POWER USERS & GOALS

Melissa [redacted] — June 2019

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Tennessee v. Meta
Case No. 23-1364-IV
PX-01318

AGENDA

- Why talk about power users?
- How top heavy are our company goals?
- Who are our power users?
- What are best practices for tracking power users?
- Closing thoughts:
  - Is a breadth or depth strategy most appropriate for your team?
  - What are the best practices to measure and monitor power users? (ad hoc analysis, dashboards, experimentation)
  - How can we increase xfn fluency in power user behavior?

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TL;DR

Many of our topline metrics are mainly driven by just the top 5% of DAP

- All non-participation rate goals are sensitive to power users
  - The top 5% of DAP are responsible for 70% of several metrics, and the top 1% of DAP are responsible for 30% (Direct Sends per DAP, IGTV Teen Watch Time, and Media Produced)
  - Home Media Impressions is actually much less unbalanced than many other major metrics: top 5% contribute 28% of total
- Power user behavior masks what is happening for most users for several of our goals (Home Impressions, Direct Sends, IGTV hours, and Revenue Efficiency)
- Participation, retention, and capped metrics are a good way to avoid setting goals that are driven by power user behaviors; weekly (instead of daily) metrics are an alternative solution for some metrics
- New products are going to be power user driven until they get widespread adoption and so should consider retention metrics

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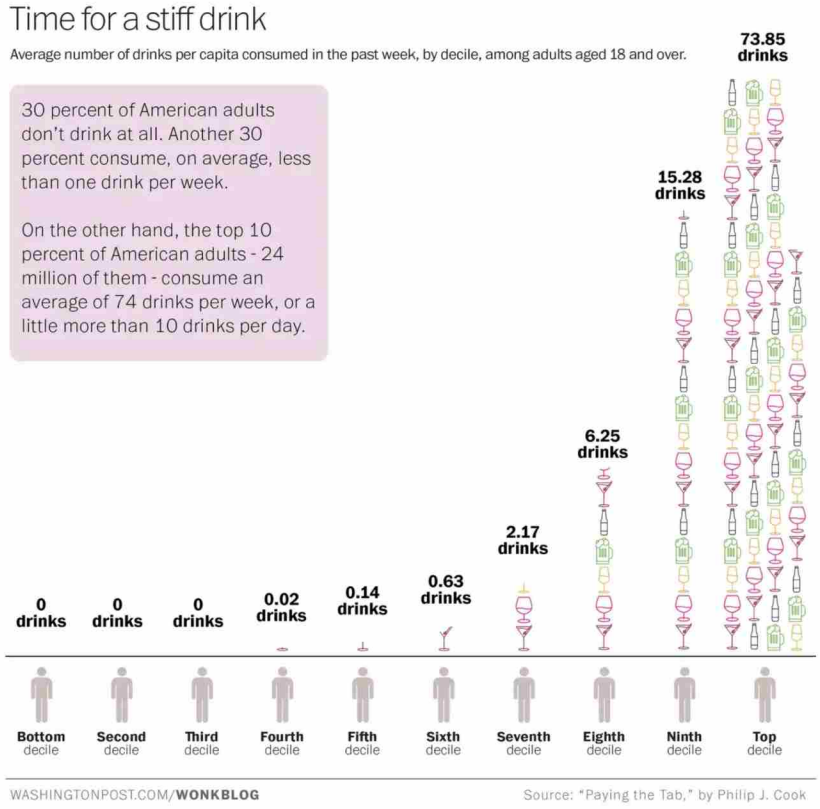


WHY TALK ABOUT POWER USERS?

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AVERAGES ARE DECEPTIVE

While Americans have 10 drinks a week on average, most rarely drink at all



Source: Referenced in Mike Develin's Power User Analysis quip, https://fb.quip.com/25CBAtfDiaYj

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WHY DO WE CARE IF METRICS ARE TOP HEAVY?

How might power user driven metrics change our decision making?

- Masks what is happening for the majority (ex. home impressions goal, inauthentic outliers)
  - Is the product broken for non-power users?
- Incrementality (revenue, feedback, retention): increasing metrics for less engaged users is often more valuable than driving additional behavior amongst whales
- Ecosystem benefits (generate feedback and views and revenue, early adopters)
- Long term sustainability, network strength, and overuse
- Strategic vision for ig: depth vs breadth
  - What type of product do we want to build?
  - What type of behavior do we want to incentivize?

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HOW TOP HEAVY ARE OUR COMPANY GOALS?

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DEFINITION

Power users, or whales, are the users with the most activity

They drive a disproportionate share of the total metric



In this presentation, I use the top 5% of users, for the relevant metric and segment, to classify a user as a power user.

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GOALS

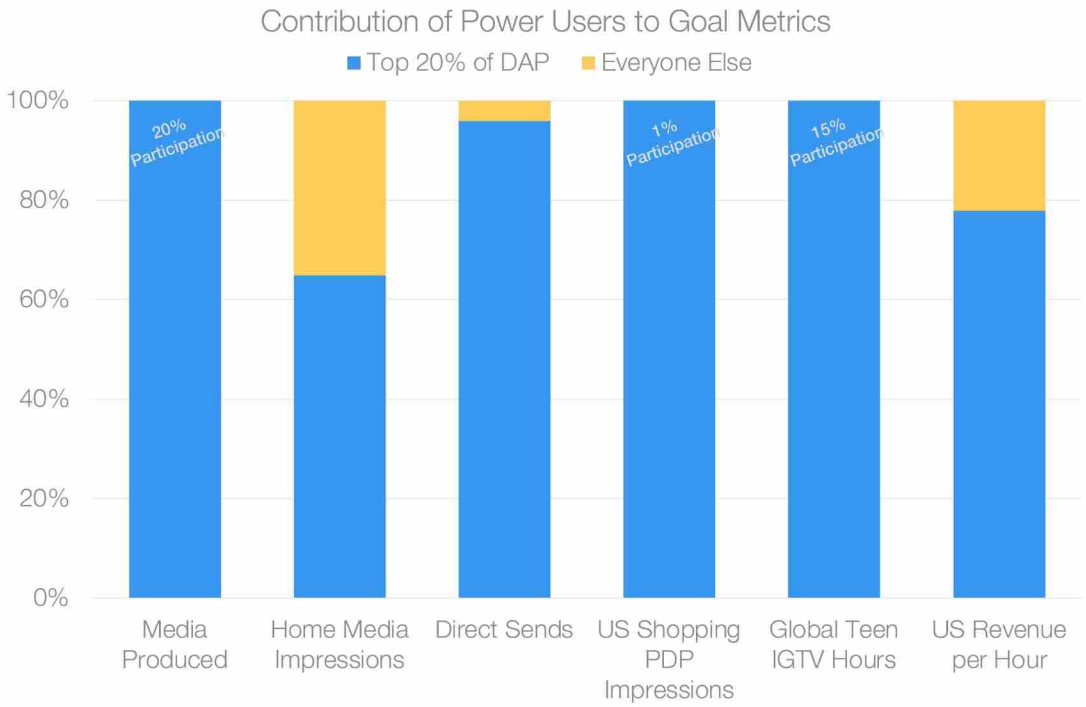
Aggregation of a goal metric will determine if it's heavily influenced by power usage

Goal	Team	Metric	Aggregation	Whaley?
Bring you closer to the people you love through **daily shared experiences and regular interactions** **Grow** the Instagram community in the most important countries for the Facebook Family and make Instagram the **safest and kindest** online platform	Broadcast Sharing	Producers	Participation	
	Home	Home Media Impressions	Average	
	Direct	Sends	Average	
Bring you close to your **Interests** through dedicated **shopping** and creator-drive **long form video** experiences	Shopping	Weekly PDP	Participation	
	IGTV	Watch Time > 1 min	Total	
Close the **monetization** gap between Instagram and Facebook	Ads	Relative Monetization Efficiency	Ratio of averages	

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THE 80/20 RULE

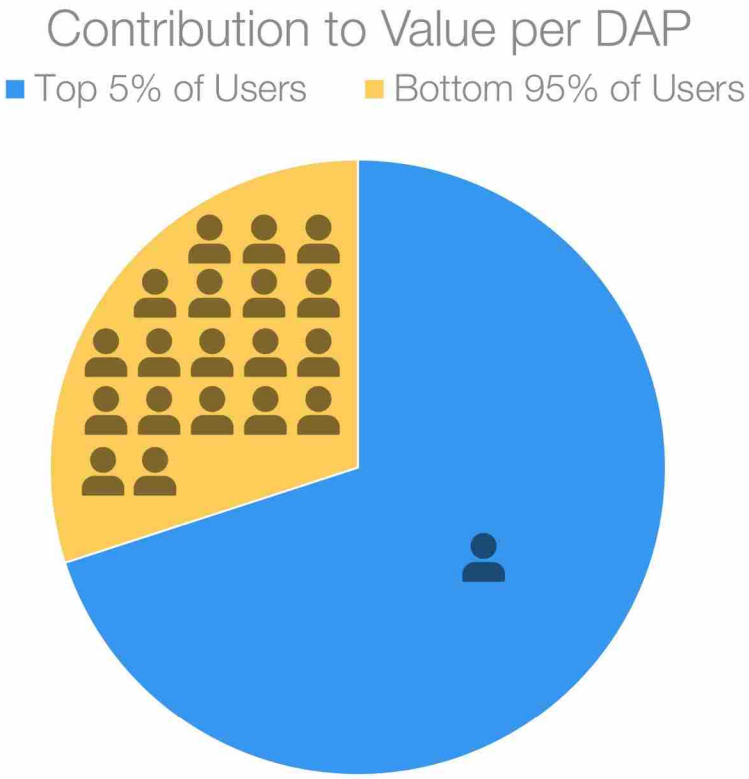
Most of the metrics behind company goals are even more top heavy than 80/20



Do 20% of the users do 80% of the work?

- Many goal metrics have less than 20% participation among DAP, so 100% of the work is done by less than 20% of users
- Only one goal is below the 80/20 rule: Home Media Impressions

Data: FCI DAP. Week of 5/12/10-5/18/19. Media includes feed and Stories. All metrics displayed are per day, including Shopping.



70% of the total is done by **5%** of the users

for metrics like media produced, direct sends, and IGTV watch hours

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70/5 IS THE NEW 80/20

Metric	Top 5% Power User Contribution	Top 1% Power User Contribution	Participation	Goal Aggregation
Media Produced	70%	31%	20%	participation
Home Media Impressions	28%	9%	93%	avg
Direct Sends	71%	33%	35%	avg
US Shopping PDP Impressions	100%	100%	1%	participation (weekly)
Global Teen IGTV Hours	70%	31%	15%	total
US revenue per hour	55%	37%	84%	ratio of avg

- 70% of all media produced comes from just 5% of DAP
  - This is also true for all messages sent and teen watch hours of IGTV
- 33% of all Direct Sends come from just 1% of DAP
  - Even though participation in sending a message is much higher than participation in producing media or having an IGTV session, sends is just as whaley those two metrics
- Media impressions on home are much less whaley than other top metrics
- 16% of US DAP contribute no revenue
  - This is due to holdouts, new users, needy users, restricted countries, having age attributes, and unknown reasons, according to Nicole Lai's note, "20% of IG daily actives don't see ads... here's why"

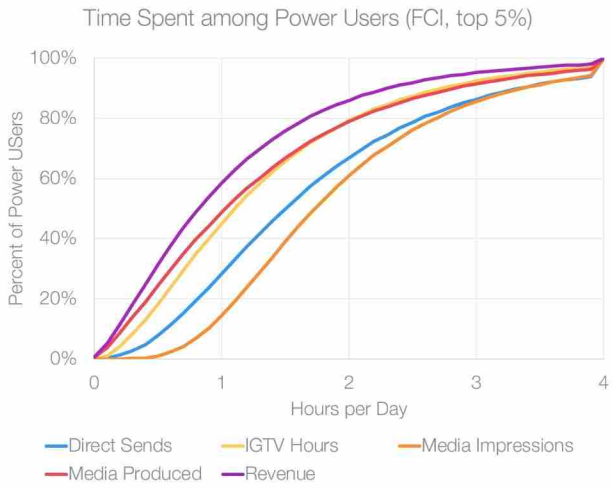
Data: FCI DAP (except IGTV). Week of 5/12/10-5/18/19. Media includes feed and Stories. All metrics displayed are per day, including Shopping. Revenue in USD cents.

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POWER USERS & OVERUSE

Most power user metric values are quite reasonable; impressions is the only metric driving extreme behavior

Metric	95th percentile	Average Value Among Power Users	Overuse?	Total Hours per Day on IG
Media Produced	4	8	No	1
Home Media Impressions	700	1100	Maybe	2
Direct Sends	28	88	No	1.8
Teen IGTV Hours	0.06 (4 min)	0.14 (8 min)	No	1.4
Revenue (cents)	45	95	No	1.1



- Home Media Impressions power users spend two hours a day on ig—an hour of which is spent on the home surface.
- Direct and IGTV engagement is quite light even among their power users. Power users for these products are highly engaged with the entire ig product— an average user is on ig for 35 minutes a day.
- While the average DAP spends 35 minutes a day on IG, power users tend to spend more time

Data: https://fburl.com/daiquery/0qrxzjch, https://fburl.com/daiquery/g52ut2o5, https://fburl.com/daiquery/yz3iope8

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INCREMENTALITY

An impression doesn't always equal an impression

Retention

Incremental feed and stories impressions have an isolated impact on predicted future DAP, until the user sees 50 impressions of each type

Revenue

An incremental feed impression from a p20 user is worth 3x more in ad revenue than an incremental feed impression from a p90 user

User value

Incremental feed impressions from a normal user are 50% more likely to lead to a like than an incremental impression from a power user

When metric growth comes from power users, it's often not as impactful as growth from lesser engaged users

Data: appendix.

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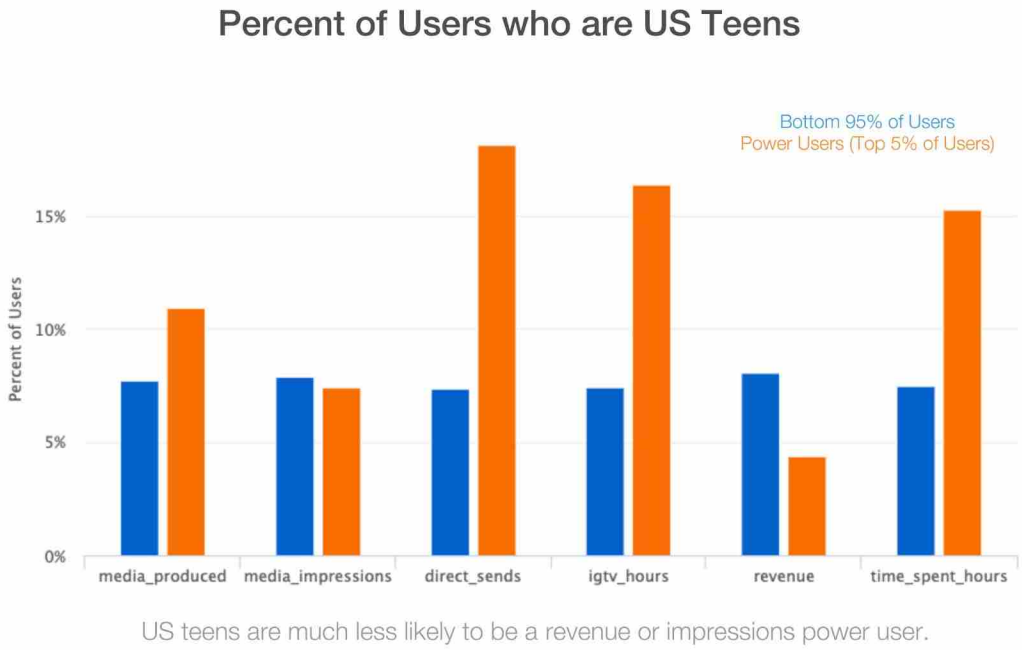


WHO ARE OUR POWER USERS?

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US TEENS

US teens are power users for production, sends, IGTV, and overall time spent

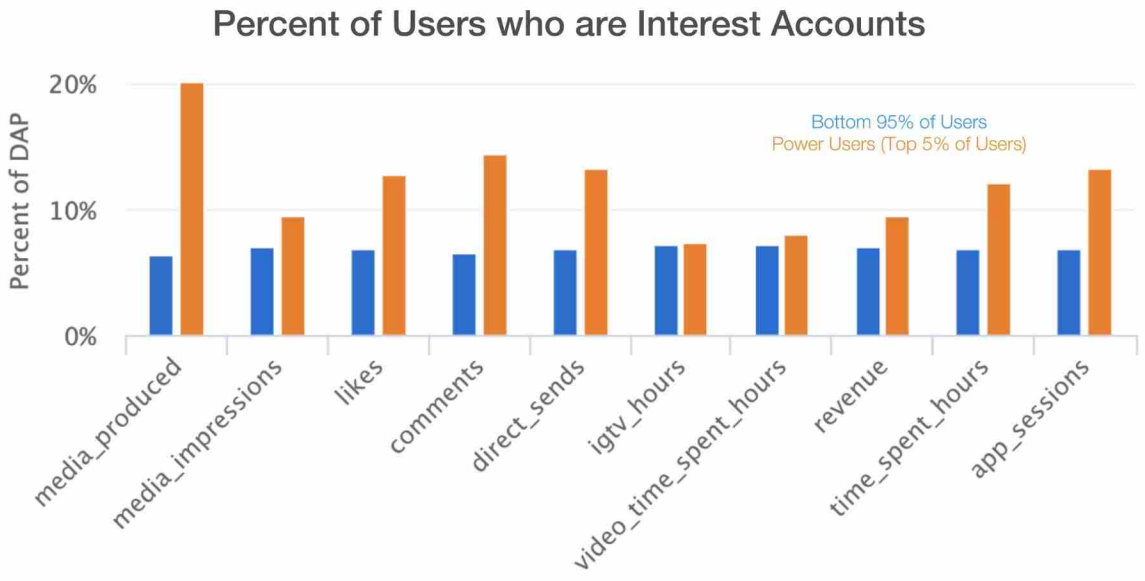


Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.
Query: https://fburl.com/daiquery/3i15pn84.

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INTEREST ACCOUNTS

Interest accounts are 2-3x more likely to be power users for production metrics



Interest accounts as defined by the account tiering system: accounts with >p99 followers (~4k) OR is_business (model of commerciality)

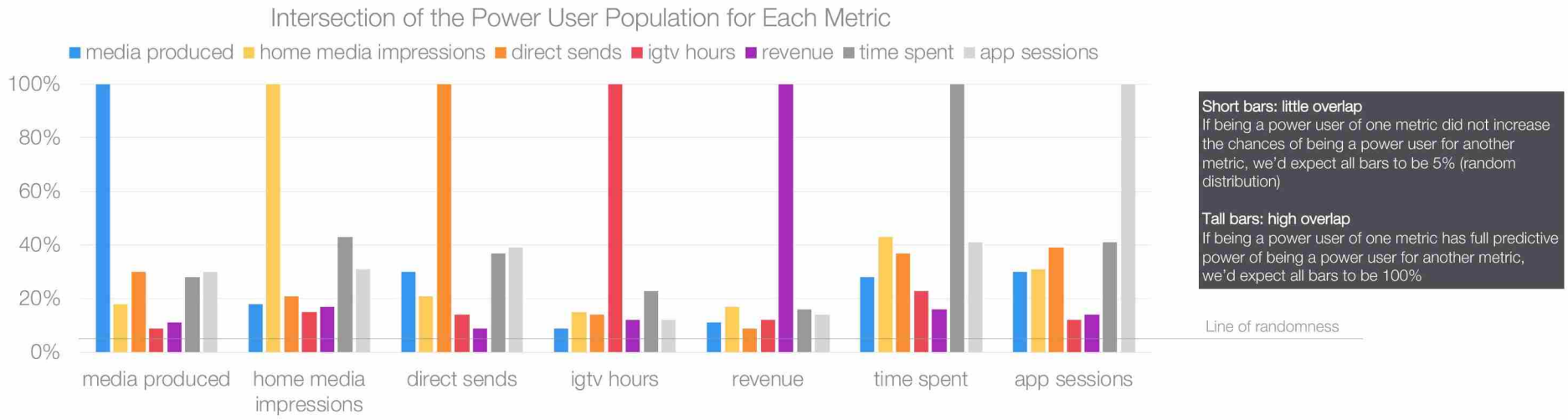
- Power users for production metrics are more likely to be interest accounts, as expected
  - 20% of media production power users are interest accounts
  - Messages sent, comments, and likes are also more likely to be interest accounts
- Interest accounts are no less likely to be consumption power users, somewhat surprisingly
  - IGTV, video time spent, and impressions have interest accounts as power users

Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.
Query https://fburl.com/daiquery/yhjno8n8.

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POWER USER OVERLAP

Being a power user of one metric increases odds of being a power user of another metric less than expected



- All metrics displayed have some positive correlation between their power users: 2x-8x more overlapping users than a random distribution
- However, none of the goal metrics have more than 30% power user overlap, suggesting that in general, each type of power user is coming to ig for a different job each day
- Being a time spent power user is a good predictor for being a power user of any feature
- 37% of Direct power users are also time spent power users
- Surprisingly little overlap between revenue power users and power users by impressions or time: only 17% of home media impressions power users are also revenue power users! Given that home media impressions are what we monetize, this is quite surprising.
- People who produce a lot are more likely to be top Direct users (meaning they send over 28 messages a day), likely due to media reactions and replies

Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.

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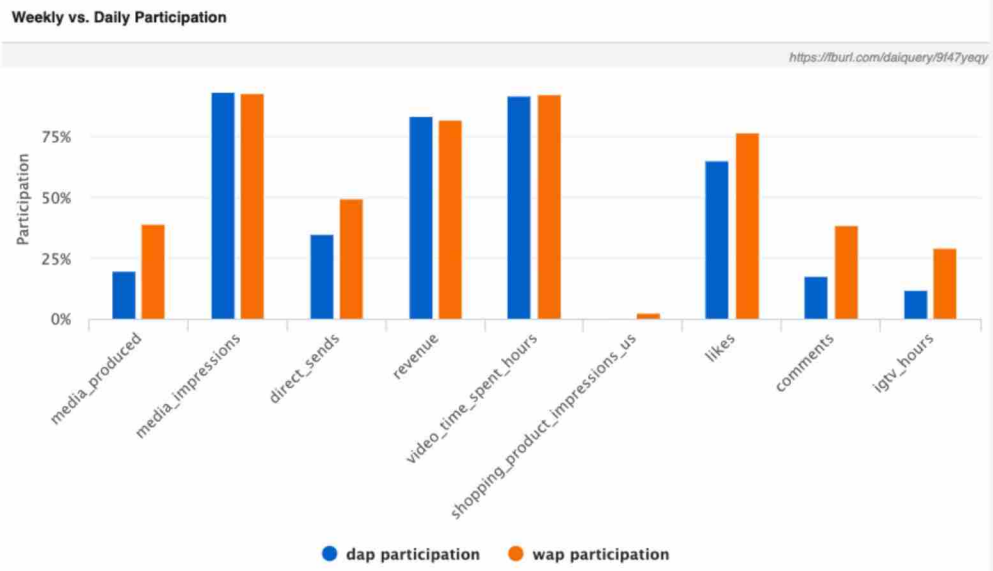


WHAT ARE BEST PRACTICES FOR TRACKING POWER USERS?

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ALTERNATIVE GOAL: PARTICIPATION

Some products are daily behaviors while others are weekly ones



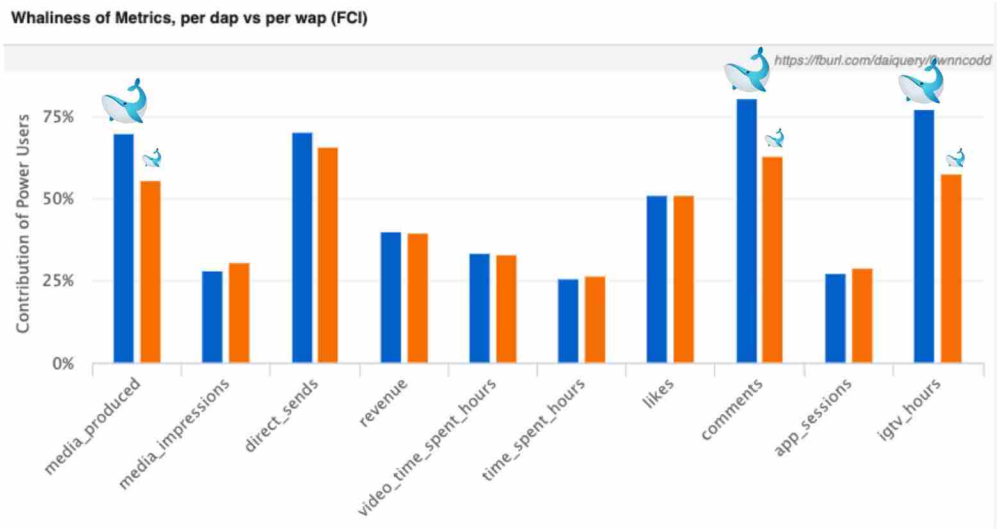
- Here, we look at participation for various metrics: did the user ever do the action?
- WAP are less engaged than DAP on average since they are less likely to be l7=7 than DAP are
- However, there are many activities on ig that users are more likely to do on a weekly basis than daily:
  - IGTV Watch Session
  - Produce media
  - Comment
  - View a shopping product page
  - Like
  - Send a message

Data: FCI. Week of 5/12/10-5/18/19. Media includes feed and Stories. Query: https://fburl.com/daiquery/n1zq0hv3.

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ALTERNATIVE GOAL: WEEKLY METRICS

Some metrics are less whaley in a weekly aggregation



Weekly average is less whaley than the daily average for IGTV. 78% of IGTV watch hours per day come from the most active 5% of DAP, but only 58% of watch time per week come from the most active 5% of WAP.

- Some metrics are whalier on a weekly aggregation than daily
  - Ex. Home impressions, time spent, and sessions
  - Including users who are wap, but not dap, adds less engaged users to the denominator
- Some metrics are much less whaley in a weekly aggregation
  - Ex. IGTV watch hours, production, and comments
  - WAP participation is much higher than DAP participation for these metrics
  - Direct sends is less whaley in a weekly aggregation, but the difference is smaller: 71% of the daily averages comes from power users versus 66% of the weekly average
- It's unclear why IGTV behavior is weekly, while video time spent is daily: could this be due to scheduled watching behavior or because IGTV time excludes sessions under 1 minute?

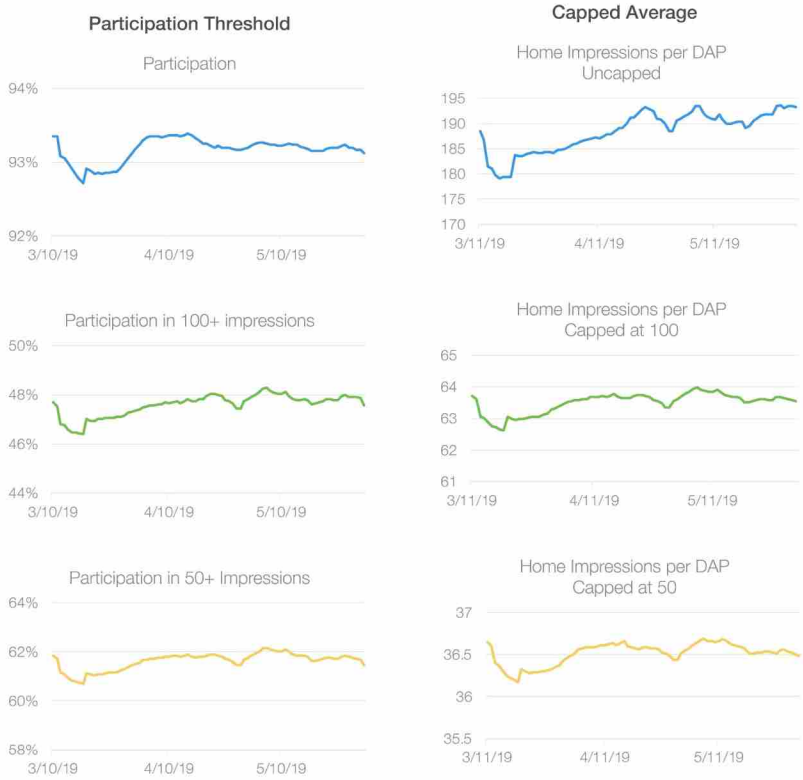
Data: FCI. Week of 5/12/10-5/18/19. Media includes feed and Stories. Query: https://fburl.com/daiquery/n1zq0hv3.

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ALTERNATIVE GOAL: THRESHOLDS

Participation thresholds or capped averages at threshold

- Thresholds can best set for each product to determine the ideal level of use
- Thresholds can be set to focus on lesser engaged users, avoid incentivizing overuse, maximize incremental value, or winsorize extreme outliers and spam
- Participation thresholds
  - Participation metrics can also be used to capture depth of engagement
  - We can set a threshold that we'd like all users to surpass
  - For example, percent of DAP that have at least 100 impressions, generate 25 cents of revenue or send at least 10 messages
  - Binary value
- Capped average
  - More sensitive than participation goals, but less whaley than averages
  - Bidirectional effects detectable: increases when users move closer to threshold and decreases when users move further from it

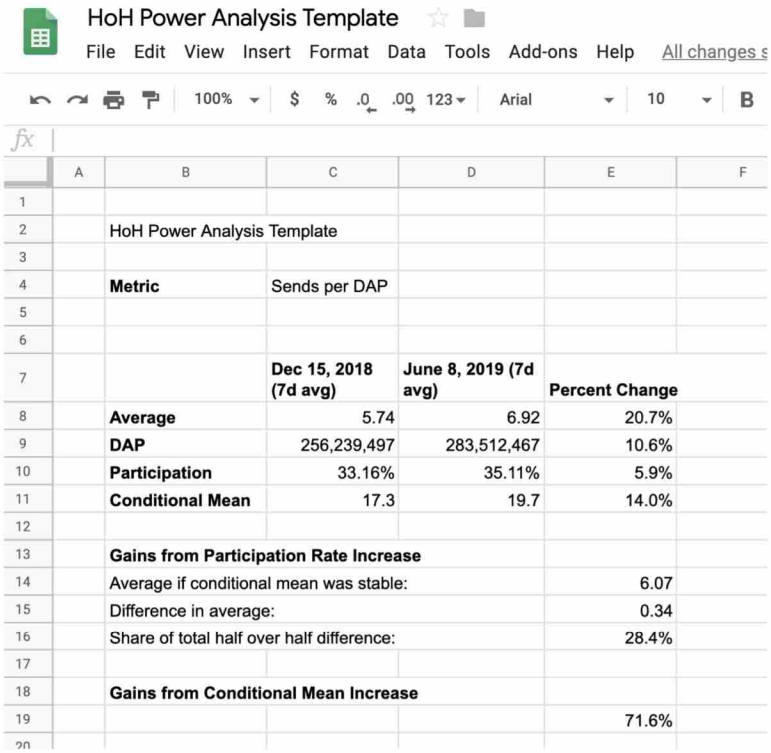


Data: FCI. 7-day rolling average. Media includes feed and Stories. Query: https://fburl.com/daiquery/ss86ubfg.

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HALF OVER HALF POWER USER ACCOUNTING

Template provides a starting point



HoH Power Analysis Template

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1						
2		HoH Power Analysis Template				
3						
4		**Metric**	Sends per DAP			
5						
6						
7			**Dec 15, 2018 (7d avg)**	**June 8, 2019 (7d avg)**	**Percent Change**	
8		**Average**	5.74	6.92	20.7%	
9		**DAP**	256,239,497	283,512,467	10.6%	
10		**Participation**	33.16%	35.11%	5.9%	
11		**Conditional Mean**	17.3	19.7	14.0%	
12						
13		**Gains from Participation Rate Increase**				
14		Average if conditional mean was stable:			6.07	
15		Difference in average:			0.34	
16		Share of total half over half difference:			28.4%	
17						
18		**Gains from Conditional Mean Increase**				
19					71.6%	
20						

- Understand how participation and power usage changes contributed to progress towards goal
- Review how distributions shifted over time
- Includes queries flexible for any table with ds, userid, and metric per user columns

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DISCUSSION

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RECOMMENDATIONS

- Each team should evaluate if they want to incentivize extreme or widespread usage
  - Teams focused on widespread usage should consider participation or retention goals
  - Teams should evaluate the incremental value of their metric for different types of users
  - Teams should conduct power user accounting analysis of metric growth after each half
- Consider tradeoffs of goaling on participation, retention, capped, or weekly aggregations instead of current metrics
- Add participation and other power user-resistant metrics to pillar dashboards
  - In particular, the Home, Direct, and IGTV teams should pay close attention to how their topline average user is different than typical users
  - Regularly communicate about distributions to xfn

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CLOSING THOUGHTS

- Is a breadth or depth strategy most appropriate for your team?
  - What are the long term benefits to your product ecosystem that power users offer?
  - Is increasing incremental depth among power users as valuable to your product as increasing depth among other users? Are threshold metrics appropriate for your team?
  - How might pivoting to a breadth or depth strategy change the decisions your team has made over the last half?
  - What would have to change or assumptions proven untrue to prioritize breadth vs depth and vice versa?
- What are the best practices to measure and monitor power users? (ad hoc analysis, dashboards, experimentation)
- How can we increase xfn fluency in power user behavior?

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APPENDIX

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CURRENT METRICS

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POWER USERS & ADDITIONAL METRICS

Metric	Top 5% Power User Contribution	Top 1% Power User Contribution	Participation	Avg	Median
media produced	70%	31%	20%	0.7	0
media produced stories	81%	36%	14%	0.46	0
media produced feed	97%	47%	9%	0.25	0
media impressions	28%	9%	93%	190.36	90.57
stories media impressions	39%	13%	68%	101.17	17.57
feed media impressions	27%	8%	93%	89.19	46.71
likes	51%	21%	65%	10.92	2.14
comments	81%	42%	17%	0.57	0
direct sends	71%	33%	35%	6.36	0
shopping PDP impressions	100%	100%	1%	0.02	0
igtv hours	78%	36%	12%	0.01	0
video time spent hours	33%	11%	92%	0.19	0.07
revenue per hour	60%	41%	83%	55.76	13.12
revenue	40%	17%	83%	11.75	4.08
time spent hours	26%	8%	100%	0.55	0.29
app sessions	27%	10%	98%	15.46	8.14

- Media impressions are not that whaley, about the same as time spent and sessions
  - We can't expect any in-app activity metrics to be less whaley than time spent and sessions
- New products will be very whaley until they find a broad audience of adopters (igtv, shopping)
- IGTV time spent is still much more whaley than overall video time spent. This is in part due to IGTV targeting a niche audience (teens).
- Unsurprisingly, feed production is whalier than stories production
- 40% of FCI revenue comes from 5% of users
- Interestingly, while 8% of engagement (likes, comments, follows) are estimated to be inauthentic coming from 1% of DAP, the top 1% of likes and comments power users contribute much more than 8%

Data: FCI DAP. Week of 5/12/10-5/18/19. Media includes feed and Stories. All metrics displayed are per day, including Shopping. Revenue in USD cents. App sessions participation is 98% because some users are web-only.
Inauthentic engagement dashboard: https://fburl.com/datainsights/mxp3vz0n.

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DISTRIBUTION OF GOAL METRICS

Metric	Goal Aggregation	10th percentile	25th percentile	Median	75th percentile	90th perentile	95th percentile	99th
Media Produced	participation	0	0	0	0	1.86	3.86	11.29
Home Media Impressions	avg	1.43	18.86	90.57	250.29	501.29	723	1375
Direct Sends	avg	0	0	0	2	12.43	28.43	127
US Shopping PDP Impressions	participation	0	0	0	0	0	0	0
Global Teens IGTV Hours	total	0	0	0	0	0.03	0.06	0.18
US Revenue per Hour	ratio of avg	0	7.76	24.38	56.02	122.52	209.71	728

Data: FCI DAP (except IGTV). Week of 5/12/10-5/18/19. Media includes feed and Stories. All metrics displayed are per day, including Shopping. Revenue in USD cents.

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MESSAGING ENGAGEMENT

Sends/sender on Direct is comparable to Messenger senders

region	app	engagement	participation	avg	p25	p50	p75	p90	p95	p99
fci	ig	dap	35%	6	0	0	2	12	29	127
fci	messenger	dap	69%	17	0	3	13	41	78	236
fci	ig	sender	100%	18	2	5	15	41	76	246
fci	messenger	sender	100%	24	2	7	22	59	104	276

Data: https://fburl.com/daiquery/g5xbdf5v and https://fburl.com/daiquery/g5xbdf5v.

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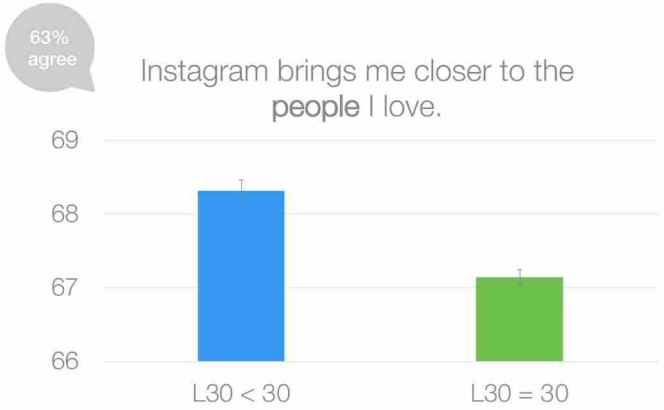
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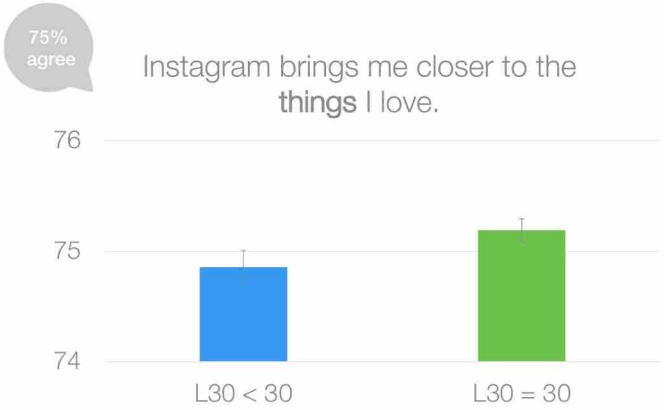


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MISSION SENTIMENT

We're bringing you closer to things than people





Average score is plotted above, from the following options: Strongly Disagree (0), Somewhat Disagree (25), Neither Agree nor Disagree (50), Somewhat Agree (75), or Strongly Agree (100)

- Users think we're doing a better job bringing them close to things than people
- Our most active users (l30=30) are the most likely segment to report that ig brings them close to things they love, but the least likely to report that ig brings them close to the people they love
- When asked which activities they find most meaningful most often, high time spent users rank being entertained first, above connecting with interests or keeping in touch with friends and family

Source: Instagram Sentiment Survey, responses for the month ending 5/30/19, https://fburl.com/daiquery/9bq6djok; User perception of time spent on Instagram, album by Ruogu Kang, May 2018

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GOALS

Research shows that what brings you closer to the people you love (reduces loneliness) is social interactions, and what makes you feel further is passive consumption

Goal	Team	Metric	Mission	Sentiment
Bring you closer to the people you love through **daily shared experiences and regular interactions** **Grow** the Instagram community in the most important countries for the Facebook Family and make Instagram the **safest and kindest** online platform	Broadcast Sharing	Producers	People	Interaction
	Home	Home Media Impressions	People & things	Consumption
	Direct	Sends	People	Interaction
Bring you close to your **Interests** through dedicated **shopping** and creator-drive **long form video** experiences	Shopping	Weekly PDP	Things	Consumption
	IGTV	Watch Time > 1 min	Things	Consumption
Close the **monetization** gap between Instagram and Facebook	Ads	Relative Monetization Efficiency	Things	Consumption

Average user has 190 impressions on home per day, leading to 3 friends and family interactions

Source: https://fburl.com/datainsights/qp97j30l. Examples of interactions are likes, comments, story replies, story poll votes, or a photo tag.

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OVERUSE

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POWER USERS & OVERUSE

"The research shows that ***when we use social media to connect with people we care about, it can be good for our well-being****. We can feel more connected and less lonely, and that correlates with long term measures of happiness and health. On the other hand, passively reading articles or watching videos -- even if they're entertaining or informative -- may not be as good." - Zuck*

- 75% of MAP surveyed associated "**addictive**" with Instagram
- People who spend more than an hour a day on IG are more likely to report, "**I felt bad most of the time [over the last week]**" *(correlation not causation)*
  - Half of users who spend over an hour a day on ig spend more time than they would have liked
- 43% of users who spend more than an hour a day report that they've taken **an intentional break from IG**
  - 42% of high time spent users surveyed say that they have taken a break from Instagram
    - The top reason for taking a break is "I had something at work or school that I needed to focus on"
    - This led the user to delete the app entirely, a quarter of the time
    - Teens and US users are the segments most likely to report that they've taken a break



Data: User perception of time spent on Instagram, album by Ruogu [redacted] May 2018; Understanding Brand Perceptions Across Facebook's Family of Apps, post by Nick [redacted] May 2019; time spent query: https://fburl.com/daiquery/eufcfw7l

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AUDIENCE: GEN POP; GEO: GLOBAL

IG MAP+ Users v. GP

Instagram Brand Perception

Ranked by Instagram Association globally

HOW TO READ THIS CHART

Word color indicates tone of trait

Positive trait Negative trait

Fill status indicates strength of trait in last 12 months

Has become much MORE of this trait

Has not become much more of this trait

Note: All Global Data is a straight average across the five markets; unless denoted otherwise, all data shown here was asked of a random sample of those familiar with the brand

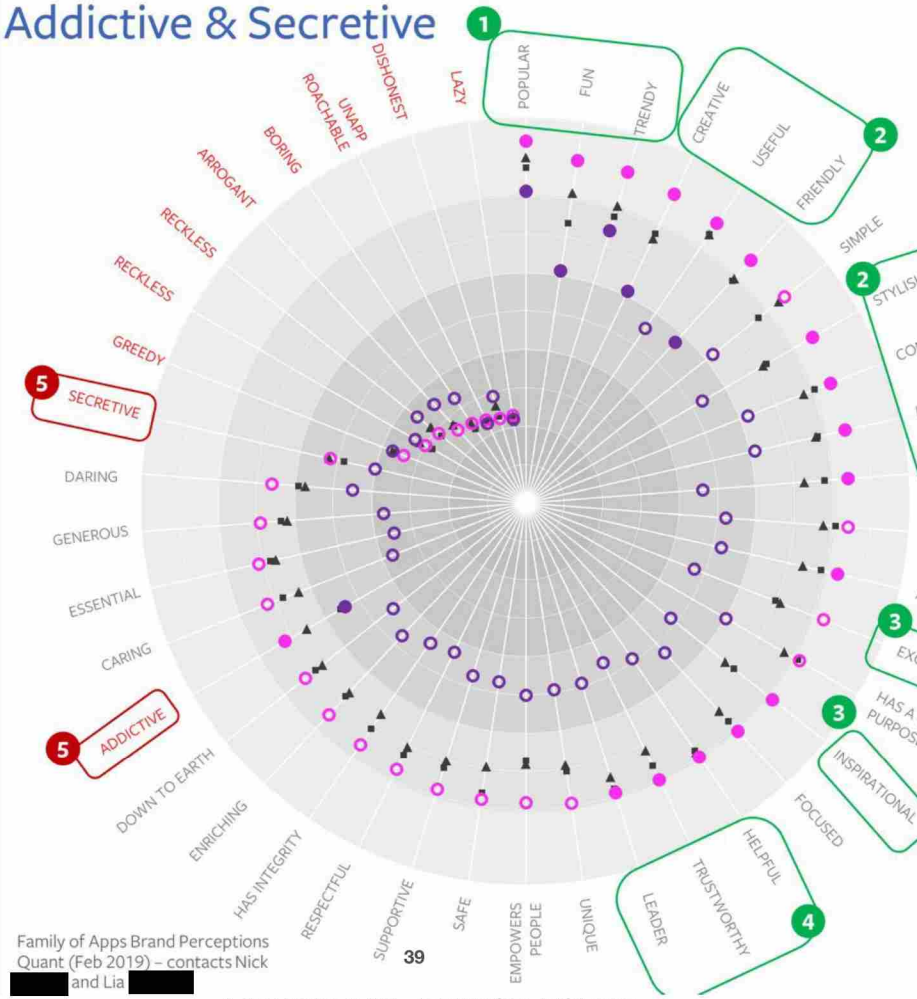
Average % applies across all core brands

Shading indication
(% saying trait applies)

81-100%
61-80%
41-60%
21-40%
0-20%

Note: Each ring indicates an increment of 10% from the center. Average marker reflects the average among each of the 16 core brands evaluated. **Also note** average trajectory % for all traits and all core brands globally is **16%**, a filled-in circle indicates the trajectory % for this brand and this trait is at least 1.5x higher.
g233mA. Do you associate this trait with **[CORE BRAND]**?
gB1mA. Which of the following traits apply to **[CORE BRAND] MORE** than it did 12 months ago? Please select all that apply.

Instagram MAP+ users rate the brand much more positively than non-MAP+ users (especially on Exciting, Inspirational) but worse on Addictive & Secretive



Family of Apps Brand Perceptions Quant (Feb 2019) – contacts Nick [redacted] and Lia [redacted]

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1. 90% of IG MAP+ Users rate the brand Popular, Trendy, and Fun – all higher than non-MAP+ users
2. MAP+ Users are much more likely to rate the brand as Creative, Useful, Friendly, Stylish, Confident, Innovative, and High-quality – and to say this has become more true of the brand in the last year
3. There is a particularly big split between MAP+ Users and non-MAP+ on Exciting and Inspirational
4. MAP+ Users IG users rate the brand higher than non-MAP+, but still close to the overall average, for Helpful, Leader, and Trustworthy
5. IG MAP+ Users are *more* likely to say the brand is Addictive and Secretive

- Core Brands Average
- FB Fam Average (FB, MSGR, IG, WA)
- IG MAP+ Users
- IG NON-MAP+ Users

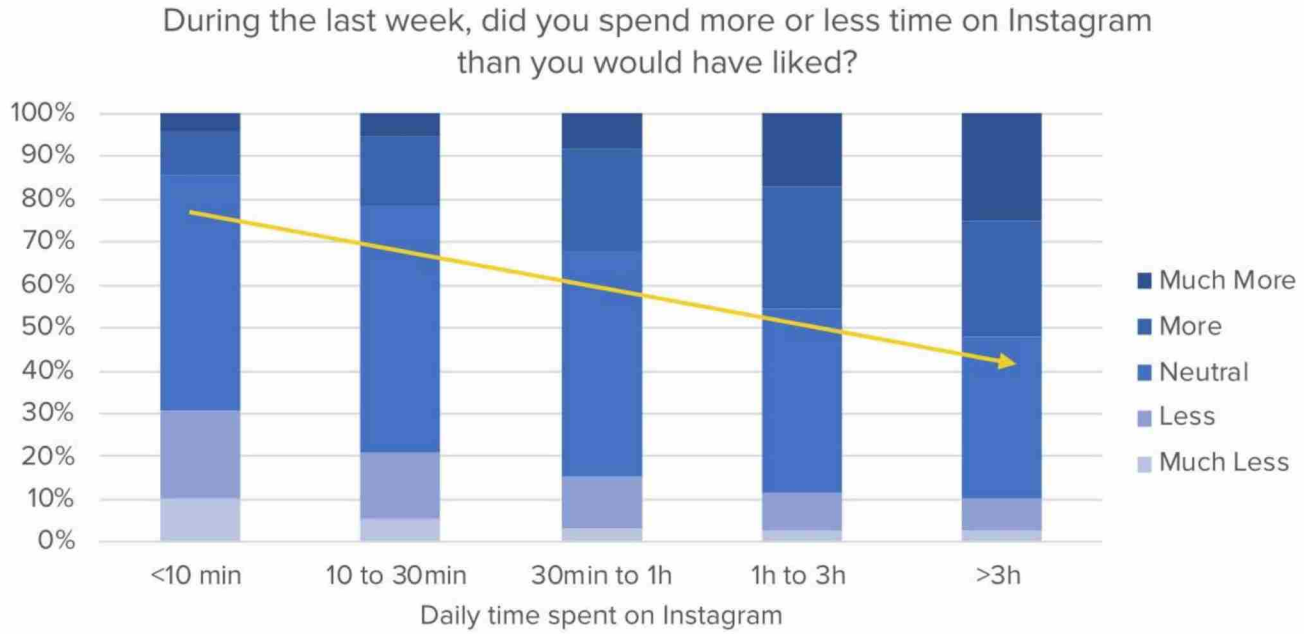
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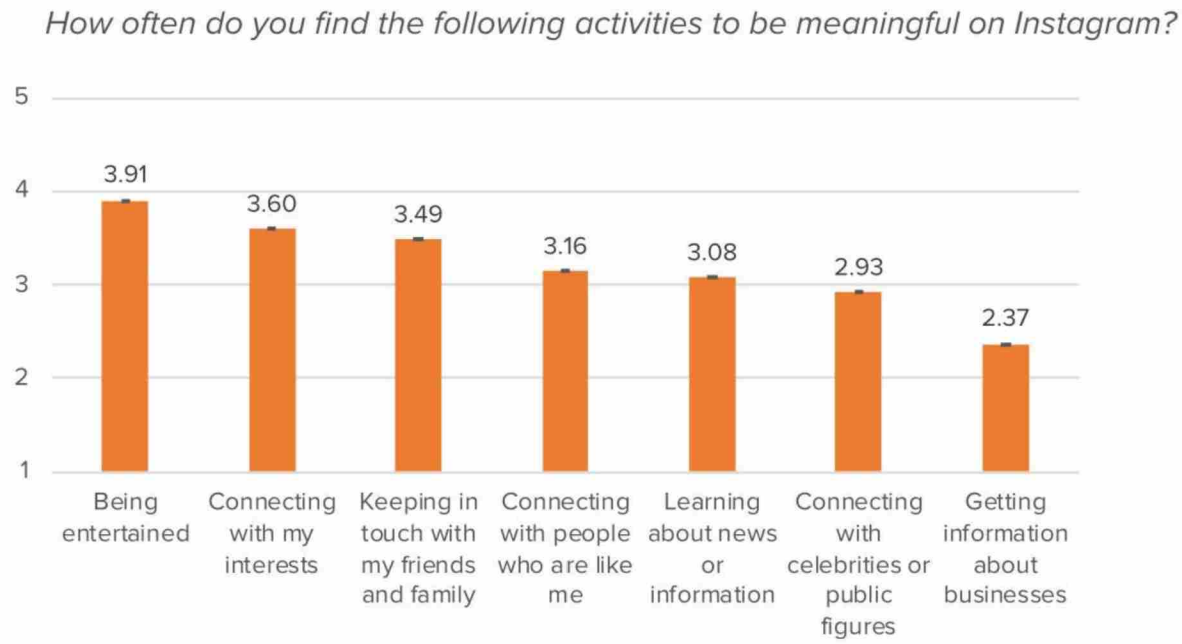
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More high TS users think they've spent more time than they would have liked on Instagram than low TS users.



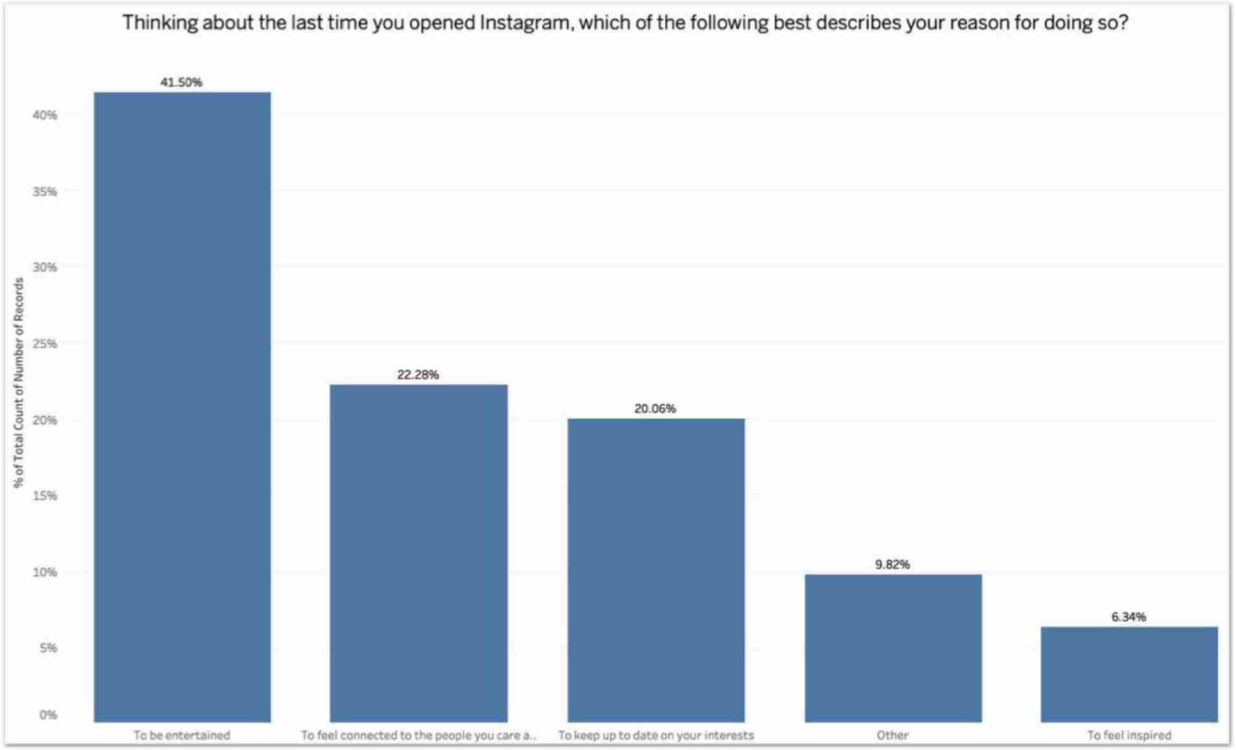
Source: User perception of time spent on Instagram, album by Ruogu [redacted], May 201

Being entertained is rated as most meaningful activity.



Source: User perception of time spent on Instagram, album by Ruogu [redacted] May 201

To be entertained was the most selected response for why a person opened Instagram during their last session followed by wanting to feel connected to people you care about.



Source: Interests on Home: Megaphone Survey, post by Randy [redacted] April 2019



IMPRESSIONS & REVENUE

Likes and retention, too

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FCI DAP: POWER USER OVERLAP, REVENUE FOCUS

Among power users of one metric, how many are also power users of another metric?

Intersection of the Power User Population for Each Metric

	media impressions	stories media impressions	feed media impressions	revenue	feed revenue	stories revenue	time spent hours	app sessions
media impressions	100%	78%	43%	17%	13%	26%	43%	31%
stories media impressions	78%	100%	22%	12%	7%	27%	37%	27%
feed media impressions	43%	22%	100%	23%	24%	15%	31%	25%
revenue	17%	12%	23%	100%	83%	47%	16%	14%
feed revenue	13%	7%	24%	83%	100%	31%	13%	11%
stories revenue	26%	27%	15%	47%	31%	100%	19%	21%
time spent hours	43%	37%	31%	16%	13%	19%	100%	41%
app sessions	31%	27%	25%	14%	11%	21%	41%	100%

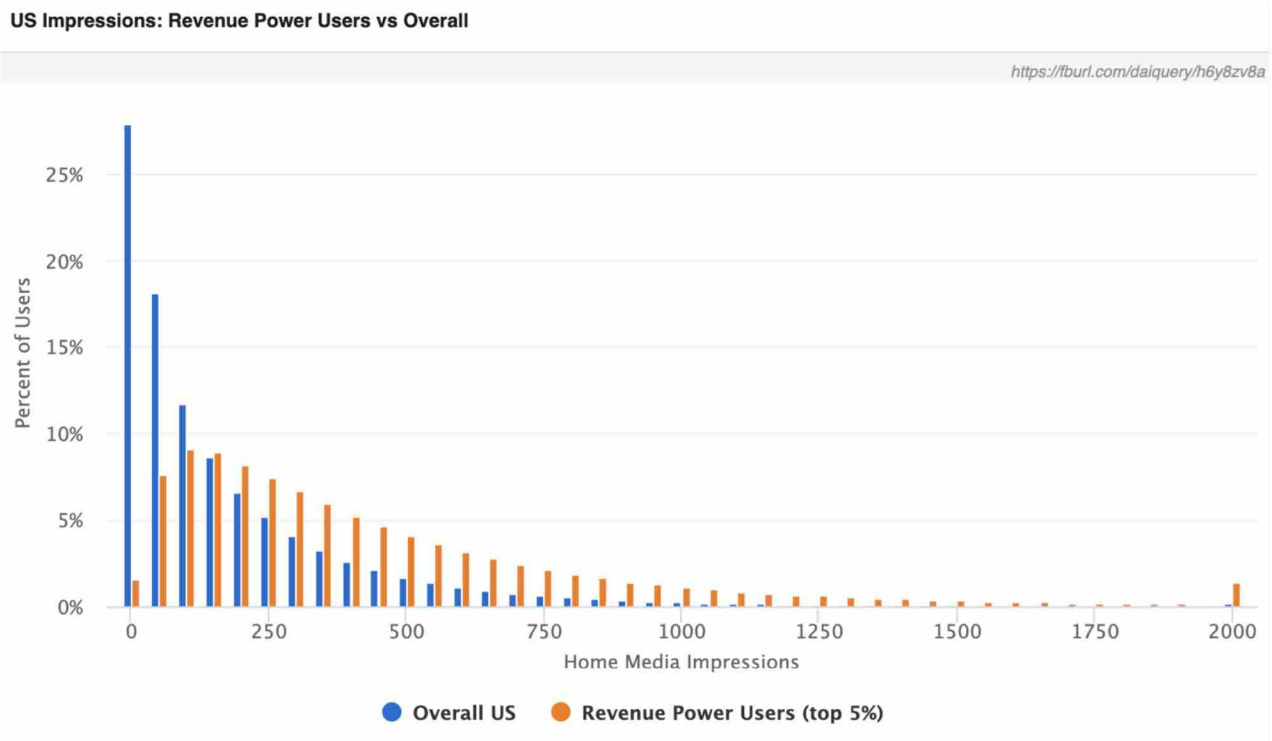
- The users with the most impressions are viewing a ton of stories
  - Overlap is 78% between media and stories power users
  - Overlap between media and feed is really low, only 22%
- Revenue power users are more likely to be feed impressions power users than stories impressions power users (23% overlap vs 12% overlap)
- Only 24% overlap between feed revenue power users and feed impressions power users
  - There's a lot of high value users who aren't impression power users
- Only 27% overlap between stories revenue power users and stories impressions power users

Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. All impressions are on the home surface.

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REVENUE POWER USER MEDIA IMPRESSIONS

Revenue power users have on average 2.5x more impressions



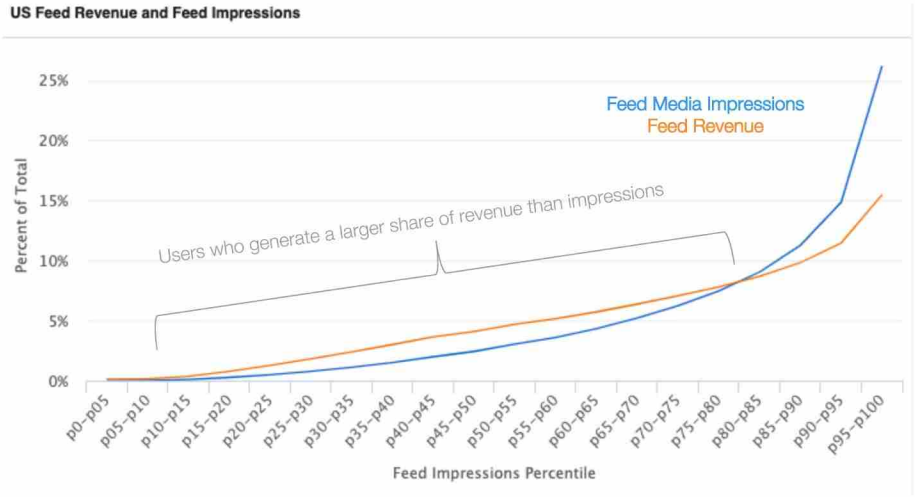
- 80% of revenue power users have more than 130 impressions, as do 40% of overall users
- Still, some revenue power users have surprisingly few impressions: a tenth of them have less than 80

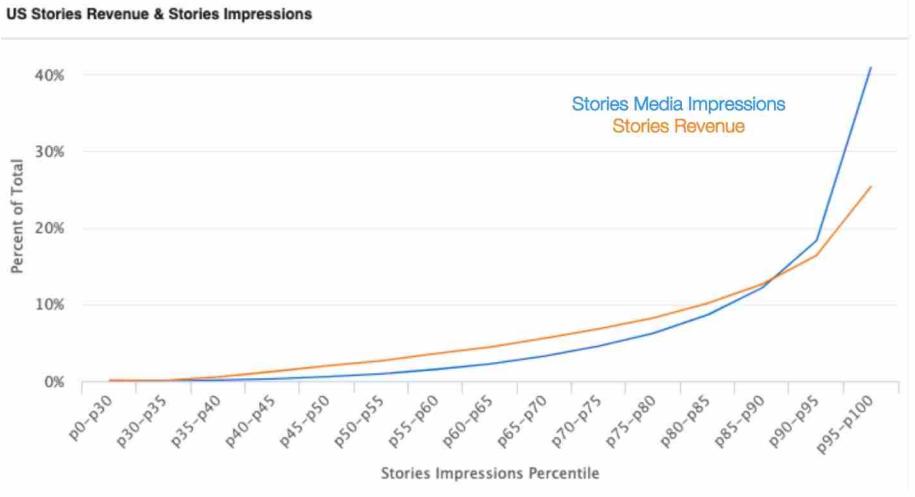
Data: Power users are defined here as the top 5% of US DAP by revenue. Week of 5/12/10-5/18/19. Media includes feed and Stories. All impressions are on the home surface.

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REVENUE BY IMPRESSIONS PERCENTILE

The bottom 75% of users generate a larger share of revenue than impressions





Data: US DAP, Week of 5/12/10-5/18/19.

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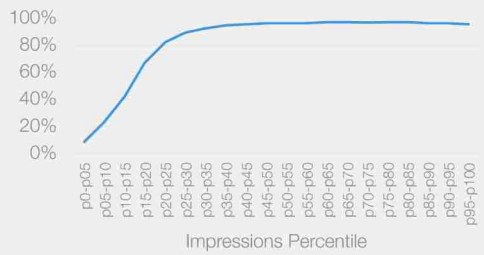
REVENUE PER IMPRESSION

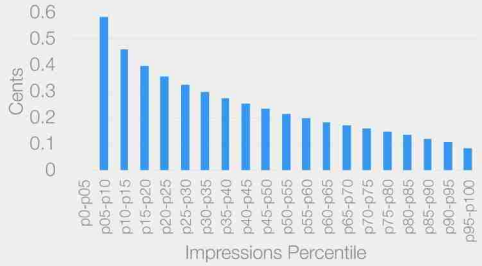
All impressions are not created equal: incremental impressions from less engaged users monetize better than impressions from more engaged users

Revenue participation

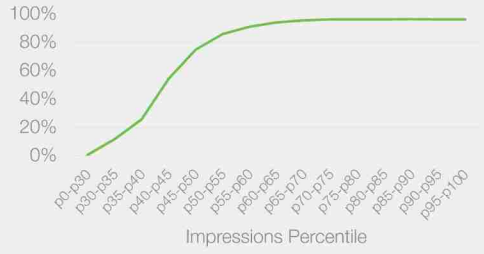
Incremental Revenue Per Impression

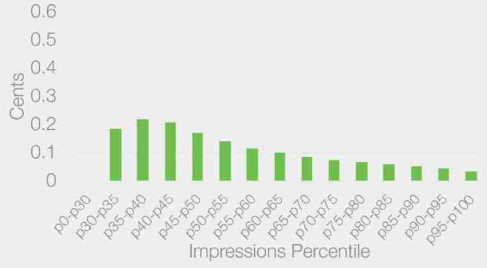
Feed





Stories





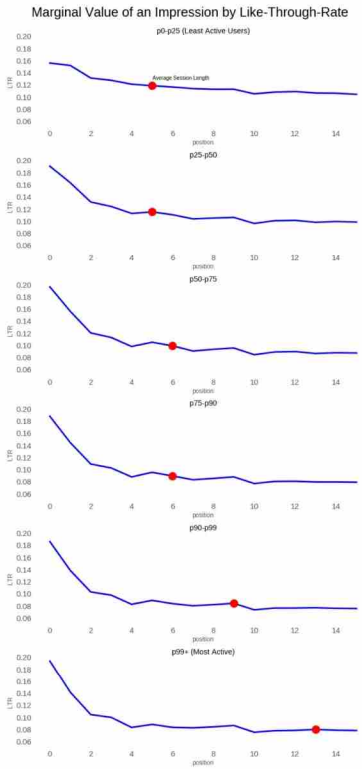
- Incremental impressions from less engaged users monetize better than impressions from more engaged users
- 30% of DAP are not fully monetized by feed
  - We don't show ads to "needy" users who have seen fewer than 10 impressions on feed in the last 24 hours
- 60% of DAP are not fully monetized by Stories
- Opportunity to increase impressions among needy users will enable monetization for many more users
- An incremental feed impression from a p20 user is worth 3x more in ad revenue than an incremental feed impression from a p90 user

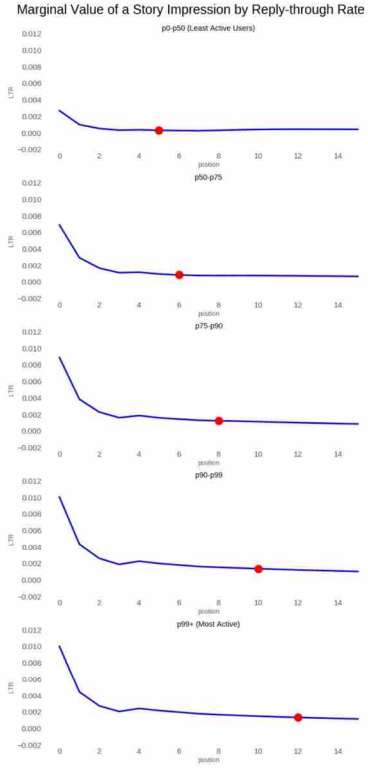
Data: US DAP, Week of 5/12/10-5/18/19. https://fburl.com/daiquery/hfhixjrg and https://fburl.com/daiquery/oscbga3b

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INCREMENTAL IMPRESSIONS

An incremental impression from a power user is less valuable than one from a normal user.





- Incremental feed impressions from a normal user are 50% more likely to lead to a like than an incremental impression from a power user
- Incremental story impressions and story replies do not have a clear relationship with user engagement, likely because story reply rate per impression is much lower than like through rate. May be worth following up at the reel level

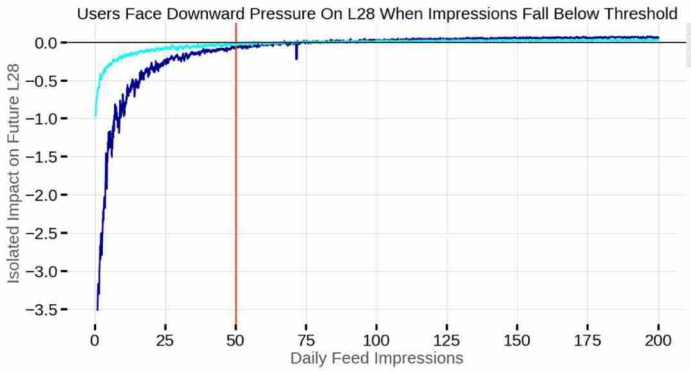
Data: Courtesy of Praveen [redacted] What We Miss When We Only Look at Averages (vs Distributions), https://fb.quip.com/pZsQAwPSImFb

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IMPRESSIONS & DAP

Incremental impressions for less engaged users are more impactful for future DAP than power user impressions

USERS FACE DOWNWARDS PRESSURE ON L28 WHEN FEED OR STORIES IMPRESSIONS FALL BELOW 50/DAY



The downside of falling below that threshold on future L28 is much more severe on Feed than it is on Stories

Currently, 23% of L28 = 28 users are in this situation in Feed, and 37% are in Stories

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Data: Outcomes of the Home data sprint, post by JB [redacted], May 2019

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WHO ARE POWER USERS

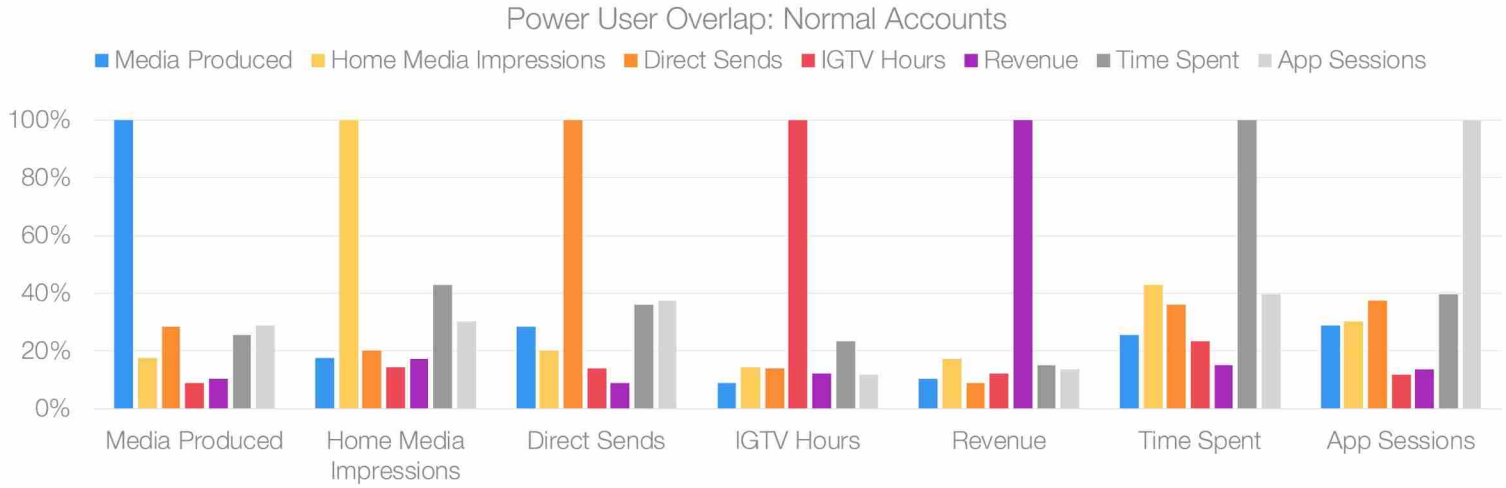
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WHO ARE POWER USERS

- 50% more likely than other users to be l28=28 (about 75% are)
- Within the FCI, US has lots of power users for revenue and all feed related metrics (feed impressions, feed production, likes, comments)
- US DAP are less likely to be Stories impressions power users than the rest of FCI. This is consistent with the fact that we see that media impressions power users in the US are more feed-focused than the rest FCI (overlap between stories and all media impression power users is 78% in fci vs 71% in US; overlap with feed is 43% in FCI vs 51% in US)
- Teens are really bad for revenue, but are power users of almost every other metric, especially likes and messages sent
- Top accounts (over 5k followers) are power users for not just production but also surprisingly impressions and all other metrics. they're spending a lot of time not just creating their own content but engaging with all aspects of the app (but still a single-digits share of total power user population)
- Private accounts are more likely to be consumption power users of impressions but less likely to be production, comments, or likes power users. Direct power users are just as likely to be private as not
- iOS overindexes on revenue, production, and feed impressions power users
- Some metrics show a big gender split while others are pretty equivalent (note that we don't have a gender inference for many people)
  - Stories impressions have more female power users but feed impressions have a bit more male power users
  - Time spent has more female power users but sessions may have more male power users
  - Production and comments have more female power users

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POWER USER OVERLAP: NORMAL ACCOUNTS



Normal accounts as defined by the account tiering system: accounts with <p99 followers (~4k) and not is_business (model of commerciality)

Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.
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FCI DAP: POWER USER OVERLAP

Among power users of one metric, how many are also power users of another metric?

Intersection of the Power User Population for Each Metric

	media produced	media produced stories	media produced feed	media impressions	media impressions stories	media impressions feed	likes	comments	direct sends	igtv hours	video time spent hours	revenue	time spent hours	app sessions
media produced	100%	73%	53%	18%	18%	13%	19%	32%	30%	9%	15%	11%	28%	30%
media produced stories	73%	100%	24%	24%	25%	15%	21%	28%	37%	12%	19%	12%	32%	35%
media produced feed	53%	24%	100%	10%	9%	13%	17%	30%	16%	8%	9%	13%	17%	20%
media impressions	18%	24%	10%	100%	78%	43%	22%	21%	21%	15%	38%	17%	43%	31%
stories media impressions	18%	25%	9%	78%	100%	22%	17%	18%	19%	12%	34%	12%	37%	27%
feed media impressions	13%	15%	13%	43%	22%	100%	27%	21%	17%	18%	27%	23%	31%	25%
likes	19%	21%	17%	22%	17%	27%	100%	33%	23%	17%	21%	15%	27%	19%
comments	32%	28%	30%	21%	18%	21%	33%	100%	30%	16%	22%	17%	32%	28%
direct sends	30%	37%	16%	21%	19%	17%	33%	30%	100%	14%	21%	9%	37%	39%
igtv hours	9%	12%	8%	15%	12%	18%	17%	16%	14%	100%	30%	12%	23%	12%
video time spent hours	15%	19%	9%	38%	34%	27%	21%	22%	21%	30%	100%	14%	62%	24%
revenue	11%	12%	13%	17%	12%	23%	15%	17%	9%	12%	14%	100%	16%	14%
time spent hours	28%	32%	17%	43%	37%	31%	27%	32%	37%	23%	62%	16%	100%	41%
app sessions	30%	35%	20%	31%	27%	25%	19%	28%	39%	12%	24%	14%	41%	100%

Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.

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US DAP: POWER USER OVERLAP

Among power users of one metric, how many are also power users of another metric?

Intersection of the Power User Population for Each Metric

	media produced	media produced stories	media produced feed	media impressions	media impressions stories	media impressions feed	likes	comments	direct sends	igtv hours	video time spent hours	revenue	time spent hours	app sessions
media produced	100%	72%	55%	20%	21%	14%	19%	31%	30%	9%	17%	11%	29%	31%
media produced stories	72%	100%	24%	26%	28%	16%	21%	29%	36%	11%	21%	13%	34%	36%
media produced feed	55%	24%	100%	11%	10%	12%	16%	33%	17%	8%	10%	12%	17%	20%
media impressions	20%	26%	11%	100%	71%	51%	23%	19%	22%	13%	35%	21%	41%	35%
media impressions stories	21%	28%	10%	71%	100%	23%	17%	17%	20%	10%	29%	18%	34%	31%
media impressions feed	14%	16%	12%	51%	23%	100%	27%	18%	17%	17%	30%	21%	33%	26%
likes	19%	21%	16%	23%	17%	27%	100%	28%	25%	17%	23%	14%	28%	19%
comments	31%	29%	33%	19%	17%	18%	28%	100%	28%	13%	21%	13%	30%	25%
direct sends	30%	36%	17%	22%	20%	17%	25%	28%	100%	14%	24%	10%	40%	40%
igtv hours	9%	11%	8%	13%	10%	17%	17%	13%	14%	100%	29%	12%	23%	11%
video time spent hours	17%	21%	10%	35%	29%	30%	23%	21%	24%	29%	100%	14%	64%	28%
revenue	11%	13%	12%	21%	18%	21%	14%	13%	10%	12%	14%	100%	17%	13%
time spent hours	29%	34%	17%	41%	34%	33%	28%	30%	40%	23%	64%	17%	100%	44%
app sessions	31%	36%	20%	35%	31%	26%	19%	25%	40%	11%	28%	13%	44%	100%

Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.

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US TEENS DAP: POWER USER OVERLAP

Among power users of one metric, how many are also power users of another metric?

Intersection of the Power User Population for Each Metric

	media produced	media produced stories	media produced feed	media impressions	media impressions stories	media impressions feed	likes	comments	direct sends	igtv hours	video time spent hours	revenue	time spent hours	app sessions
media produced	100%	73%	52%	24%	25%	12%	16%	33%	27%	7%	19%	14%	33%	29%
media produced stories	73%	100%	23%	30%	33%	14%	19%	30%	32%	9%	24%	17%	38%	34%
media produced feed	52%	23%	100%	12%	10%	11%	13%	30%	16%	6%	10%	10%	17%	18%
media impressions	24%	30%	12%	100%	68%	49%	24%	23%	20%	12%	33%	31%	39%	35%
media impressions stories	25%	33%	10%	68%	100%	19%	16%	22%	19%	8%	27%	23%	35%	31%
media impressions feed	12%	14%	11%	49%	19%	100%	29%	16%	15%	17%	25%	28%	26%	24%
likes	16%	19%	13%	24%	16%	29%	100%	21%	20%	16%	21%	25%	25%	16%
comments	33%	30%	30%	23%	22%	16%	21%	100%	27%	10%	21%	16%	32%	26%
direct sends	27%	32%	16%	20%	19%	15%	20%	27%	100%	10%	20%	14%	46%	40%
igtv hours	7%	9%	6%	12%	8%	17%	16%	10%	10%	100%	23%	14%	17%	8%
video time spent hours	19%	24%	10%	33%	27%	25%	21%	21%	20%	23%	100%	21%	57%	24%
revenue	14%	17%	10%	31%	23%	28%	25%	16%	14%	14%	21%	100%	23%	19%
time spent hours	33%	38%	17%	39%	35%	26%	25%	32%	46%	17%	57%	23%	100%	43%
app sessions	29%	34%	18%	35%	31%	24%	16%	26%	40%	8%	24%	19%	43%	100%

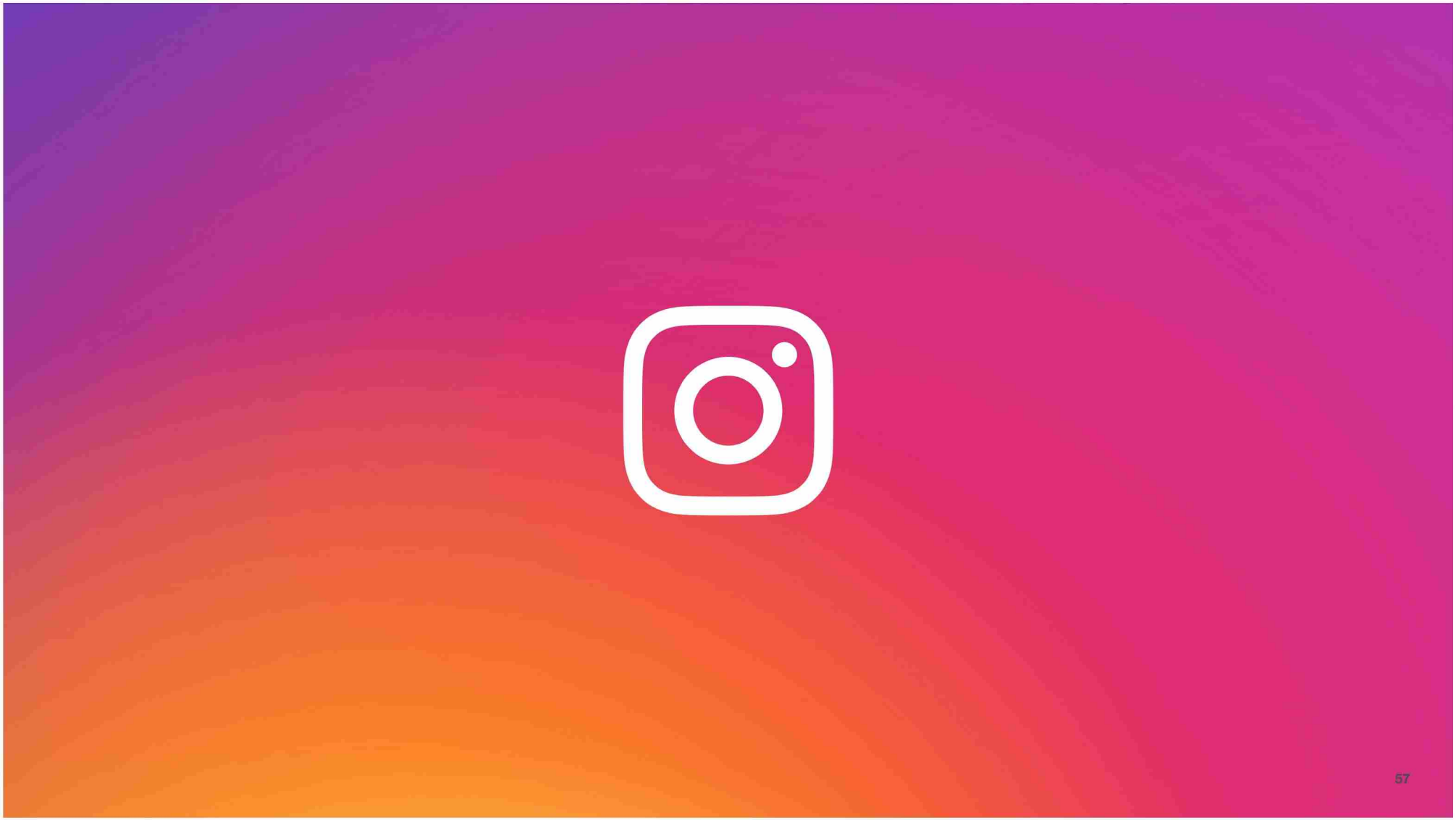
Data: Power users are defined here as the top 5% of DAP per metric. FCI only. Week of 5/12/10-5/18/19. Media includes feed and Stories. Shopping is excluded because participation is less than 5%.

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METATNAG-019-01409959

DATA

- FCI DAP
- Week of 5/12/10-5/18/19
- Queries: https://phabricator.internmc.facebook.com/P65040260
- 10% of DAP sampled

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METATNAG-019-01409961

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