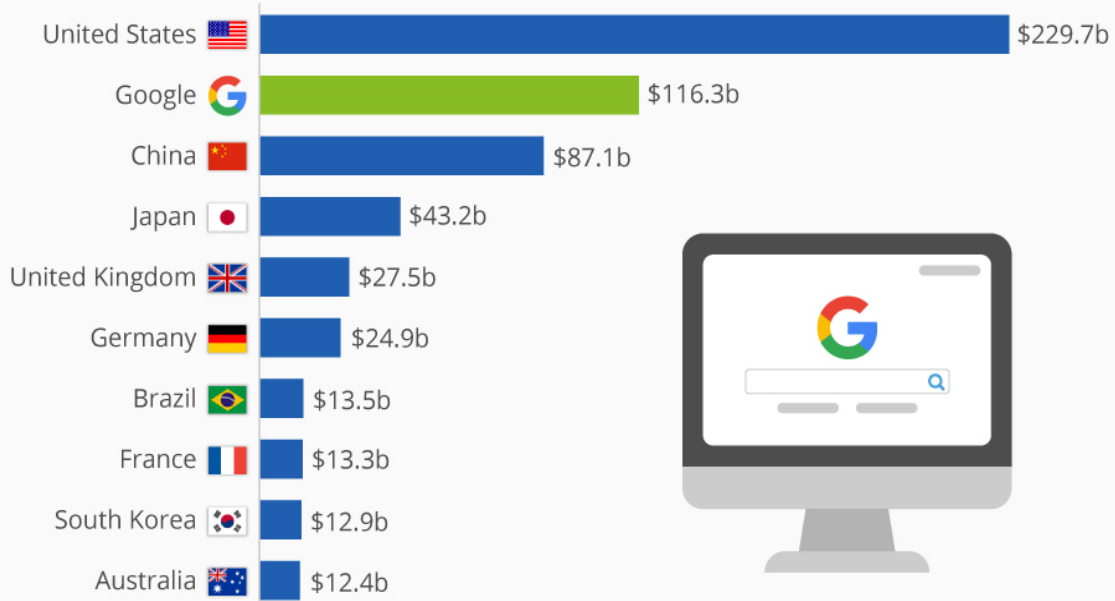
77% din conturile CFD de retail pierd bani.

Admiral Markets



The Incredible Size of Google's Advertising Business

Google's advertising revenue compared to total ad spend in the largest ad markets 2018

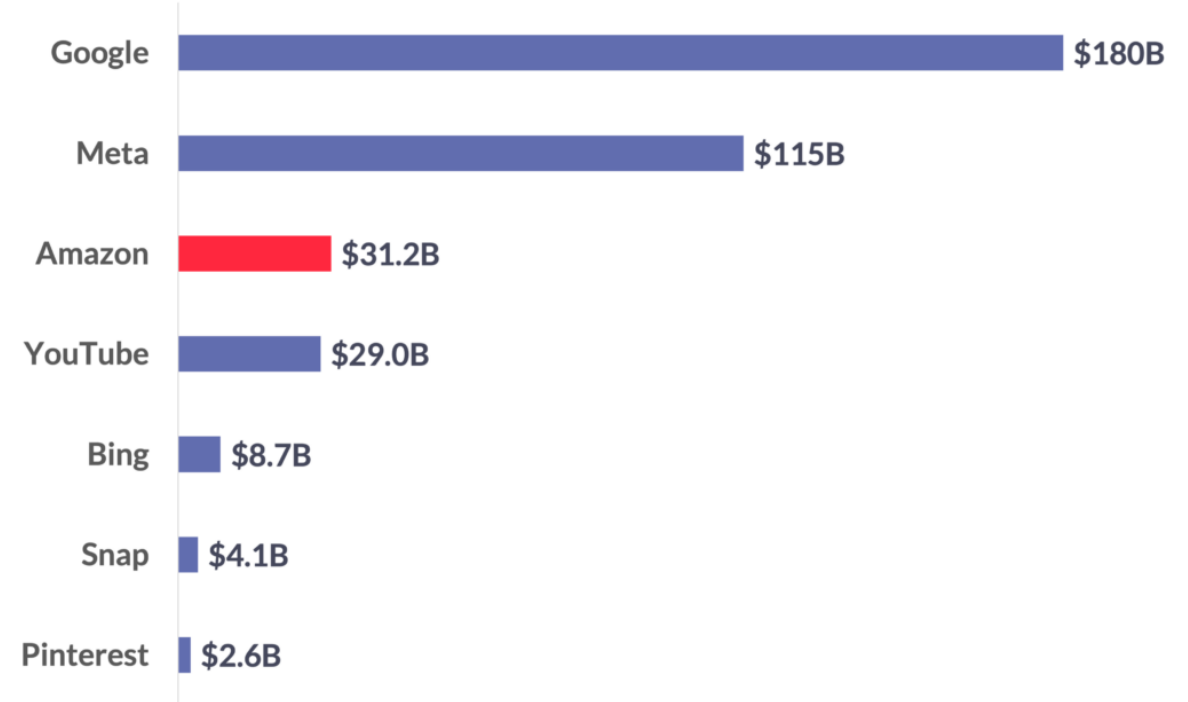


@StatistaCharts Sources: Alphabet, Zenith

statista

[Source](#), 2019

2021 Ad Revenue Across Platforms



Source: Yahoo Finance

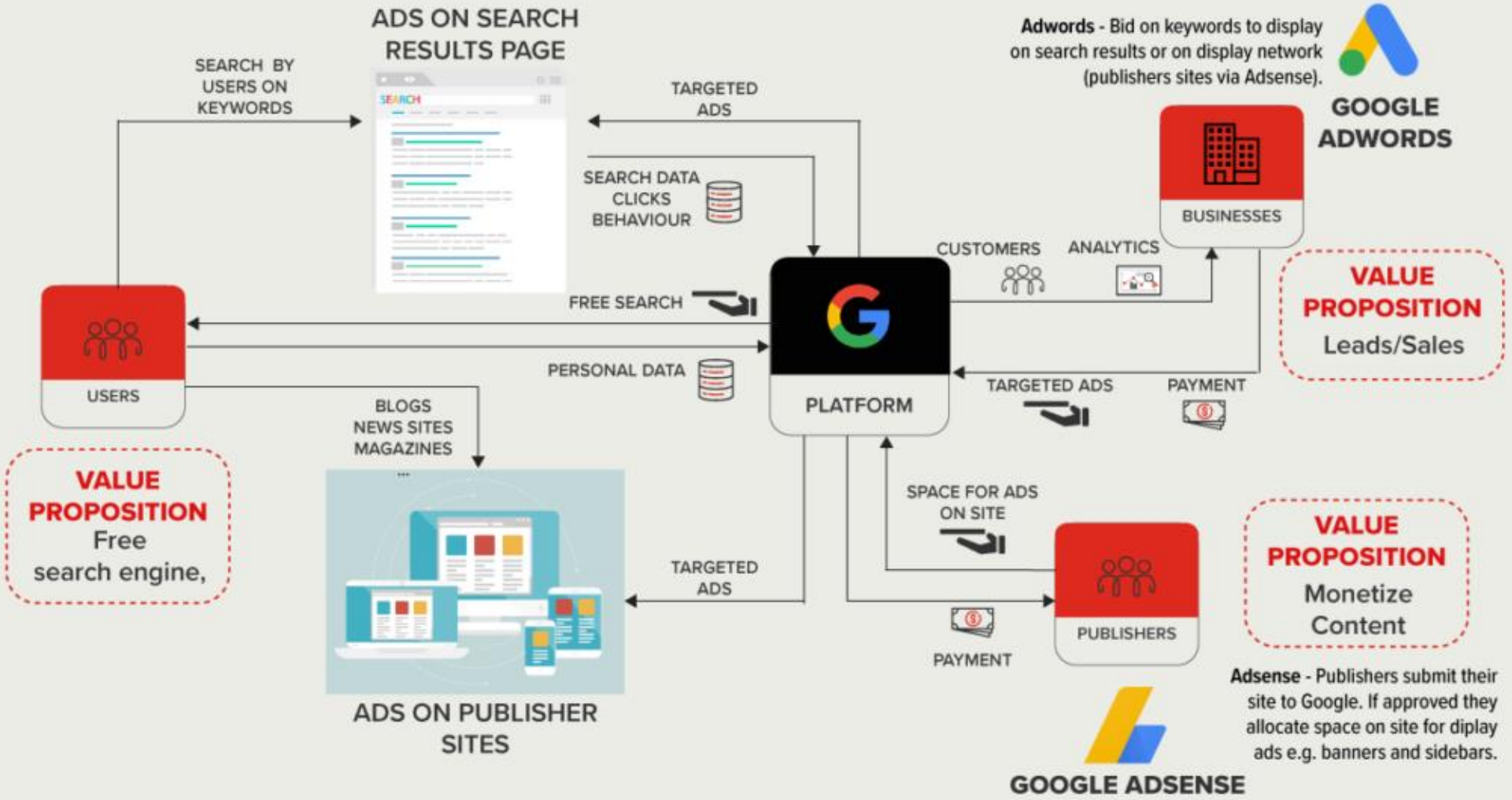
intentwise

[Source](#), 2022



GOOGLE BUSINESS MODEL

THE HIDDEN REVENUE BUSINESS PATTERN



Micro-moments are moments of monetizable despair

FEATURED STORIES

How Google Marketers Exploit Your Discomfort

We're trained to serve ads in your moments of quiet desperation



Patrick Berlinquette Following

Dec 13, 2018 · 7 min read ★

„Today, three out of four smartphone owners turn to Google first to address their immediate needs. As a result, Google marketers like me must survive on **our ability to play on your impatience and impulsiveness when you're using a mobile device.**

We must be there to serve you an ad in your “micro-moment,” the second you decide to use your phone to alleviate the discomfort of not having “it” now — whether “it” is a last-minute sale, directions to a soon-closing store, information about a fast-filling class, or anything else.”

<https://medium.com/s/story/make-orwell-fiction-again-part-2-micro-moments-9ba6e042a0c4>

think with Google™

The Basics of Micro-Moments

Want to develop a strategy to shape your consumer's decisions?
Start by understanding the key micro-moments in their journey.

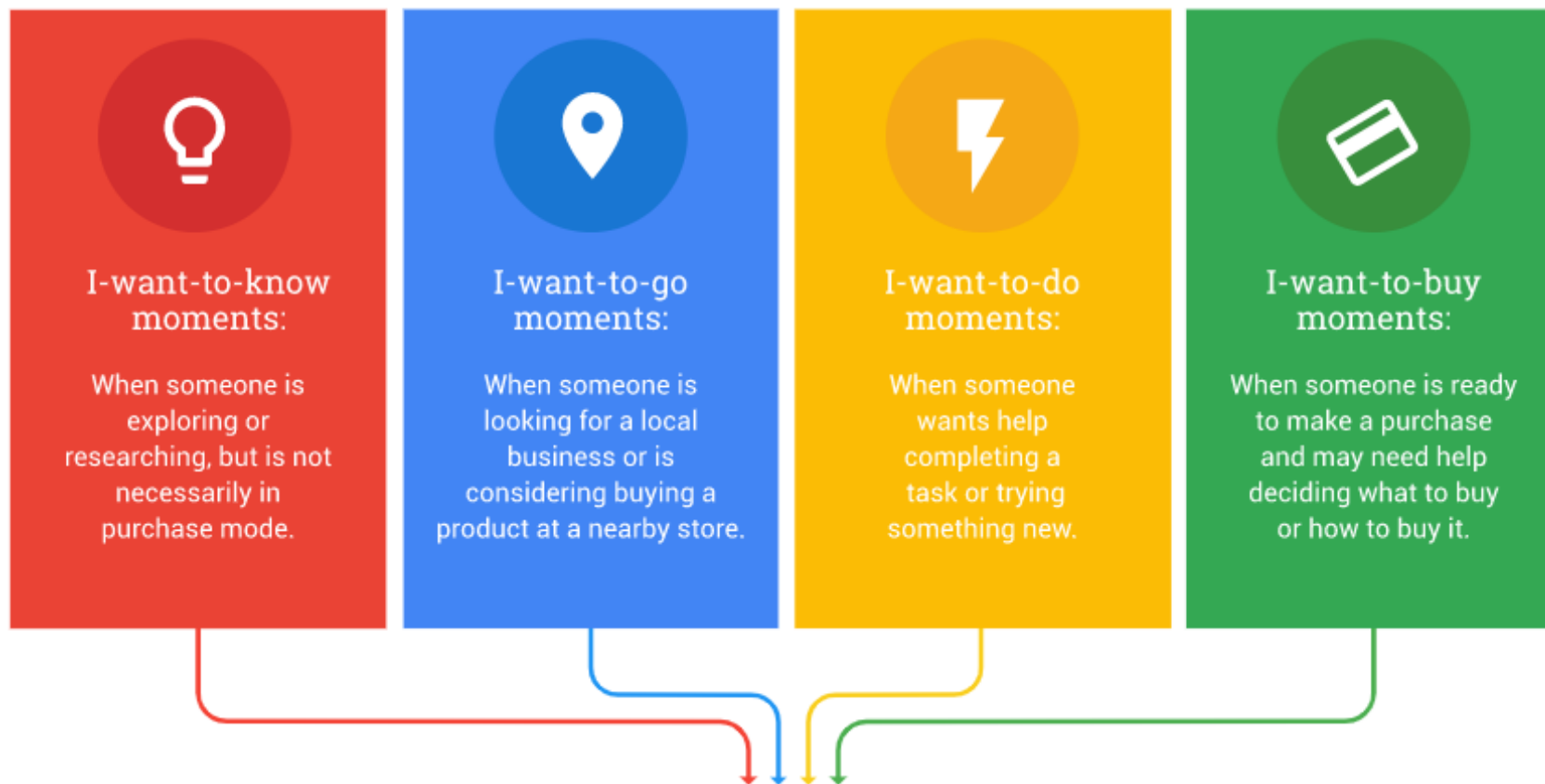


micro-moment | mīkrō-mōmənt

NOUN

An intent-rich moment when a person turns to a device to act on a need—to know, go, do, or buy.

There are 4 game-changing moments that really matter.



In these moments, consumers want what they want, when they want it—and they're drawn to brands that **deliver on their needs**.

Micro-moments

- Of leisure travelers who are smartphone users, 69% search for travel ideas during spare moments, like when they're standing in line or waiting for the subway.
- Of smartphone users, 91% look up information on their smartphones while in the middle of a task.
- Of smartphone users, 82% consult their phones while they're standing in a store deciding which product to buy.
 - One in 10 of those end up buying a different product than they had planned.

[Think with Google](#)

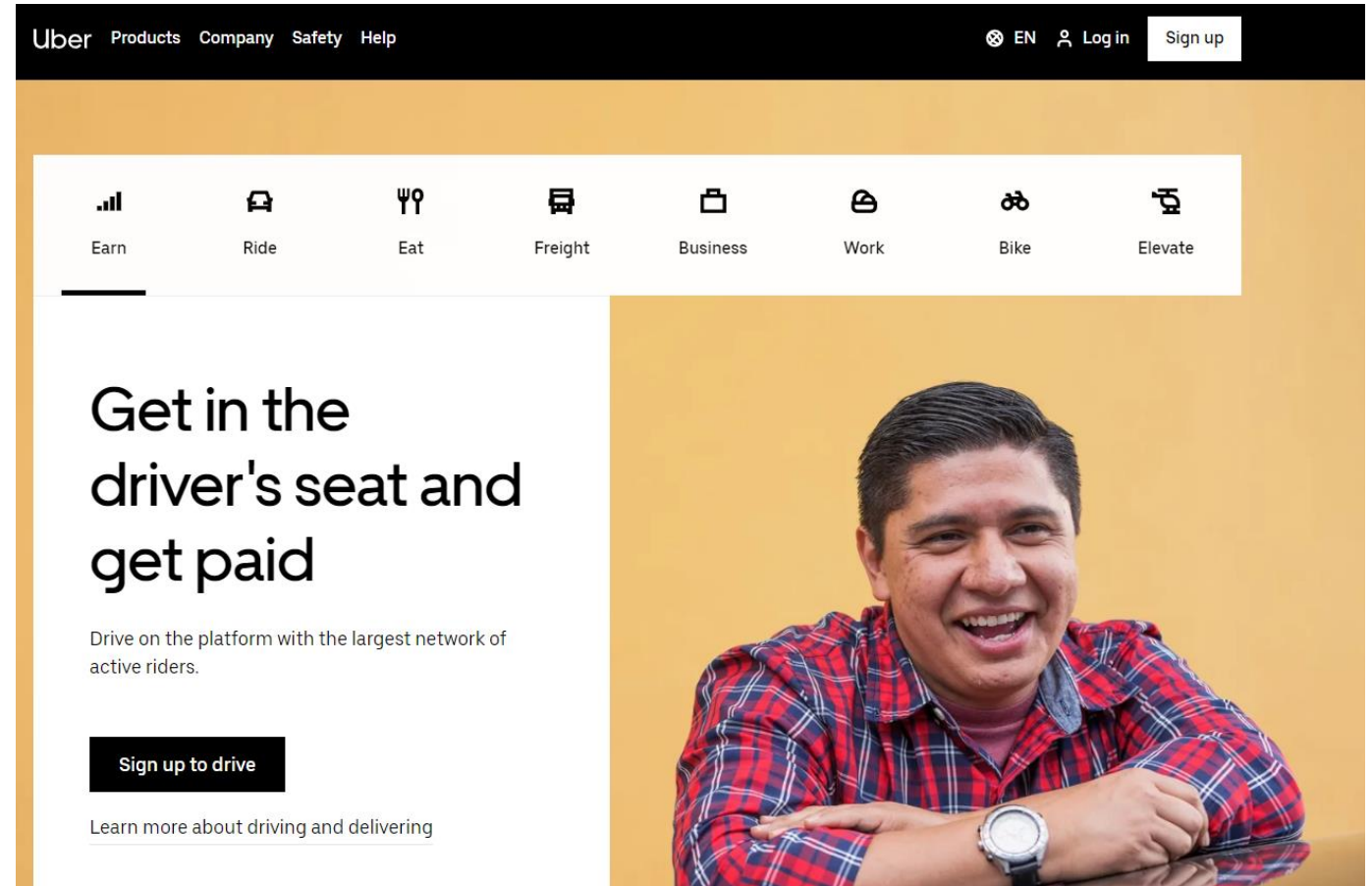
Google business model

- From ad to AdTech
 - Targeting **usual types** vs. targeting **you, now**
 - Transitioning from **needs** to **vulnerabilities**
- Personalization amplified by **scale**
 - Monopolistic extraction of value



4.2 Uber business model

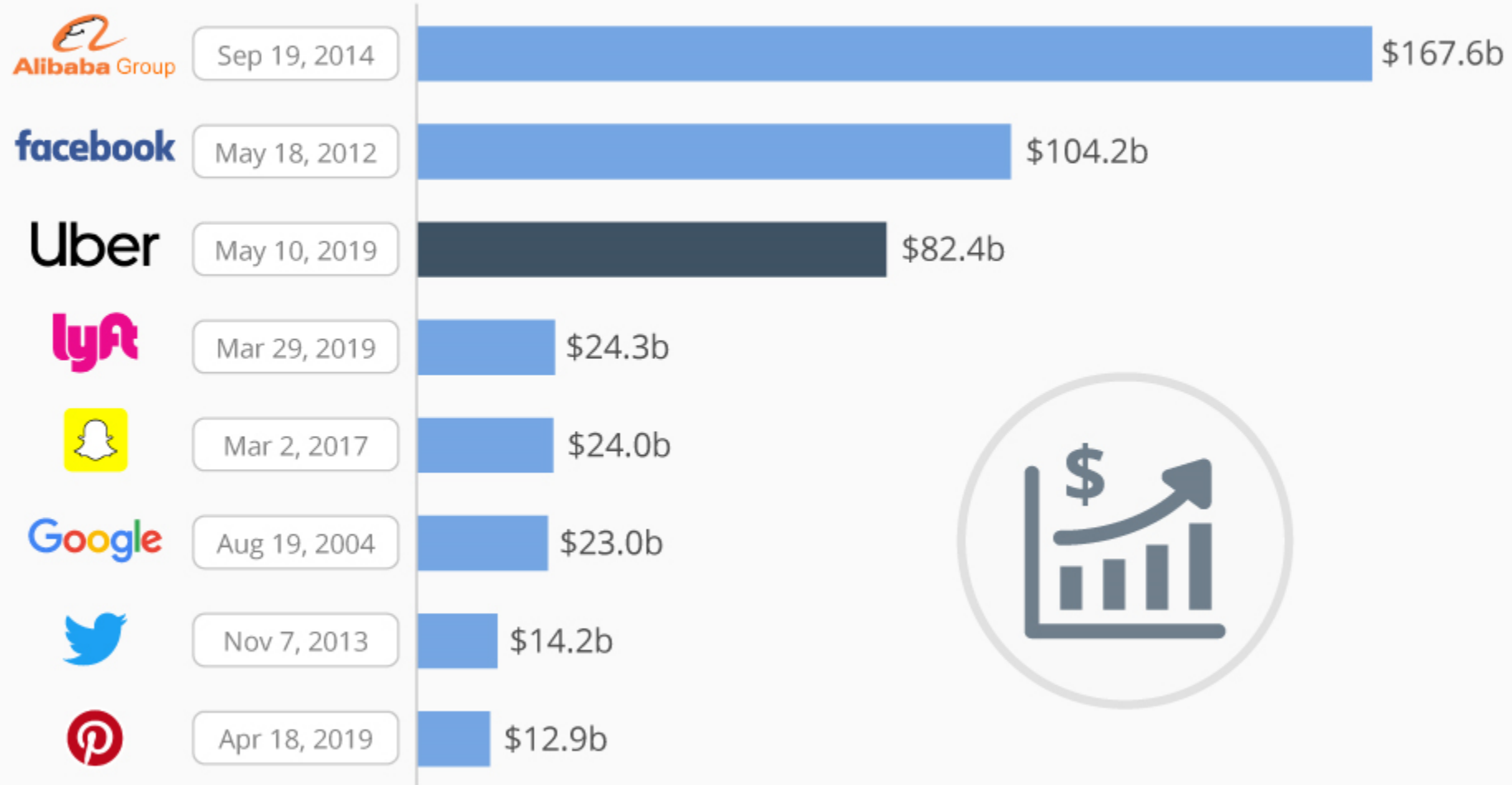
How will Uber make money?
(because it doesn't)



The screenshot shows the Uber website's navigation bar with the following links: Uber, Products, Company, Safety, Help, EN, Log in, and Sign up. Below the navigation bar is a menu with icons and labels for: Earn, Ride, Eat, Freight, Business, Work, Bike, and Elevate. The main content area features the headline "Get in the driver's seat and get paid" and the subtext "Drive on the platform with the largest network of active riders." A prominent black button with white text says "Sign up to drive". Below this button is a link that says "Learn more about driving and delivering". On the right side of the page, there is a photograph of a smiling man in a red and blue plaid shirt, with his arms crossed, wearing a watch.

How Uber's IPO Valuation Measures Up

IPO valuations of selected tech/internet companies



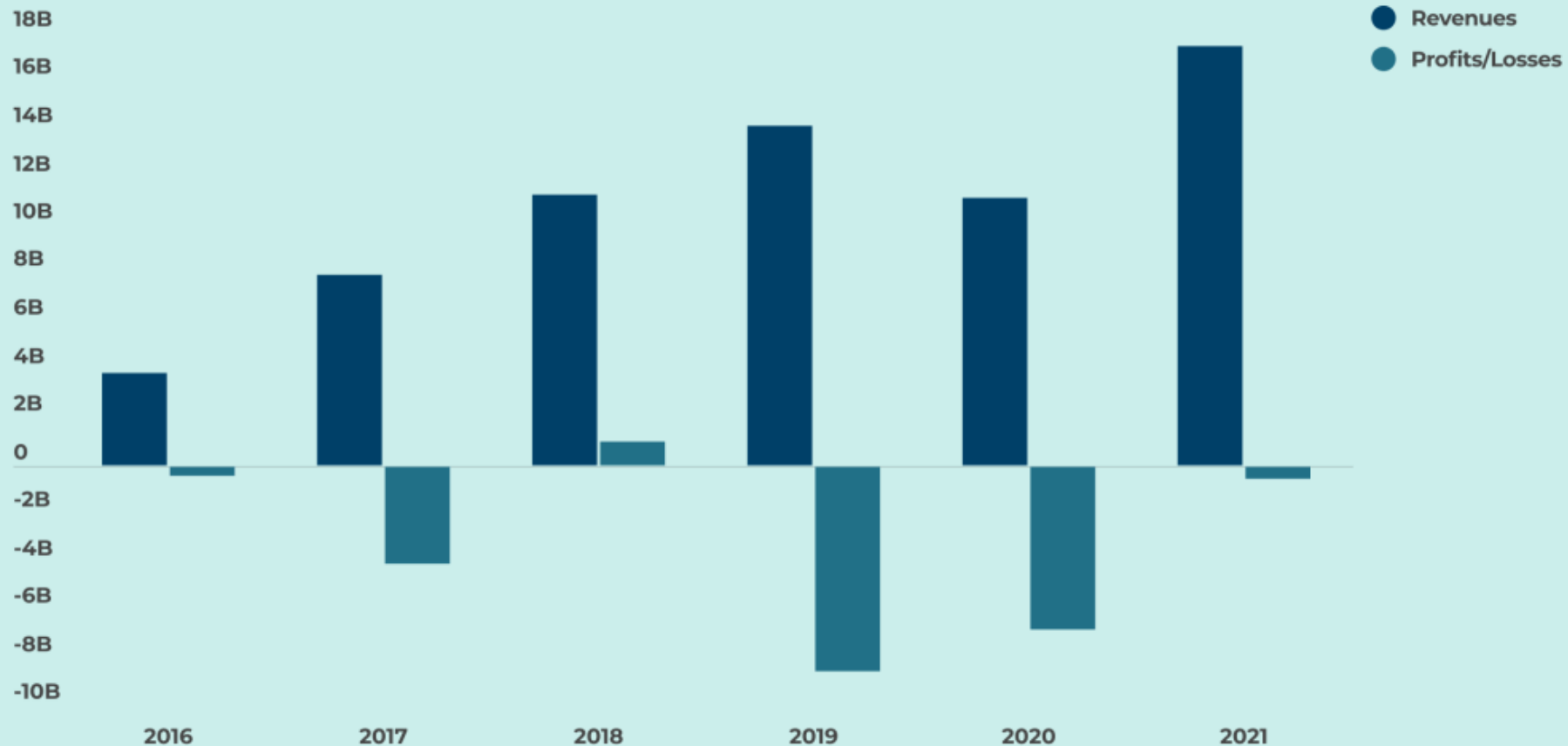
@StatistaCharts

Sources: Company Filing, Media Reports

statista

Is Uber Profitable? Uber Profitability 2016-2022

As of 2021, on net revenues of \$17.45 billion, Uber posted a net loss of just \$496 million, primarily thanks to the business divestitures of various assets. In fact, by the first nine months of 2022, Uber posted a loss from operations of \$1.69 billion on revenues for the same period of \$23.27 billion. Thus, Uber is not profitable as of 2022.



Uber quarterly net income

Net income (loss) totals -\$24.7 billion since Q1 2017, when Uber first publicly reported this data

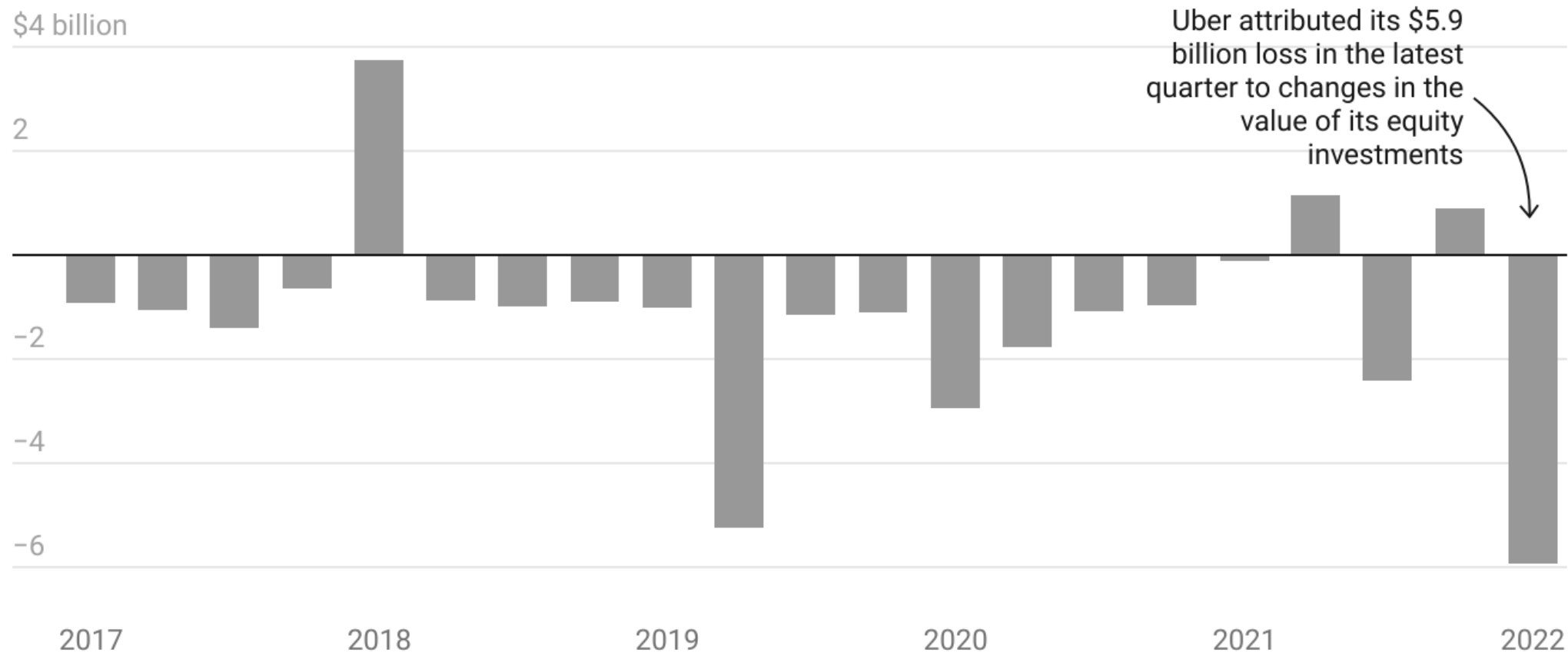


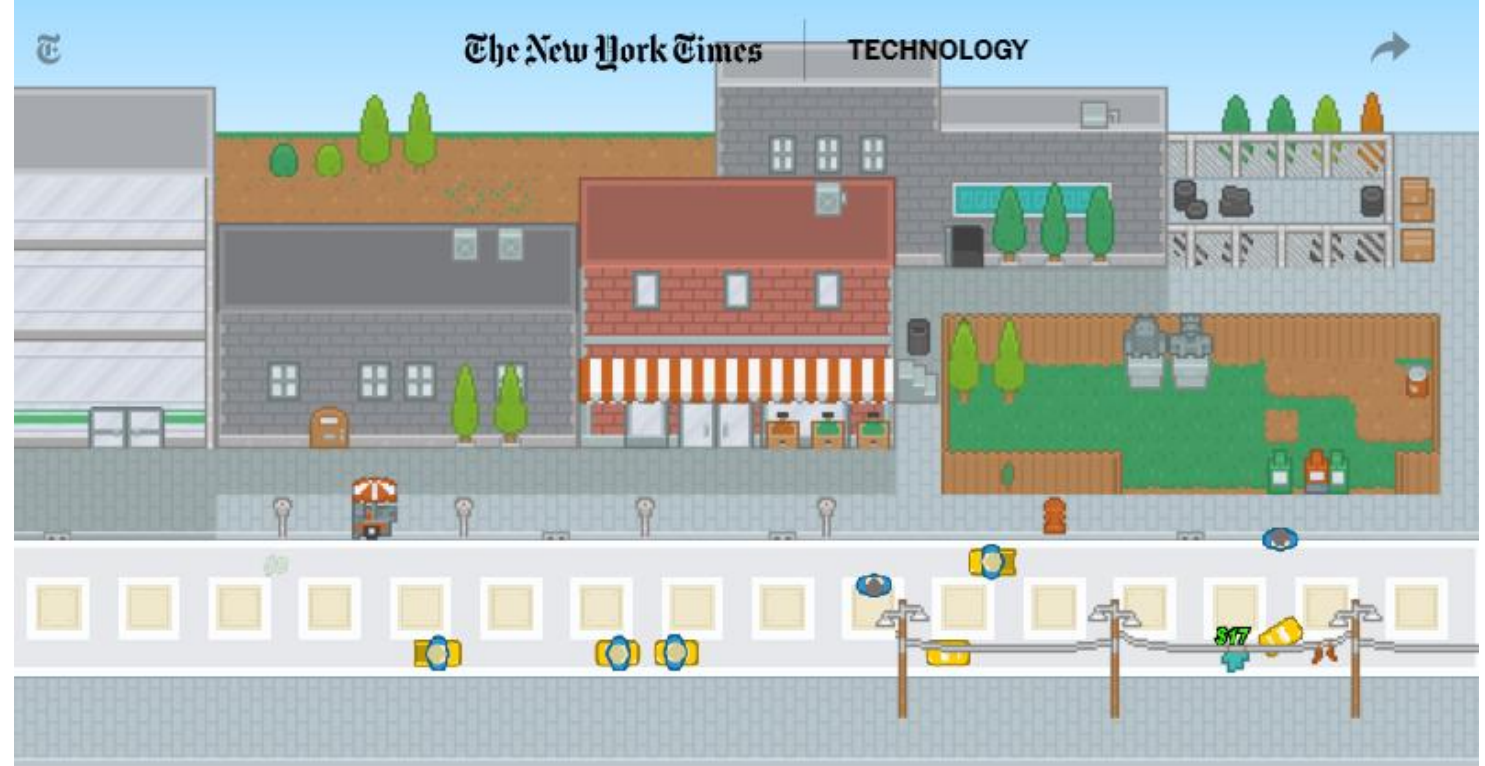
Chart: Ali Griswold/Oversharing • Source: Uber • Created with Datawrapper

[Source](#)

Interest misalignment

- “Uber leads drivers to believe that the interests of riders, drivers, and the firm are aligned, when in fact they are **divergent** and often opposed.
- Uber enjoys **total control of its algorithm** and faces strong incentives to design it in such a way as to maximize its own growth and earnings at drivers’ expense.
- The novel types of harms that drivers may incur as a result are often **individually small but significant in aggregate**, but **invisible** to workers and regulators”. ([Muller](#), 2020)

“Employing hundreds of social scientists and data scientists, Uber has experimented with video game techniques, graphics and noncash rewards of little value that can prod drivers into working longer and harder — and sometimes at hours and locations that are less lucrative for them.”
(Scheiber 2017)



How Uber Uses Psychological Tricks to Push Its Drivers' Buttons

The company has undertaken an extraordinary experiment in behavioral science to subtly entice an independent work force to maximize its growth.



Uber

20 JUL 2020 **NEWS**

Uber Drivers in GDPR Fight to Unmask Algorithms



Phil Muncaster UK / EMEA News Reporter , Infosecurity Magazine

[Email Phil](#) [Follow @philmuncaster](#)

Two Uber drivers are taking the platform to court, arguing that it has failed to meet its GDPR obligations to reveal detailed profiling data about them and how it is used, according to reports.

The case will be launched today by the UK-based [App Drivers and Couriers Union](#) in the district court in Amsterdam, where the ride hailing giant's European operations are headquartered.

The drivers, also based in the UK, want to know how the data and algorithms are used by the firm to make silent automated decisions about their jobs.

Related to This Story

[AI and Data Privacy: Compatible, or at Odds?](#)

[Is Hype Around AI Muddling the Message for IT Decision Makers?](#)

[In Bots We Trust: Better Enterprise Security Through AI](#)

[Cybersecurity Predictions for 2018 - Part One](#)

Users vs. cash vs. data

- „Uber had 91 million monthly active users by the end of last year
- The market leader in the ridesharing space amassed operating losses in excess of \$12 billion (2014-2018), making it the king of loss-making tech unicorns.
- Even Amazon, infamous for losing money in its early years, never piled up losses at a rate even remotely close to Uber’s.”
- Vision: „Amazon of transportation”

Felix Richter, Statista, <https://www.statista.com/chart/17705/uber-revenue-costs-and-cumulative-operating-losses/>

Uber and data

Uber uses travelers' and drivers' data to...

- Incentivize drivers to drive more and in specific times & places
 - Are drivers workers or independent contractors? Different incentives allowed
- Price trips
 - Surge pricing
- Partner with other companies in marketing alliances
- Partner with public authorities for traffic regulation, finding missing persons
- Other future uses?

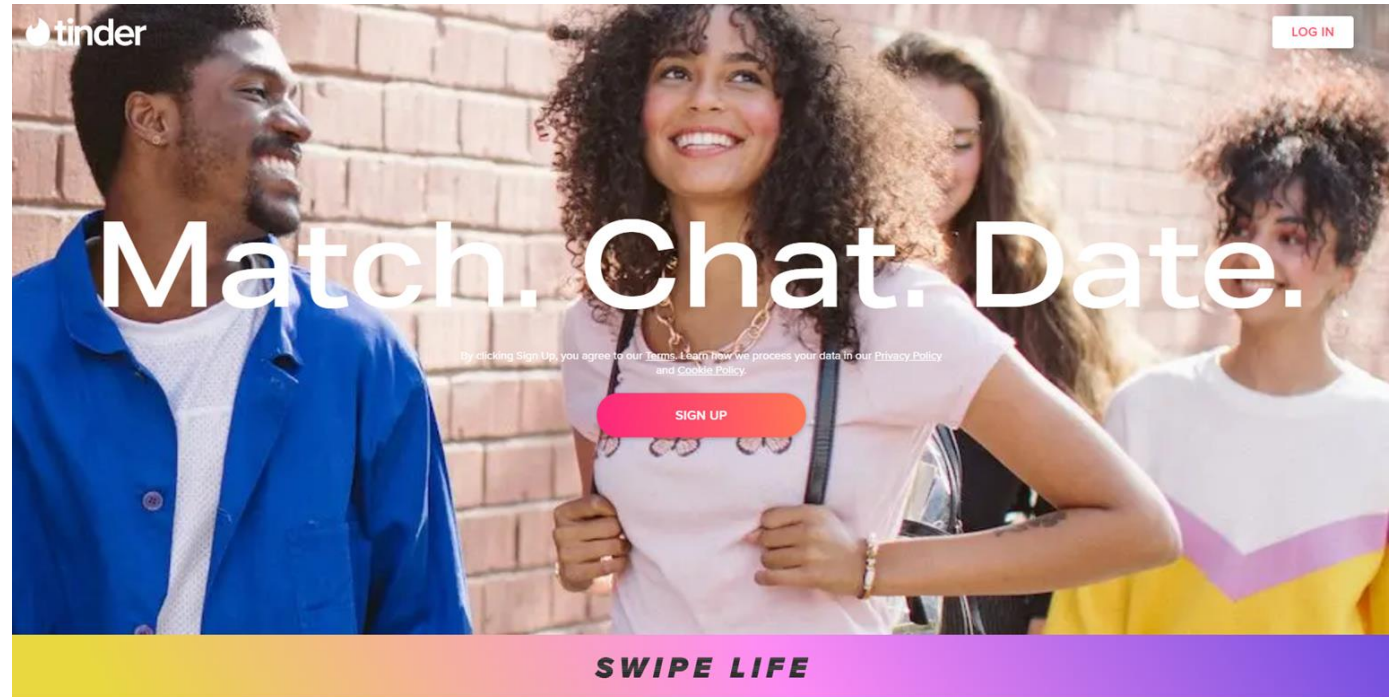
Uber business model

- To users: promise of effectiveness and personalization
- To investors: promise of monopolistic exploitation
- Money invested in disrupting taxi markets worldwide through dumping prices
- Algorithmic exploitation of gig drivers



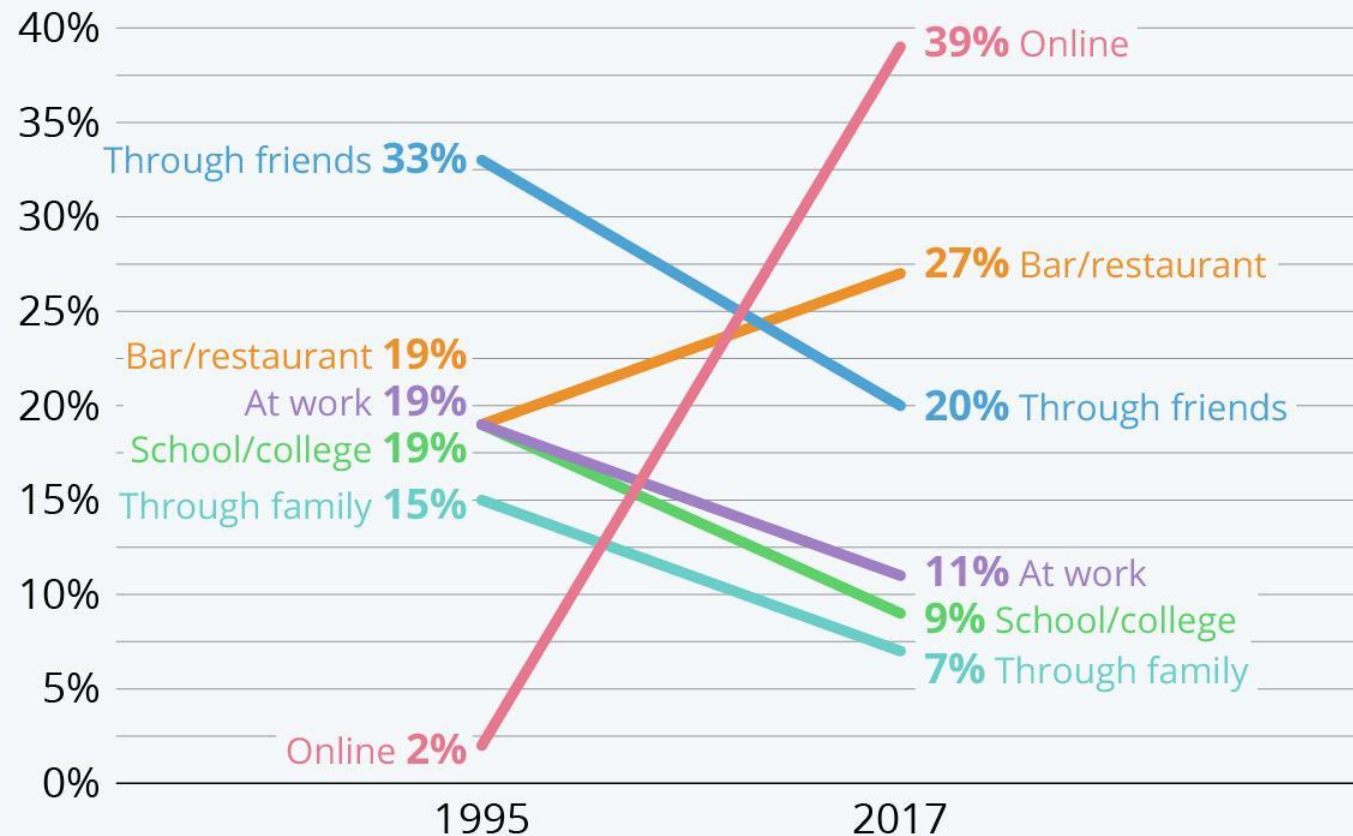
4.2 Tinder & Dating Apps

How does Tinder make money?



How Couples Met

Share of heterosexual U.S. couples who met in the following ways



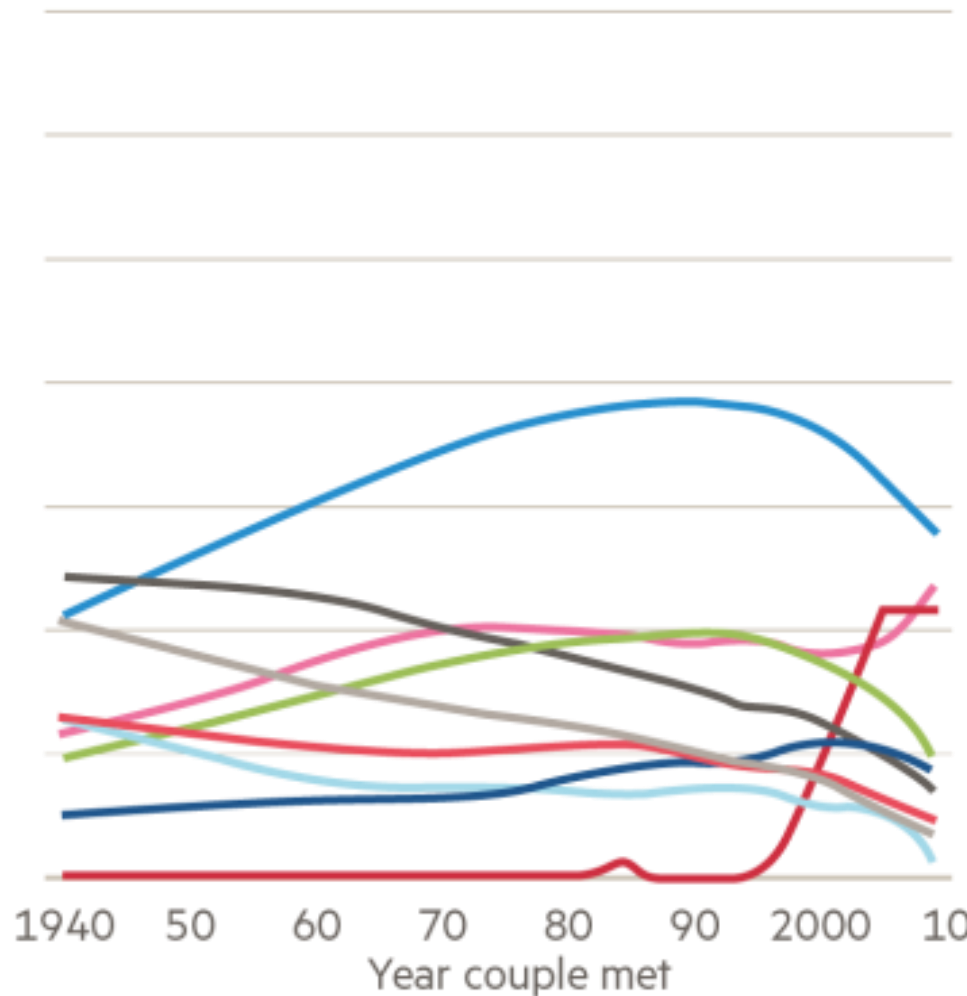
Survey of 5,421 adults. Other options: In church, in the neighborhood
Source: How Couples Meet and Stay Together surveys by Stanford University



How we met our partners in the last decades

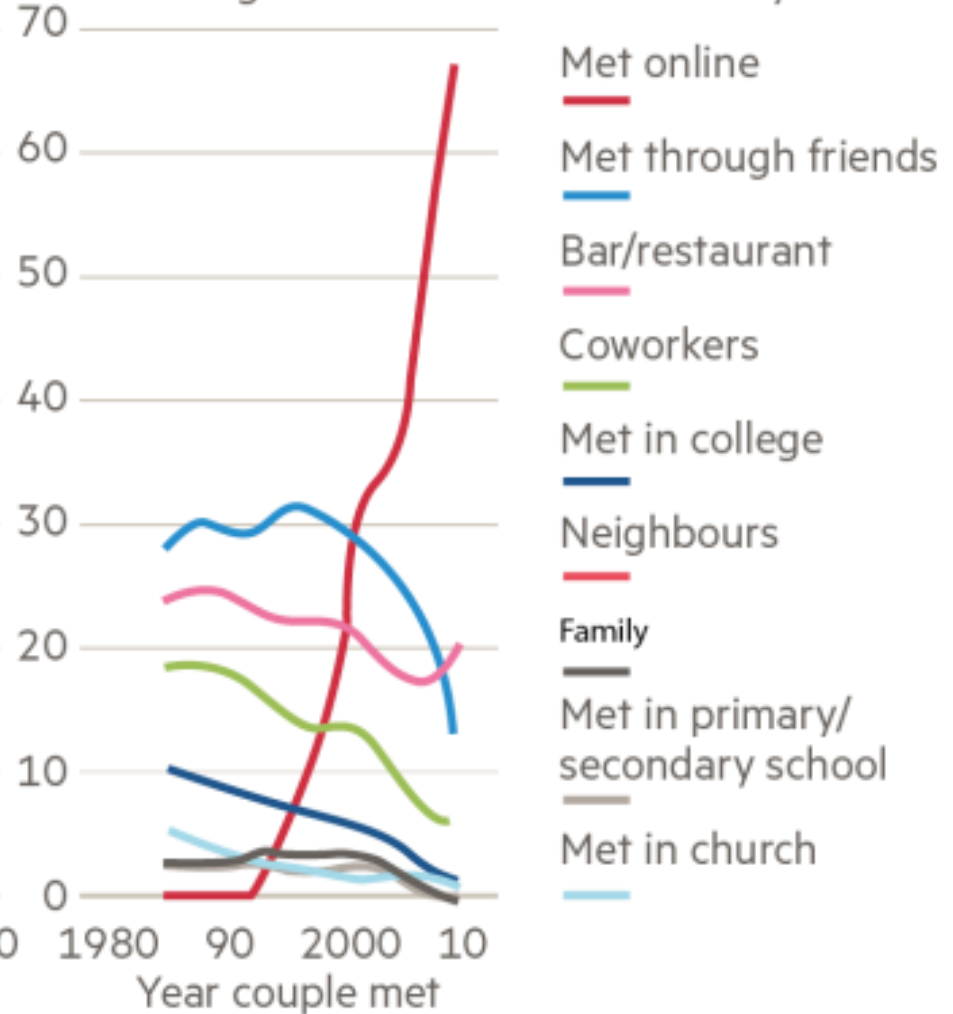
Heterosexual couples

Percentage of those who met this way



Same-sex couples

Percentage of those who met this way



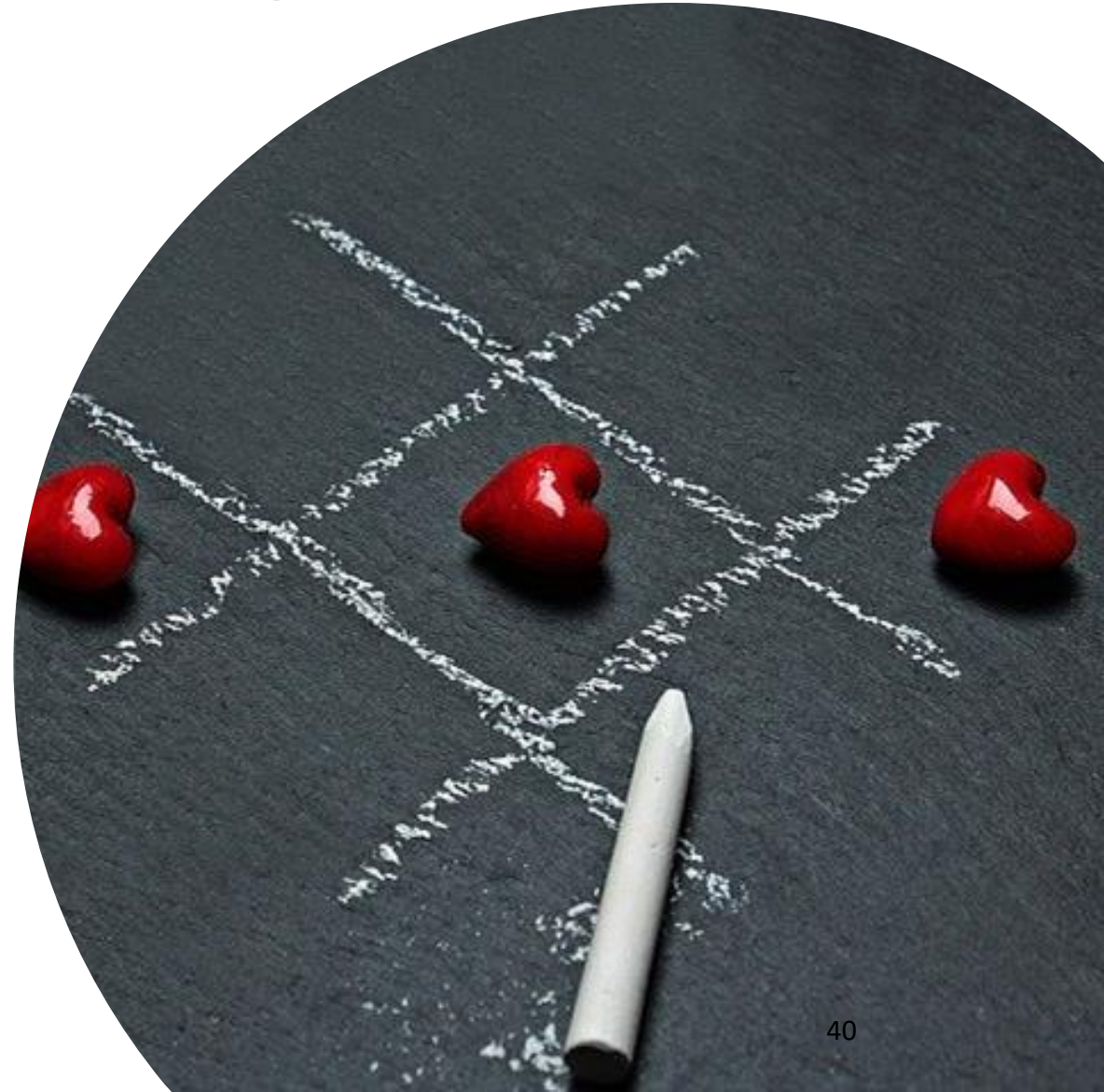
Source Rosenfeld and Thomas in Ortega and Hergovich (2017)

© FT

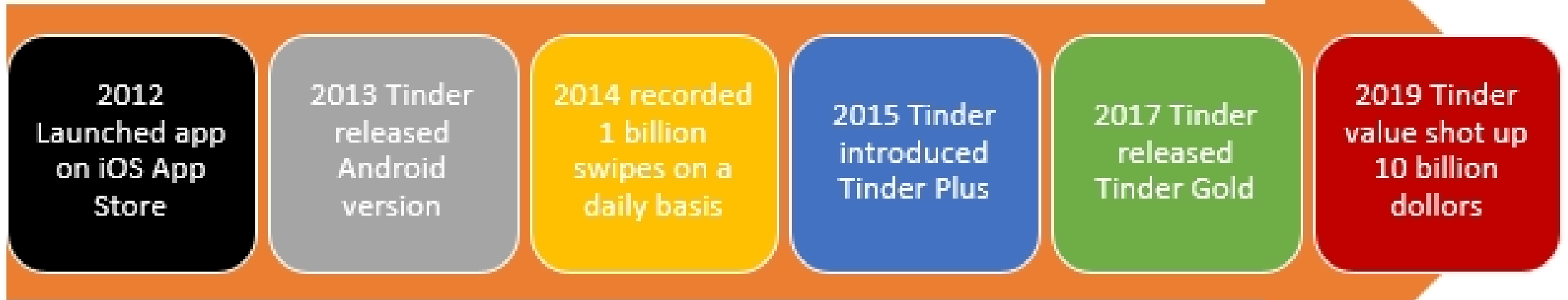
[Source](#)

Playing & paying in the Tinder game

- The dating **game** = layered **markets**
- What do we pay?
 1. Erotic capital for swipes & dates
 2. Money for choice
 - “Cheating at the dating game”
 3. **Personal data** for access



Paying for...

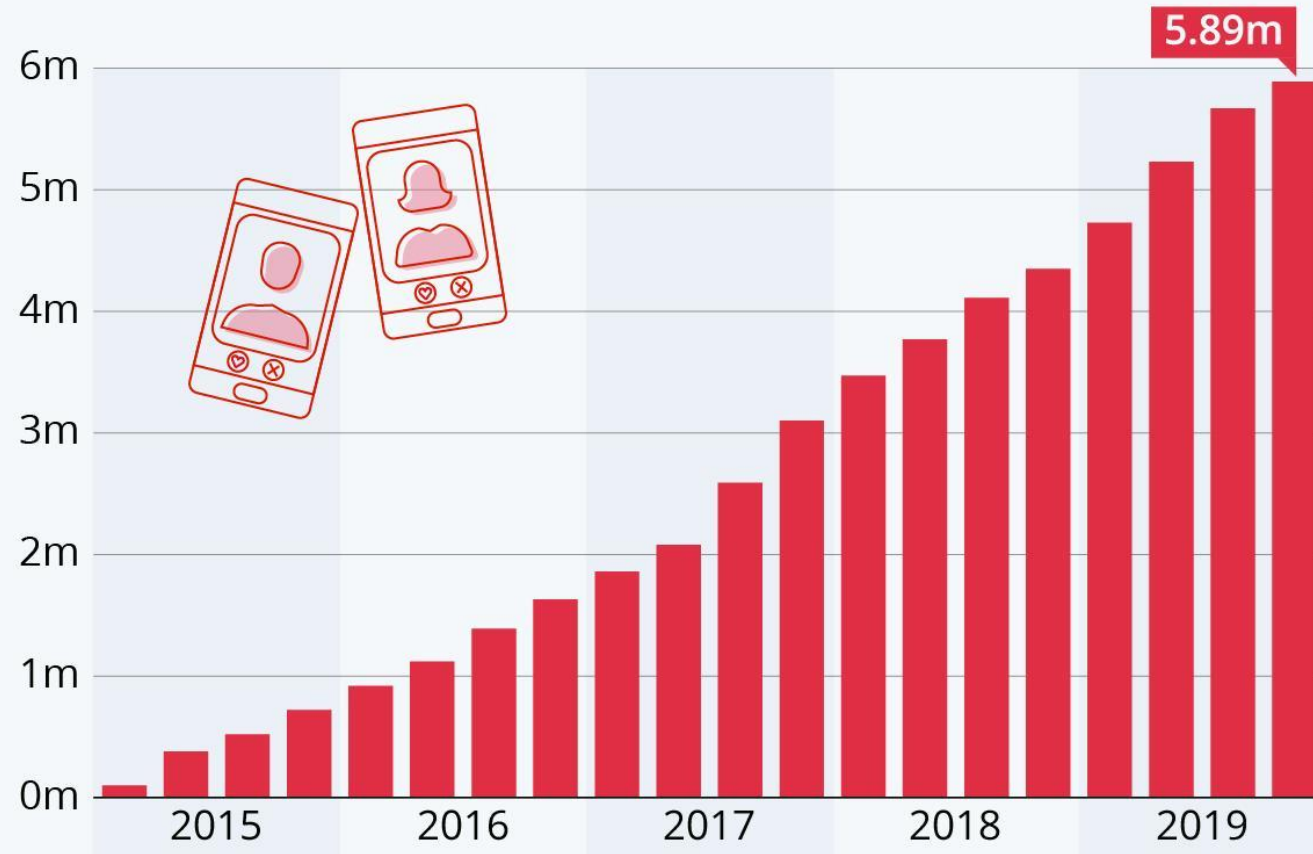


- Tinder Plus = the subscription model, including rewind, passport, and ad-free swiping
- Tinder Gold = Tinder Plus + See who Likes You before you Like or Nope. New Top Picks every day. Unlimited Likes. Rewind.

Tinder offers paid subscriptions, but data is still being harvested

Cheating at the Dating Game

Worldwide paying subscribers of dating app Tinder*

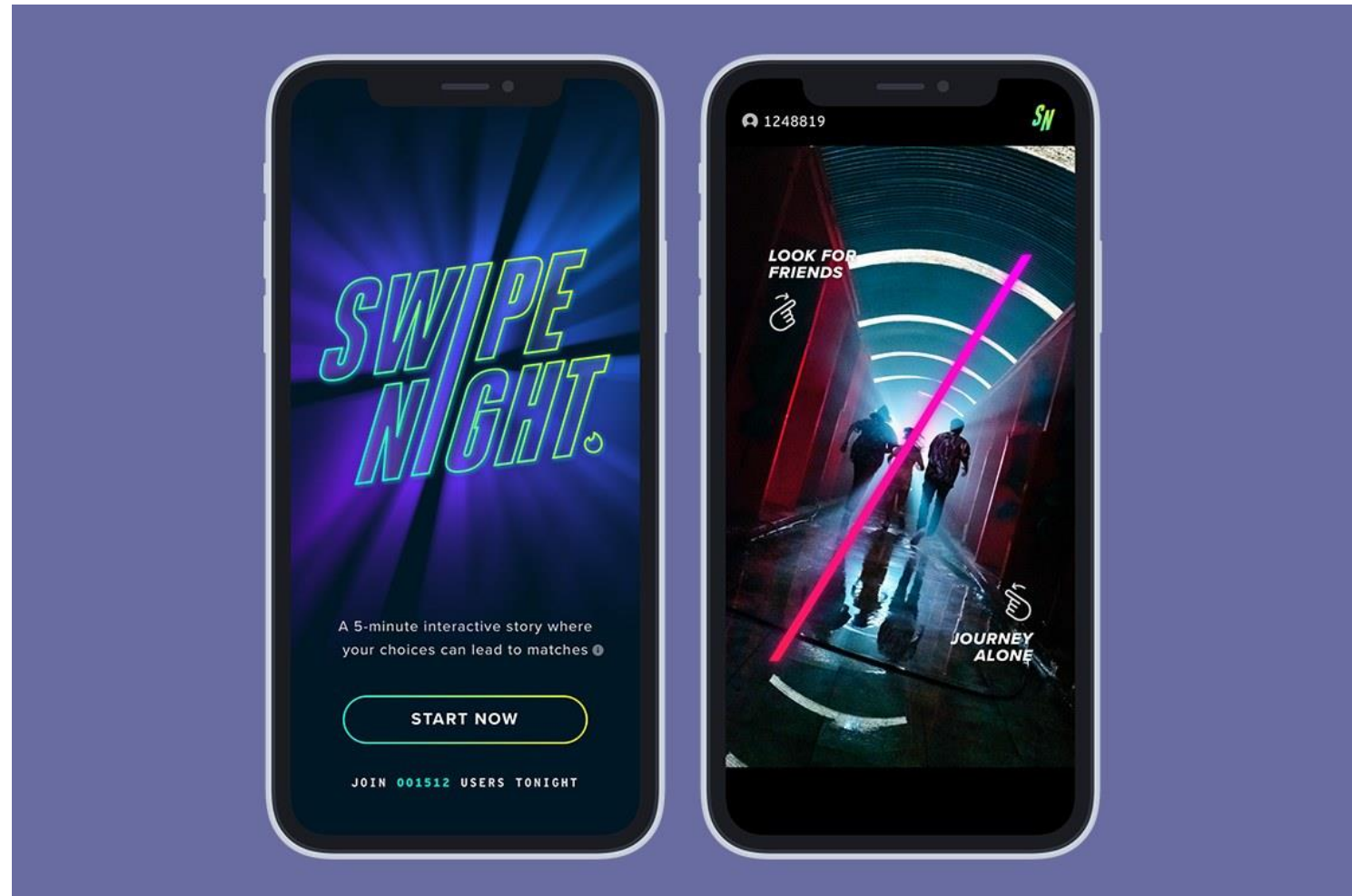


* figures represent quarterly averages
Source: Match Group



Data harvesting in Tinder

Changing
tools for data
harvesting:
in-app games



ARIELLE PARDES

CULTURE 09.24.2019 07:00 AM

Tinder Wants Users to Find Love in the Apocalypse

The dating app's new end-of-the-world, choose-your-own-adventure game, called Swipe Night, will generate new matches based on your choices.

Swipe Night episodes will take place each Sunday in October from 6 pm until midnight, when Tinder says it sees a surge in activity. Each one will last about five minutes and end with a fresh match queue. But you won't just be paired with your dystopian doppelgängers. "We'll look at the choices you've made and match you with a mix of people, some of whom have made the same choices, some of whom have made different choices," Mehta says. The new matching algorithm will be layered on top of preexisting filters, like preferences for age, gender, and location. (Alas, the person who may be your best match in the apocalypse may still be a few inches too short.)

TINDER BUSINESS MODEL

TINDER PLUS, MARCH 2015

Tinder Plus, premium model featured to allow unlimited matches.

The price of a Tinder Plus subscription was announced based on age group.

1. Users >28years charged \$19.99 per month.
2. Users <28years charged \$9.99 per month.

TINDER GOLD, JUNE 2017

Tinder Gold is an exclusive paid service which provides all the Tinder Plus features along with the new "Likes You" feature.

This experimental feature has currently been priced between \$14.99 to \$82.99 per month depending on age & location.

SPONSORED PROFILES

Various corporate and events have started partnering with Tinder to show their sponsored content in the form of profiles. This feature pricing starts from \$9.00 depending on the requirement & location.

BOOST

Boost increases the chances for a match for up to 10x more profile views and 3x more matches. This is a standalone feature having price range of \$1.99 to \$3.99 per boost.

Tinder's privacy policy: How we share your data

- **With other users**

You share information with other users when you voluntarily disclose information on the service (including your public profile). Please be careful with your information and make sure that the content you share is stuff that you're comfortable being publically viewable since neither you nor we can control what others do with your information once you share it.

If you choose to limit the audience for all or part of your profile or for certain content or information about you, then it will be visible according to your settings.

- **With other Match Group businesses**

Tinder is part of the Match Group family of businesses which, as of the date of this Privacy Policy, includes websites and apps such as Tinder, OkCupid, Plenty of Fish, Match, Meetic, BlackPeopleMeet, LoveScout24, OurTime, Pairs, ParPerfeito, and Twoo (for more details, click [here](#)).

- **With our service providers and partners**

We use third parties to help us operate and improve our services. These third parties assist us with various tasks, including data hosting and maintenance, analytics, customer care, marketing, advertising, payment processing and security operations.

We may also share information with partners who distribute and assist us in advertising our services. For instance, we may share limited information on you in hashed, non-human readable form to advertising partners.

We follow a strict vetting process prior to engaging any service provider or working with any partner. All of our service providers and partners must agree to strict confidentiality obligations.

Shady Data Brokers Are Selling Online Dating Profiles by the Millions

Tactical Tech and artist Joana Moll bought one million dating profiles for \$153.

SHARE



TWEET



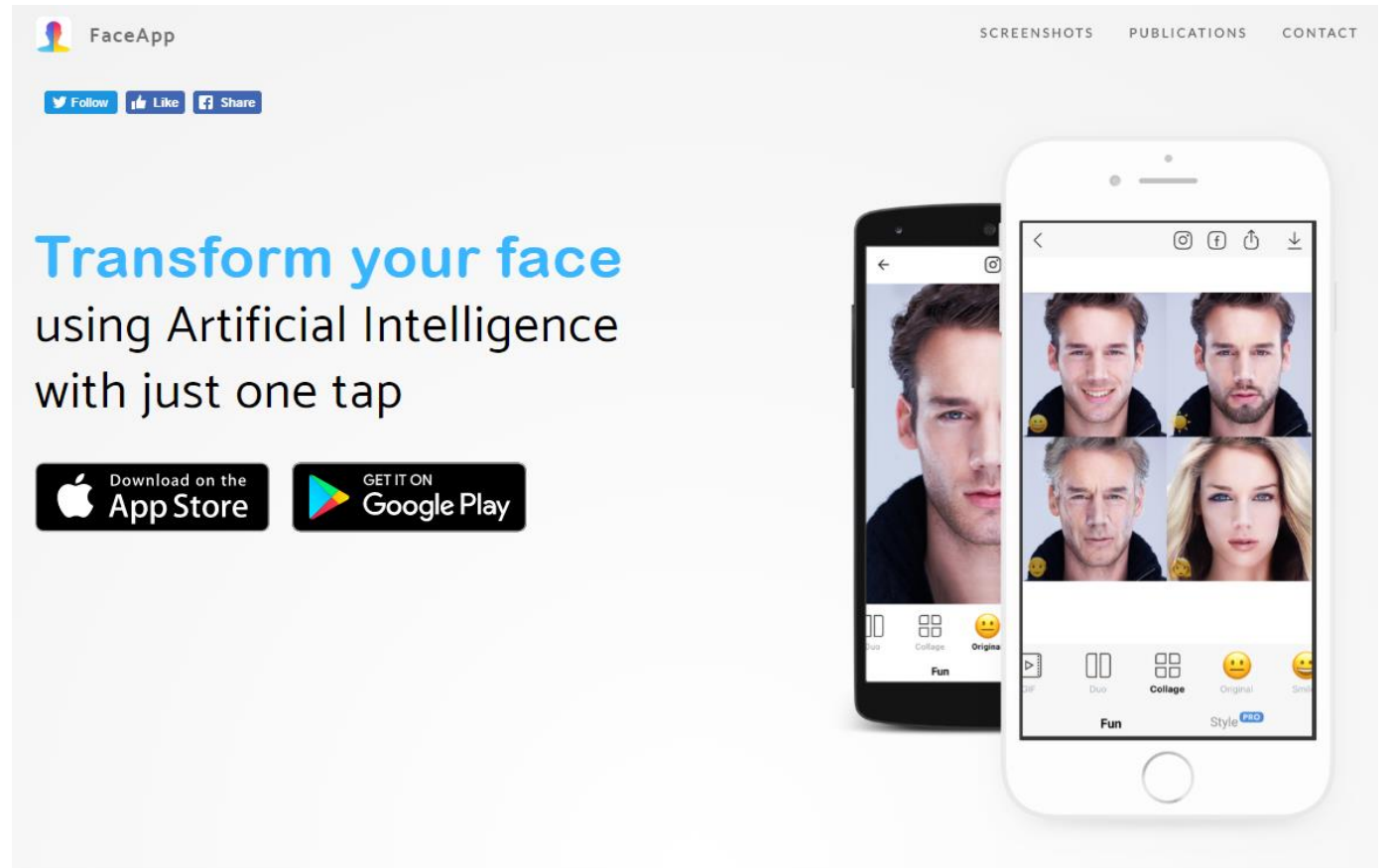
Tinder business model

- Paid subscriptions are complemented by selling data to brokers
- Dating profiles include highly sensitive information
 - Sexual orientation
 - Sexual behaviors
- Users are often not aware that their behavior on the app translates into marketable profiles



4.4 FaceApp & just-for-fun apps

How does FaceApp make
money?



The screenshot displays the FaceApp website interface. At the top left is the FaceApp logo, and at the top right are navigation links for 'SCREENSHOTS', 'PUBLICATIONS', and 'CONTACT'. Below the logo are social media interaction buttons for 'Follow', 'Like', and 'Share'. The main headline reads 'Transform your face using Artificial Intelligence with just one tap'. Below this are two prominent buttons: 'Download on the App Store' and 'GET IT ON Google Play'. On the right side, two smartphones are shown. The smartphone in the foreground displays a grid of four face transformation examples: a man's face with a beard, a man's face with a different beard style, a man's face with grey hair, and a woman's face with blonde hair. The smartphone in the background shows a single face transformation example.

FaceApp business model

- “FaceApp utilises a premium subscription revenue model.
- Users who want pictures shorn of the FaceApp watermark, an ad-free experience, and access to handful of premium features can invest in a premium subscription.
- Users are able to pay \$3.99/month for premium usage. Keener users can part with \$20 for a year, or those who are convinced they’re going to get substantial mileage from the app for years to come can pay a one-off \$40 fee for lifetime access. (...)
- Forbes estimates that the app is making a minimum of \$4 million in annual revenue, using what it claims are conservative figures”

<https://www.businessofapps.com/data/faceapp-statistics/>

FaceApp Craze Reaches New Heights

Estimated worldwide FaceApp downloads by platform (as of July 21, 2019)



Base: Android = 54 countries, iOS = 55 countries

Source: Priori Data



3,314,532 views | Jul 17, 2019, 12:38pm

Viral App FaceApp Now Owns Access To More Than 150 Million People's Faces And Names



John Koetsier Contributor @
Consumer Tech

John Koetsier is a journalist, analyst, author, and speaker.

f Everyone's seen them: friends posting pictures of themselves now, and years in the future.



Viral app FaceApp has been giving people the power to change their facial expressions, looks, and now age for several years. But at the same time, people have been giving FaceApp the power to use their pictures — and names — for any purpose it wishes, for as long as it desires.



You grant FaceApp a perpetual, irrevocable, nonexclusive, royalty-free, worldwide, fully-paid, transferable sub-licensable license to use, reproduce, modify, adapt, publish, translate, create derivative works from, distribute, publicly perform and display your User Content and any name, username or likeness provided in connection with your User Content in all media formats and channels now known or later developed, without compensation to you. When you post or otherwise share User Content on or through our Services, you understand that your User Content and any associated information (such as your [username], location or profile photo) will be visible to the public.

FaceApp terms of use

Once something is uploaded to the cloud, you've lost control whether or not you've given away legal license to your content. That's one reason why privacy-sensitive Apple is doing most of its AI work [on-device](#).

And it's a good reason to be wary when any app wants access and a license to your digital content and/or identity.

As former Rackspace manager Rob La Gesse mentioned today:

To make FaceApp actually work, you have to give it permissions to access your photos - ALL of them. But it also gains access to Siri and Search Oh, and it has access to refreshing in the background - so even when you are not using it, it is using you.

Rob La Gesse

Key FaceApp Statistics

- 150 million lifetime FaceApp downloads as of July 2019
- 100 million Android FaceApp downloads as of July 2019
- 86 million FaceApp users have uploaded pictures to the app
- 12.7 million new FaceApp users downloaded the app in a single week in July 2019, according to Sensor Tower

M. Iqbal, FaceApp Revenue and Usage Statistics (2019)
<https://www.businessofapps.com/data/faceapp-statistics/>

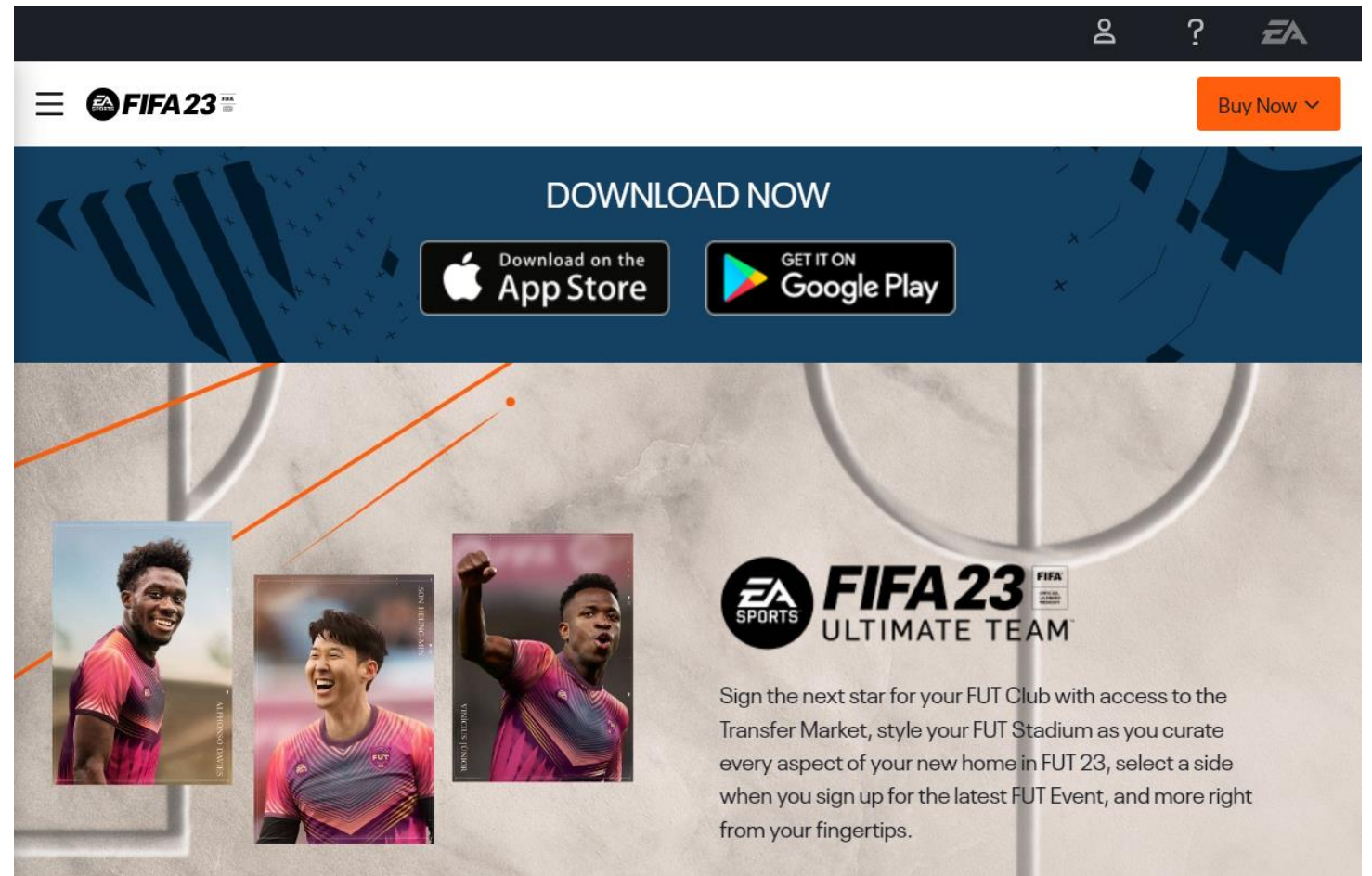
FaceApp business model

- Uncertainty over how photos are stored and shared
- Facial data is highly sensitive
- Deleting accounts does not automatically mean deleting stored data



4.5 Online gaming

How does FIFA UltimateTeam or DomiNations make money?



The screenshot shows the top section of the FIFA 23 Ultimate Team website. At the top right, there are icons for user profile, help, and the EA logo. Below this is a navigation bar with the EA logo, the text 'FIFA 23', and a 'Buy Now' button. The main banner features a dark blue background with the text 'DOWNLOAD NOW' and two buttons: 'Download on the App Store' and 'GET IT ON Google Play'. Below the banner, there are three player cards for Shweta Osinubi, Nani, and Bruno Fernandes. To the right of the cards is the 'EA SPORTS FIFA 23 ULTIMATE TEAM' logo and a paragraph of text: 'Sign the next star for your FUT Club with access to the Transfer Market, style your FUT Stadium as you curate every aspect of your new home in FUT 23, select a side when you sign up for the latest FUT Event, and more right from your fingertips.'

FIFA Ultimate Team Could Soon Be Classified As 'Gambling' In The UK



Adnan Riaz



Published 10:47, 02 July 2020 BST

| Last updated 10:52, 28 August 2020 BST



FIFA Ultimate Team cards aren't gambling, Dutch court says

€10 million fine rescinded, too

By Owen S. Good | Mar 11, 2022, 11:24am EST



Pa
A weekly

[Source](#)

Strategy, pay-to-win, or gambling?



“Battle nations from throughout history in DomiNations! Build your empire and command nations as you make them grow from a small village to a thriving metropolis, and battle as one of the great civilizations from the history of the world.

Build a nation, starting as an early settlement and grow through the ages, from the dawn of history to the modern era. Study under history’s greats at the University like Leonardo Da Vinci and Catherine the Great. Build Wonders of the World and create technology with historically accurate advancements.”

Online gaming business models

- Remarkable similarity to gambling
- Combining the promise of skilled choice with the addictive appeal of unpredictable rewards
- Public & legal controversies



Take away

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 3. Tinder business model: selling data
 4. FaceApp business model: selling data
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