

Data Privacy

Collection, Monetization and Ramifications



Aaron Dawson, Shengjia He, Tom Lancaster, & Danniell Sotelo

What is “data”?

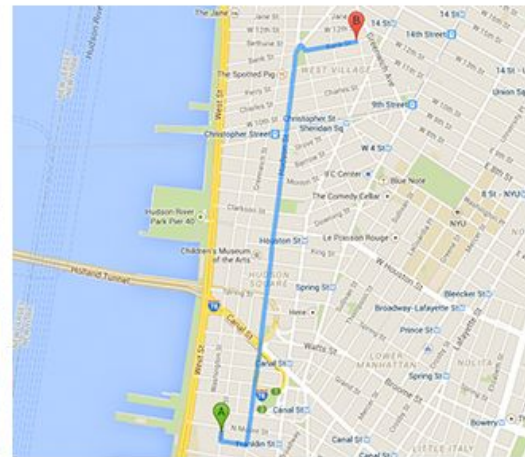
- Data is all personal information that is used to identify a customer or person
- Common Types of Personal Data is:
 - Email address
 - Phone number
 - Credit card information
 - Birthdate
 - Social security number



Helpful Business Insights vs. Invasion of Privacy



BRADLEY COOPER



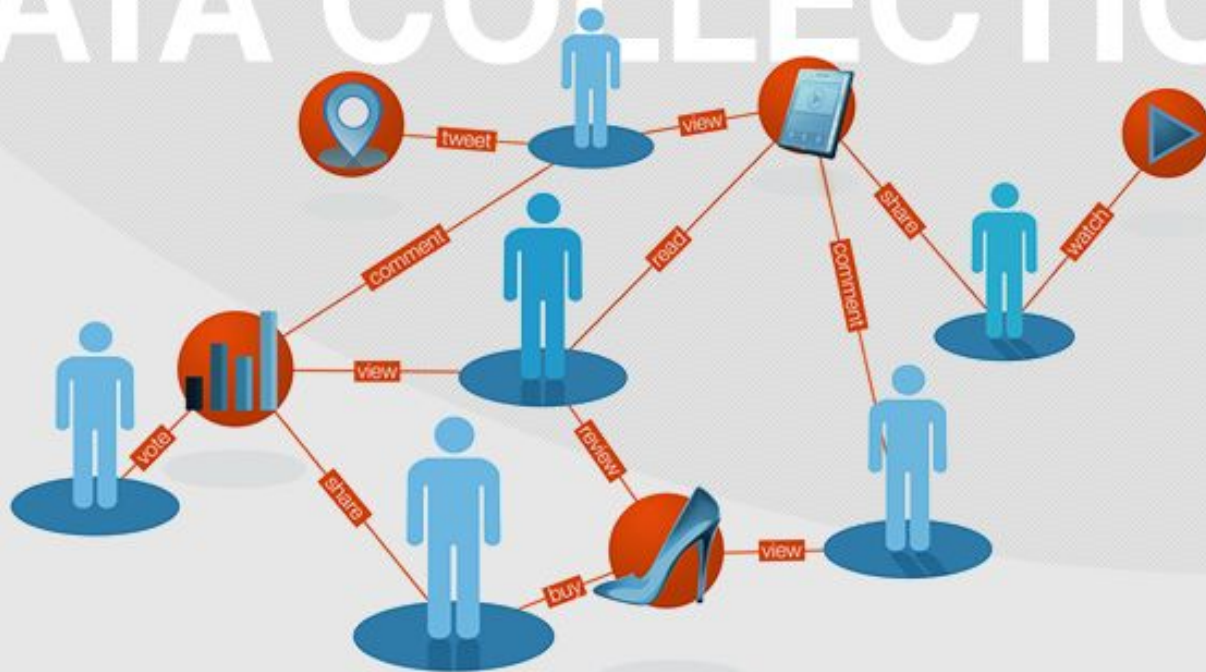
JULY 8, 2013 • 7:34 PM - 7:44 PM
376 GREENWICH ST. TO 13 BANK ST.
\$9.00 FARE • CASH; UNKNOWN TIP • ©SPLASH

Thought Experiment

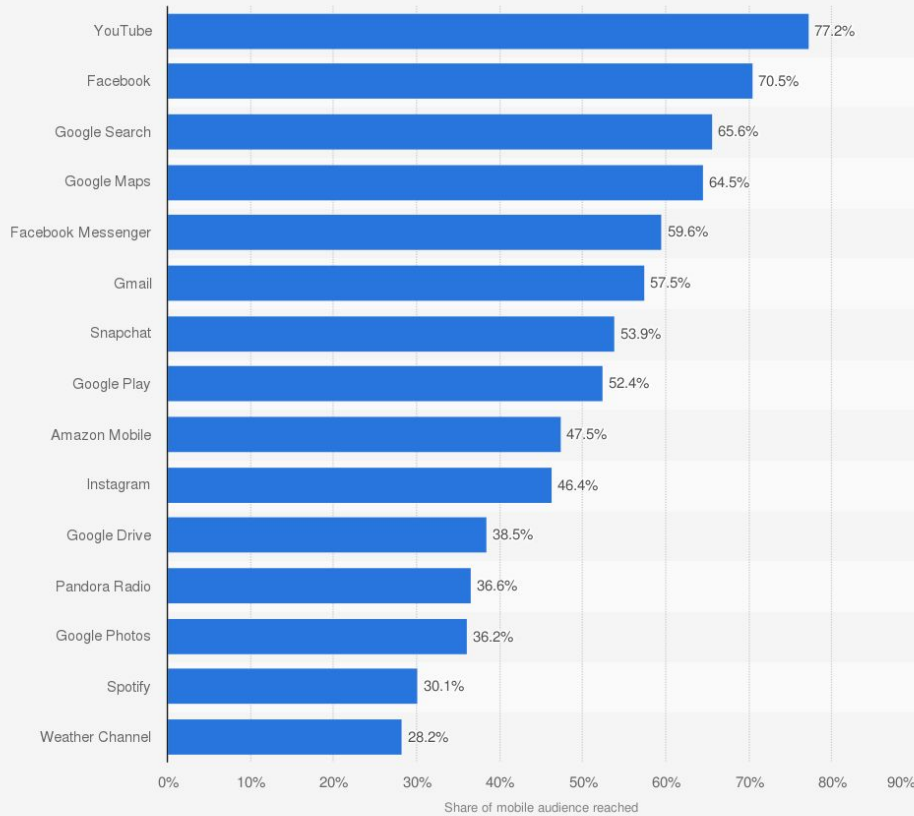
- Think of your last 5-10 Google searches
- What does this reveal about you?
- Would you want other people knowing this information?



DATA COLLECTION



Mobile audience reach of leading smartphone apps in the United States as of May 2019



Source
comScore
© Statista 2019

Additional Information:
United States; comScore; May 2019; 18 years and older; iOS and Android platforms; smartphone only

1. YouTube
2. Facebook
3. Google Search
4. Google Maps
5. Facebook Messengers
6. Gmail
7. Snapchat
8. Google Play
9. Amazon Mobile
10. Instagram
11. Google Drive
12. Pandora Radio
13. Google Photos
14. Spotify
15. Weather Channel

What is collected?

Browser

IP Address

Browser Name

Computer System Info

<http://webkay.robinlinus.com/>

Clicks

<https://clickclickclick.click/>

Unique Fingerprint?

<https://panopticlick.eff.org/>



What is a cookie?

Each cookie is effectively a small lookup table containing pairs of (key, data) values - for example (firstname, John) (lastname, Smith). Once the cookie has been read by the code on the server or client computer, the data can be retrieved and used to customise the web page appropriately.



What is collected?

Facebook

Collects EVERYTHING!



<https://www.facebook.com/about/privacy/update>

What data is collected?

The Fred Meyer:

- Name, address, phone and email



What data is collected?

The Fred Meyer:

- Name, address, phone and email
- Communication and shopping preferences



What data is collected?

The Fred Meyer:

- Name, address, phone and email
- Communication and shopping preferences
- Driver's license number for certain types of sales and for ID verification



What data is collected?

The Fred Meyer: Cookies and other technology

- Unique device or user ID

Software

Operating System

Mac OS 10.12.3

Browser

Chrome 75.0.3770.142

Browser Plugins

Chrome PDF Plugin

Chrome PDF Viewer

Native Client

Prevention:

To prevent your browser from leaking information about your software use [NoScript](#).

What data is collected?

The Fred Meyer: Cookies and other technology

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- System and browser type

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What data is collected?

The Fred Meyer: Cookies and other technology

- Unique device or user ID
- System and browser type
- Dates, times and locations when actions take place

Page 1 of 1		Show 10 of 4 per page.							
<input type="checkbox"/>	Date	Time	Home	Visitor	Location	Age	Gender	Game ID	
<input type="checkbox"/>	04/16/2016	3:00 PM	RRunners U10 Select I	NISC - U10 RED	McCollum Park	U-10	Male	2570842	
<input type="checkbox"/>	05/28/2016	3:00 PM	RRunners U10 Select I	Stavaru SA U10 Atletico1	McCollum Park	U-10	Male	2570828	
<input type="checkbox"/>	06/11/2016	3:00 PM	RRunners U10 Select I	Galaxy 05-06 Blue	McCollum Park	U-10	Male	2570835	
<input type="checkbox"/>	06/18/2016	3:00 PM	RRunners U10 Select I	LG Celtics U10 Creones	McCollum Park	U-10	Male	2570849	
Page 1 of 1		Show 10 of 4 per page.							

How is it collected?

- The WIFI



How is it collected?

- The WIFI
- Rewards card



How is it collected?

- The WIFI
- Rewards card
- Security camera



Monetization

monetize

mon·e·tize | \ 'mä-nə-ˌtīz

...

3 : to utilize (something of value) as a source of profit



<https://www.merriam-webster.com/dictionary/monetization>

Monetization in stores

- Reducing Cost
 - Improving internal processes
 - Minimizing churn
- Increasing Revenue
 - Providing new products or services
 - Maximizing customer satisfaction

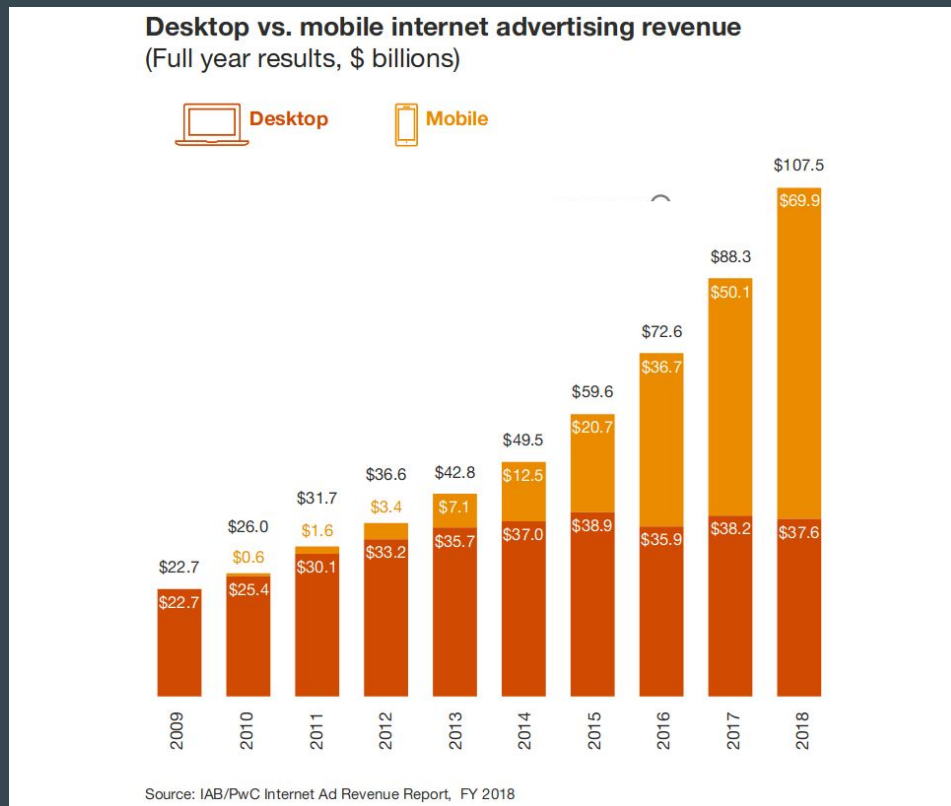


Monetization of app/online data

In 2018, Internet advertising revenues in the United States totaled \$107.5 billion for the full year.

“Advertising revenues delivered on mobile devices totaled \$69.9 billion in FY 2018”

mobile revenue makes up 65.1% of total



Monetization of app/online data

“Companies are capitalizing on their trove of consumer data, including purchasing and browsing history, enabling advertisers to programmatically reach audiences in more effective ways”

-IAB Internet Advertising Revenue Report 2018



Ramifications of Exposed Data - Benign



Ramifications of Exposed Data - Benign



Ramifications of Shared/Exposed Data - Malicious

Aspiring
Model
Paris
Dunn



NBA
Player
Chris
Andersen



Hacker
Shelly
Cartier

Ramifications of Shared/Exposed Data - Malicious



China Social
Credit Score

Ramifications of Shared/Exposed Data - Malicious



Antifa in front of
Tucker Carlson's
Home

Company wants to find out if there is a link between having a favorite color and income.

Name	Email	Favorite color	weight	income(monthly)
Aaron Dawson	dawson22@gmail.com	Blue	220 lb	\$ 4,000.00 (pfft, I wish)
Becky Morrison	MB2178@gmail.com	Blue	170 lb	\$ 4,400.00
Cole Dickins	Colescoal@yahoo.com	Green	160 lb	\$ 2,000.00
Dave Smith	SmithWithaSilentB@gmail.com	blue	175 lb	\$ 0.00
Emily Sun	DontStareAtTheSun@gmail.com	red	140 lb	\$ 500.00
Fly Eck	ToEckWithIt@yahoo.com	red	240 lb	\$ 700.00

What could you find out about me from such a table?

If given access to this table, what private data would you have?

Are there any trends in the data?

Company wants to find out if there is a link between having a favorite color and income.

Name	Email	Favorite color	weight	income(monthly)
a877dfc76eb	0188fffaef@gmail.com	Blue	220 lb	\$ 4,000.00
eb89a1121a	027bae22@gmail.com	Blue	170 lb	\$ 4,400.00
abbb98061a	ff787f320@yahoo.com	Green	160 lb	\$ 2,000.00
abba652219	a1526f62f@gmail.com	blue	175 lb	\$ 0.00
fa4ff671223	ff982651b@gmail.com	red	140 lb	\$ 500.00
abb78753f5	fffe51673@yahoo.com	red	240 lb	\$ 700.00

What could you find out about me from such a table?

If given access to this table, what private data would you have?

Are there any trends in the data?

Collections of data from different sources.

Fave. Color	Income
purple	2,000
red	600
blue	3,200
purple	2,700

Weight	Income
220	2,700
175	300
220	600

Name	Weight
Aaron	220
Aaron	390
Cindy	250
Debrah	170

Name	Fave. Color
Aaron	purple
Ben	red
Jane	blue
Kelly	green

Example shows how bringing lots of different data together allows for all encompassing knowledge on an individual.

YOU Must Take Responsibility!

“There are really no consequences” for companies that don’t protect the data other than bad press that gets forgotten about.”

- Serge Egelman, a computer security and privacy researcher affiliated with the University of California, Berkeley



How to Protect Your Data?

- Passwords
 - Put on all devices
 - Make sure they are strong
(Follow website guidelines)
 - Change regularly
- Avoid Free Wi-Fi
- Close inactive online accounts
- Check your privacy and sharing settings on all social media accounts



Questions?

Sources/Further Research

- <https://www.fastcompany.com/3036573/nyc-taxi-data-blunder-reveals-which-celebs-dont-tip-and-who-frequents-strip-clubs>
- <https://mrslja.com/data-collection-capabilities/>
- <https://gizmodo.com/heres-all-the-data-collected-from-you-as-you-browse-the-1820779304>
- <https://www.merriam-webster.com/dictionary/monetization>
- <https://www.iab.com/wp-content/uploads/2019/05/Full-Year-2018-IAB-Internet-Advertising-Revenue-Report.pdf>
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