



LIFETIME VALUE THE CORNERSTONE OF APP MARKETING

2018 LTV Benchmarks

KEY FINDINGS

01

Revenue from app marketing is up 80% since 2016 despite growing challenges.

An increasingly competitive marketplace and dwindling retention rates have led more and more app marketers across all verticals to rely on data to measure and optimize revenue -- and the results show.

02

There are significant differences in marketing performance between gaming, shopping, and travel verticals

The performance gap between iOS and Android and between organic and non-organic traffic is much smaller in gaming than it is in shopping and travel apps. In gaming, revenue from an average iOS user is only 28% higher than Android compared to a 70% and 60% higher spend in shopping and travel, respectively. The share of paying users in gaming is only 6% higher for organic users compared with 25% higher and no less than 170% higher for travel and shopping, respectively. A key reason for this significant gap is the much heavier use of data among gaming app marketers.

03

The US and the UK are in a league of their own in revenue generation but there is potential for growth in emerging markets

The value generated by in-app consumers in more mature US and UK markets is significantly higher than in other markets examined here. However, competition in the US and UK markets is fierce and the cost of media is much higher. In emerging markets like Indonesia, India and Brazil, improved revenue optimization could create notable opportunities for growth in profitability amid a low cost of media in these countries.

04

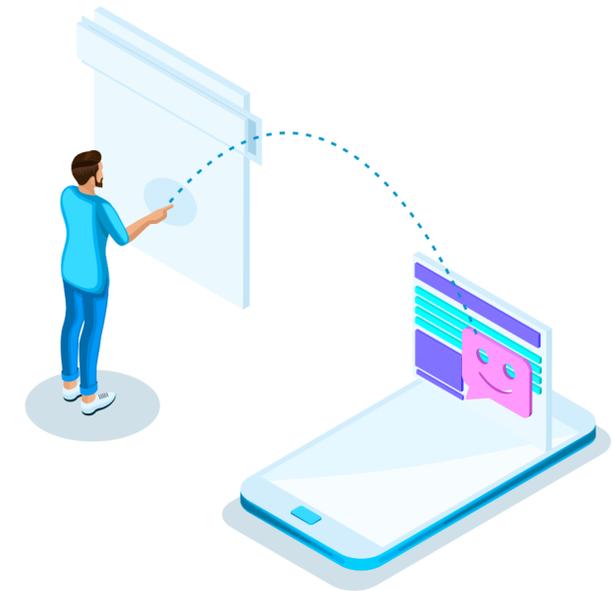
Timing re-engagement to the LTV curve will propel revenue growth.

When there's a decline in revenue, marketers should run re-engagement campaigns across paid and owned channels. Encouraging ongoing usage with effective revenue-related messaging (e.g., 10% off your next purchase) can help apps generate more business from the average user.

05

Connecting cost to revenue is essential to determining bottom line.

Although not in the scope of this report, it is important to emphasize that app marketers should connect cost to LTV to determine return on ad spend (ROAS). In our recent [AppsFlyer Performance Index](#), we found that in both gaming and non-gaming categories, high revenue has a stronger correlation with ROAS than a low CPI. That means marketers should pay attention to both metrics, but revenue optimization comes first.



LTV ~ Lifetime Value

Lifetime value is the overall revenue a business generates from an average user throughout their time using an app.

It is the cornerstone of app marketing as it informs marketers on how much they can spend to acquire a user and still remain profitable.

With the rise in importance of paid traffic amid a decrease in organic traffic, measuring and acting on LTV can mean the difference between an app's success or failure.

INTRODUCTION

CHALLENGES OF THE APP ECONOMY IN 2018



Mobile has created tremendous opportunities for marketers to not only reach a significant number of consumers at practically all times, but also to boost user loyalty: apps are just a single tap away, they offer a much better user experience than mobile web, and they enable effective re-engagement with consumers via push notifications.

However, with millions of apps in the app store and ever-increasing user expectations, user loyalty, retention and profitability remain significant [challenges](#) for apps. With less ongoing engagement, monetization becomes difficult with users making fewer purchases and viewing fewer ads. The result is that lifetime value (LTV) drops.

This comes amid two parallel trends which further exasperate monetization challenges. First, organic app discovery is largely broken, leading to a [decrease](#) in high-value organic users; and, as a result, revenue is dropping. Second, media costs are [on the rise](#). This has a negative impact on profitability, especially since apps have to compensate for the drop in organic users with more paid installs.

WINNING IN THE 2018 APP ECONOMY

To overcome the overall monetization challenge, apps must maximize the potential of multiple revenue streams: in-app purchases (IAP), in-app advertising (IAA), paid-for apps, and subscriptions. The 'paid-for' model only works for a small percentage of apps with unique content and a top brand. The subscription model is most beneficial for a minority of apps that consistently provide ongoing value to loyal users and offer regularly updated features or content.

Ultimately, the vast majority of revenue for apps comes from IAP and IAA. The former commands the lion's share of revenue — be it from buying coins in a game, purchasing a t-shirt in a shopping app, or booking a flight in a travel app. However, the latter is eating an increasingly larger piece of the pie as more and more developers seek to

monetize their in-app ad real estate and take advantage of rising media costs, wearing their publisher rather than advertiser hat.

The good news is that many apps are able to monetize and run profitable businesses. Marketers can play an instrumental role in their apps' success by improving user loyalty and increasing LTV. The only way to achieve this is to rely on data, granular measurement and actionable analytics.

Maximizing the value of non-organic installs is key as they become increasingly important. With the right data in hand, marketers can make the right decisions to ensure this goal is met.



* To find out how to measure Facebook Audience Network ad revenue with AppsFlyer, please refer to the appendix

WHAT'S IN THE REPORT



To help marketers harness the power of data to drive growth, AppsFlyer teamed up with Facebook to create *Lifetime Value: The Cornerstone of App Marketing*. This report provides multiple LTV-related benchmarks for key verticals across key markets: organic vs. non-organic revenue, Android vs. iOS revenue, average revenue per user (ARPU), number of purchases per user, first-purchase distribution, and more.

These benchmarks will help you understand:

- | Which countries are home to the most active consumers demonstrating purchasing power
- | How much revenue is generated over different periods of time
- | Which platforms - Android or iOS - drive higher LTV
- | When consumers make their first purchase and how many of them do so repeatedly
- | When to re-engage existing users to boost LTV



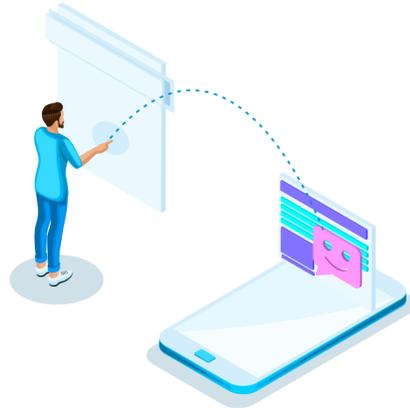
THE MOST SOPHISTICATED APP MARKETERS ARE INTEGRATING LTV AS A KEY INDICATOR OF SUSTAINABLE AND PROFITABLE GROWTH.

BY MEASURING LTV — AND TAKING ACTIONS BASED ON THOSE INSIGHTS — THEY ARE GIVING THEMSELVES A CLEAR COMPETITIVE ADVANTAGE OVER THOSE WHO ARE ONLY LOOKING AT CPI.



Bryan Wang | Head of Marketing Science,
Facebook Greater China

DATA HIGHLIGHTS FOR STUDY

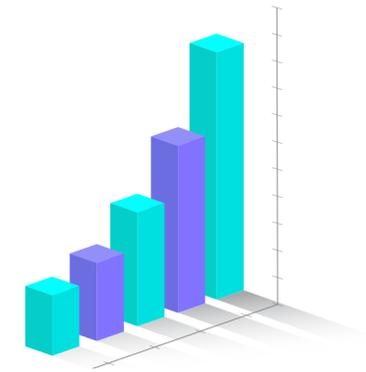


250 MILLION

Non-organic installs sampled during the first half of January 2018 from the top 300 of AppsFlyer's integrated media partners.



3,800 APPS



\$2.4 BILLION

Total revenue measured worldwide during Q1 2018

All data used in the report is measured by AppsFlyer, a mobile attribution and marketing analytics company and an official Facebook Mobile Measurement Partner (MMP) that measures the effectiveness of its clients' app marketing campaigns. This is done via integrations with leading media partners as well as its propriety SDK implemented in its clients' apps.

All data is anonymous and aggregated.

Data presented did not come from Facebook, nor was procured from Facebook.

HOW WE MEASURED LTV

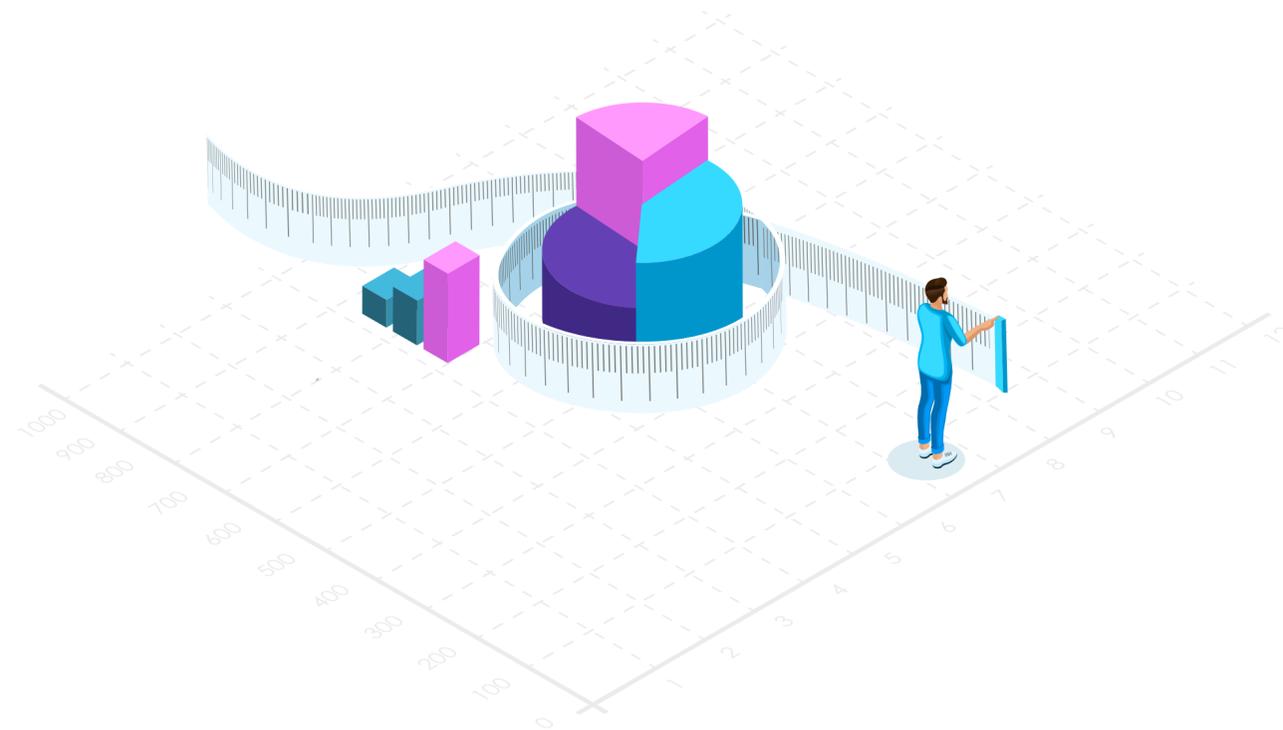
To determine the most accurate LTV benchmark based on historical data, we singled out 10 different install days across the first half of January 2018. We then looked at each day as its own cohort, measuring its generated in-app purchase (IAP) revenue throughout 90 days. It is therefore referred to as the Day 90 LTV and can also be called the Day 90 ARPU (Average Revenue Per User).

For example, to calculate day 30 LTV of users who downloaded an app on Jan. 1, we looked at revenue generated by these users from Jan. 1-30; or, for the day 60 LTV of users who installed on Jan. 10, we pulled revenue generated by these users from Jan. 10 to March 10.

To determine the LTV of gaming apps, we factored IAA revenue based on our global benchmark by which it is responsible for approximately 30% of a gaming app's income.

For travel, a 180-day period was examined because of the usually longer customer journey in this vertical. As such, a September cohort time frame was used.

To ensure statistical validity, significant action was taken to remove outliers on multiple levels.



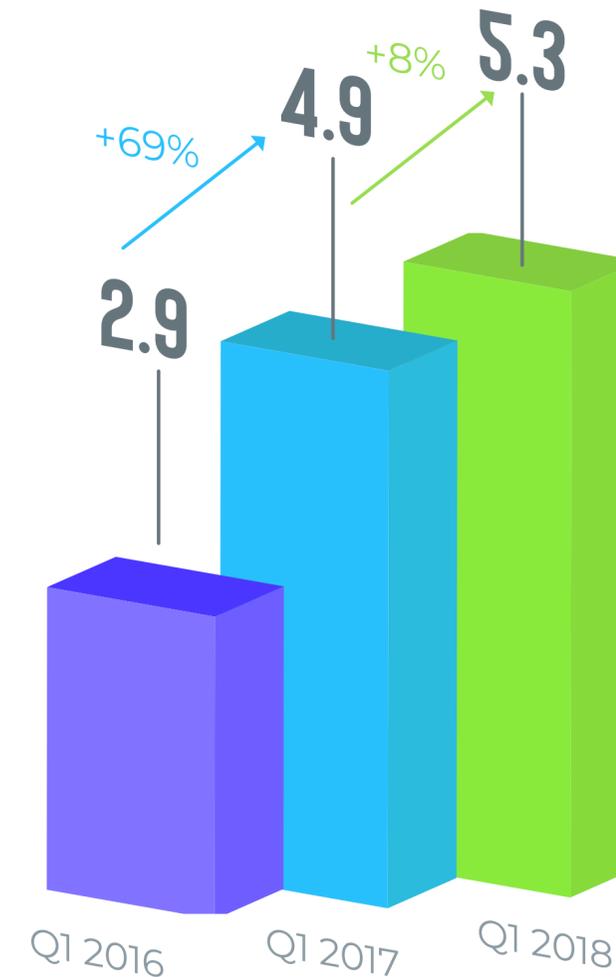
Q1 2018 LTV Benchmarks

MARKETING-DRIVEN APP REVENUE RISING

As marketers become increasingly adept with the use of data, they are able to better leverage it to increase revenue. In fact, between 2016 and 2017, the share of apps that measured revenue has tripled. When revenue is measured, it can be properly optimized, which is why we see a 69% YoY climb between these years, and an 83% jump between 2016 and 2018.

The decline in growth between 2017 and 2018 is likely the result of heightened competition in the app space, and a relative slowdown in revenue optimization after the initial surge driven by the mass adoption of revenue measurement.

Global Non-Organic Day 90 Average User LTV Trend (USD)*



* Includes IAP data from 40 top countries across all verticals and platforms combined

GAMING

GLOBAL BENCHMARKS

Q1 2018 LTV Benchmarks

A VIEW FROM ABOVE: CROSS-GENRE AVERAGE

In gaming it's all about the paying users: the few and mighty

\$1.70

90-Day LTV* (Average Revenue Per User)

* Combines IAP + IAA revenue, organic & non-organic traffic

\$70.27

90-Day Average Revenue Per Paying User

* Combines organic & non-organic traffic

3.8%

Share of Paying Users

* Combines organic & non-organic traffic

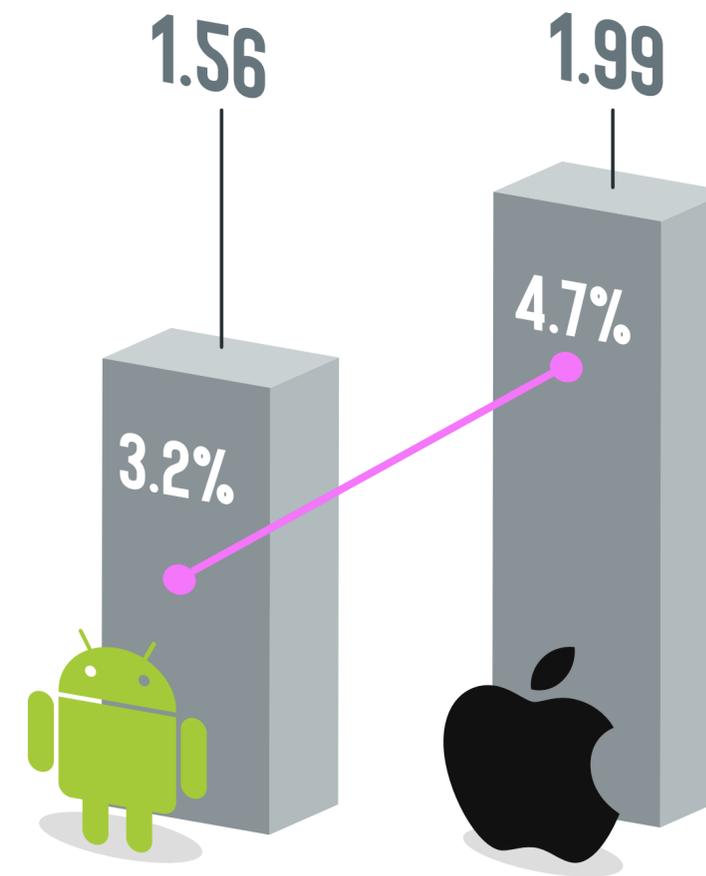
The average gamer spends \$1.7 during a 90-day period. When isolating paying users, the number jumps over 40 times. Though less than 4% of users actually make in-app purchases, these users are extremely valuable.

iOS PLAYERS SPEND ONLY 28% MORE THAN ANDROID USERS

This number is relatively low if we compare other verticals

Q1 2018 LTV Benchmarks

Revenue Per User* & Share of Buyers By Install Type (Global, Gaming)



Although Day 90 LTV on iOS was only 28% higher than Android, its share of buying users was 50% higher.

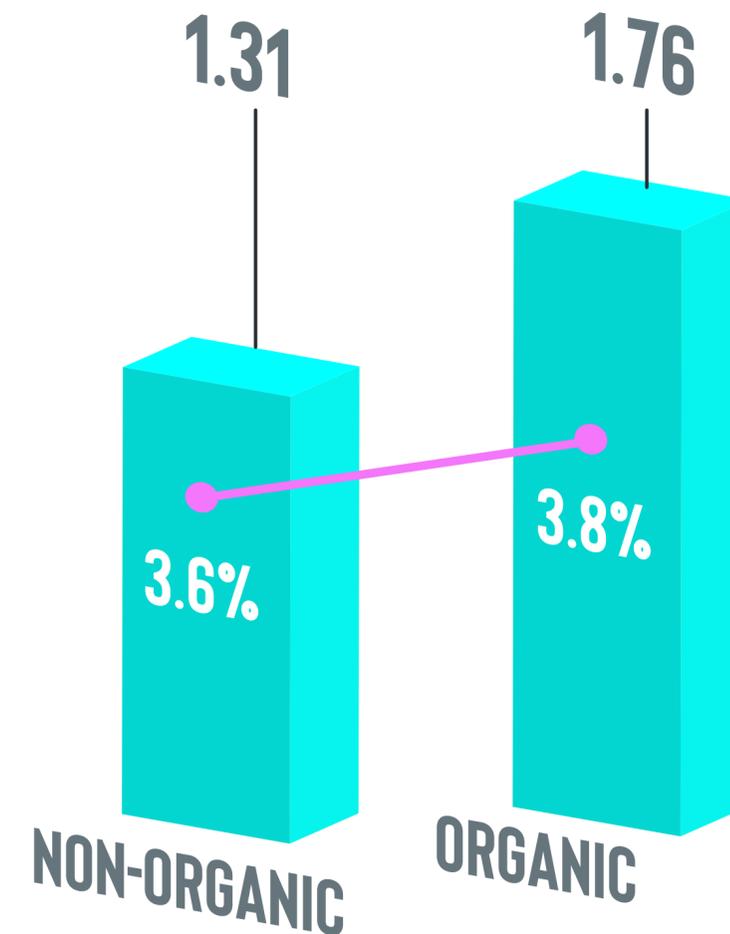
■ LTV (90 Days)
■ Share of Buying Users (90 Days)

* Includes IAP + IAA Revenue

GAMING APP MARKETERS EXCEL AT FINDING PAYING USERS

The share of paying users between organic vs. non-organic downloaders is insignificant — only 6%; but organic users outspend non-organic users by 34%

Revenue Per User* & Share of Buyers By Install Type (Global, Gaming)



The organic/non-organic gap in gaming is the least pronounced of all verticals. This is because a) data-savvy gaming marketers excel at optimizing for revenue, and b) organic discovery in gaming is experimental in nature and is characterized by a low level of brand affinity.

- LTV (90 Days)
- Share of Buying Users (90 Days)

* Includes IAP + IAA Revenue



COUNTRY BREAKDOWN

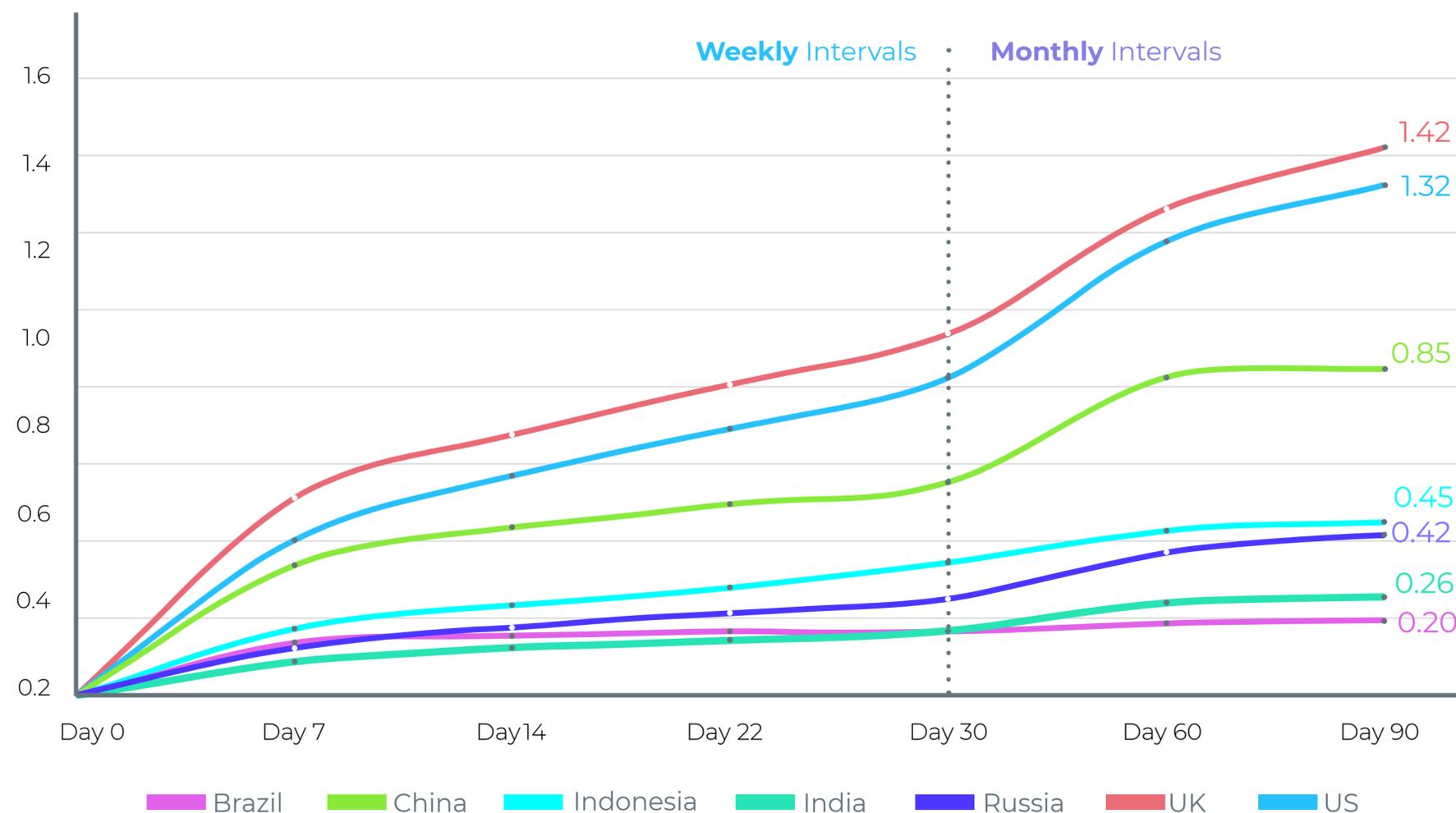
MOST REVENUE IS GENERATED EARLY ON

The US and UK markets stand above the crowd with increased revenue growth over time

Q1 2018 LTV Benchmarks

Non-Organic LTV (All User Average) Curve* (USD, Gaming)

Mature US and UK markets generate significantly higher revenue and their growth rate doesn't drop after 30 days. In contrast, in developing markets like Brazil, India and Indonesia, revenue is much lower and growth is relatively minimal. China lies somewhat in between mature and developing markets, and this is also evident in their LTV.



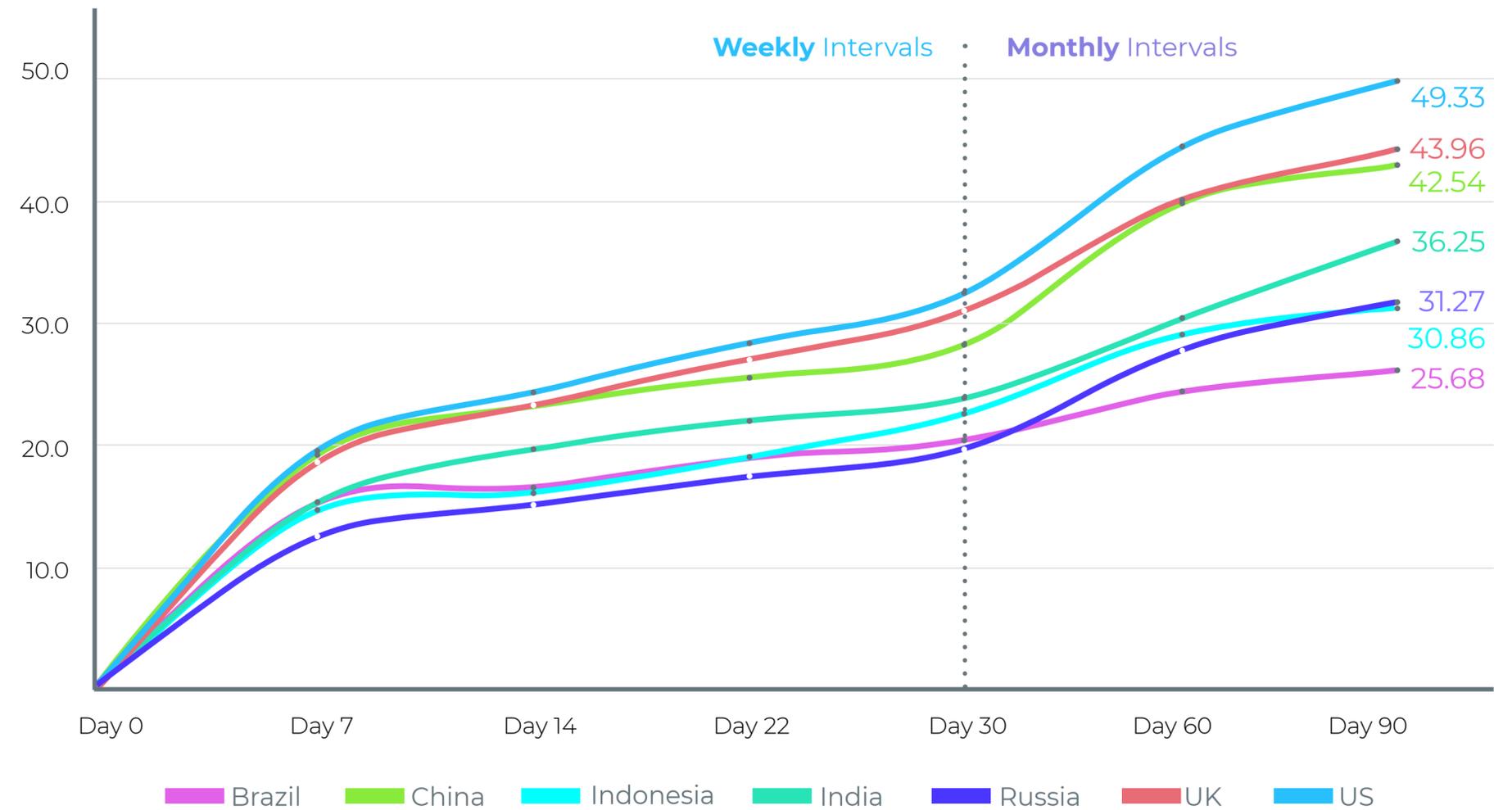
* Includes IAP + IAA Revenue

PAYING USERS ARE MORE ALIKE ACROSS DIFFERENT COUNTRIES

Paying users who remain active in a game increase their spending over time

Q1 2018 LTV Benchmarks

Non-Organic LTV (Average Paying User) Curve* (USD, Gaming)



* Includes IAP + IAA Revenue

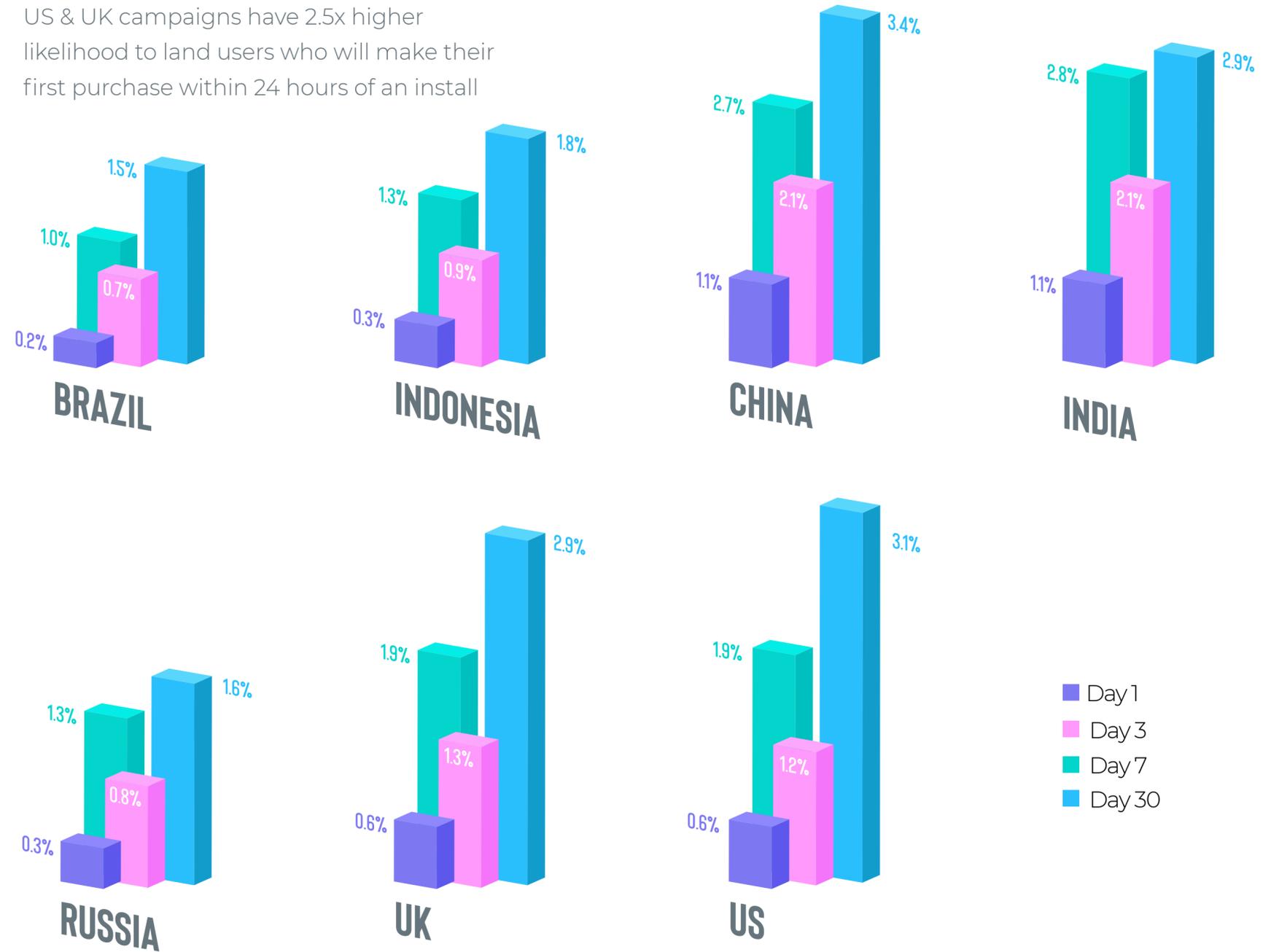
AMONG ALL USERS, ONLY ABOUT 2% MAKE 1ST PURCHASE WITHIN A WEEK

Number of conversions doubles from day 1 to 3, increases 30% from day 7 to 30

Q1 2018 LTV Benchmarks

First-Purchase Distribution Among Non-Organic Users (Cumulative, Gaming)

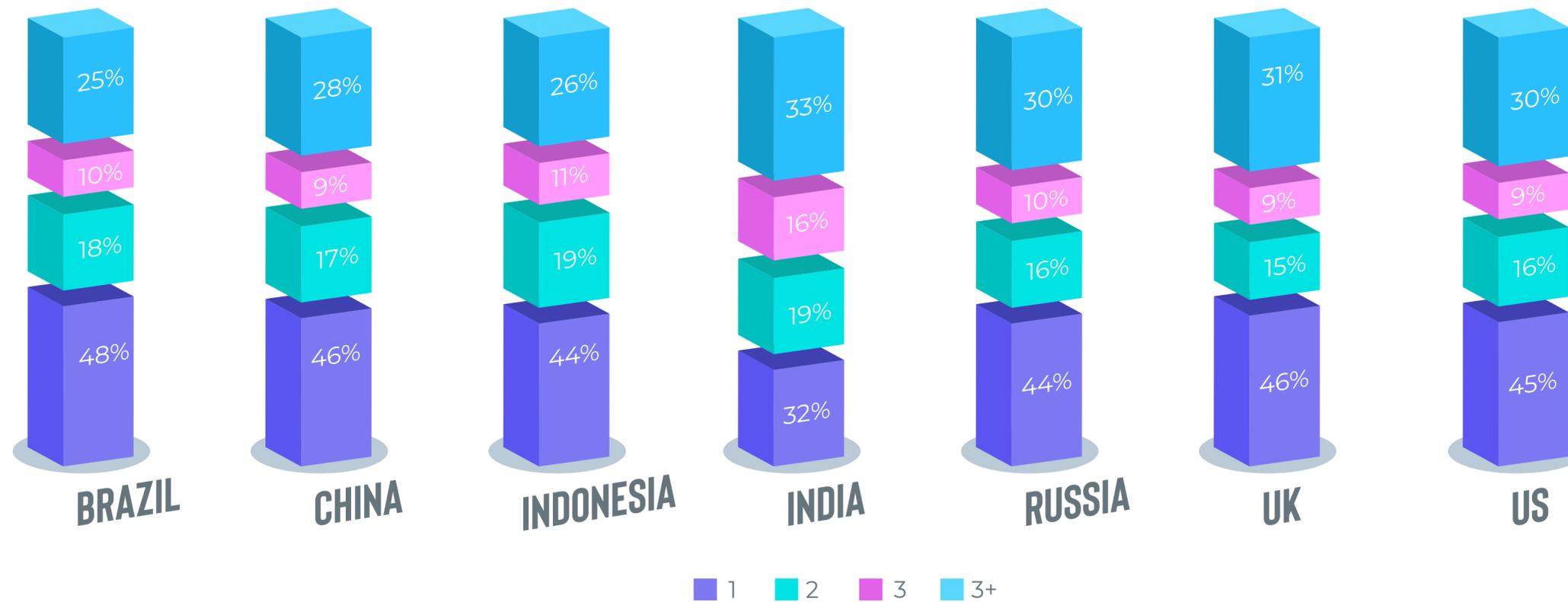
US & UK campaigns have 2.5x higher likelihood to land users who will make their first purchase within 24 hours of an install



LARGEST MULTI-BUYER GROUPS: 1-TIME BUYERS AND HEAVY '3+ BUYERS'

Most paying users do not use a gaming app over time, but those who do become increasingly engaged

Distribution of Purchases Per Non-Organic User Within 90 Days



KEY TAKEAWAYS

01

Focusing on quality is top priority

Though less than 4% of gamers actually make in-app purchases, they drive the ship. For gaming app marketers, these users represent the reason why today especially, user acquisition is all about quality. This is true for all key markets. Not only is the average revenue from paying gamers 40 times higher than the average among all gamers, their growth rate only climbs over time (after the week 1 surge).

02

Relying on data drives results for gaming marketers

The organic/non-organic gap in gaming is the smallest of all the verticals. This is because data-savvy gaming marketers excel at optimizing for revenue, and brand affinity in organic discovery in gaming is relatively low.

03

Re-engaging users at the right time can increase LTV

Because revenue generated in the first week is significant, and then mostly drops off, it is important to time re-engagement campaigns accordingly when the LTV curve begins to flatten. Effective messaging at the right time is key.

04

Discovering new markets can open up new revenue streams

Mature US and UK markets generate significantly higher revenue but are also known to be fiercely competitive. In contrast, in developing markets like Brazil, India and Indonesia, revenue is much lower, but the potential to optimize and grow is greater. China represents an exciting opportunity with increased revenue, a high rate of paying users and a massive audience.

05

Paying users who become loyal are more actively engaged over time

Over 30% of paying gamers make more than three purchases within a 90-day period — not a small sum. Re-engaging the 2- or 3-time purchasers can increase this number even further.

SHOPPING

GLOBAL BENCHMARKS

Q1 2018 LTV Benchmarks

A VIEW FROM ABOVE

\$13.88

90-Day LTV (Average Revenue Per User)

* Combines organic & non-organic traffic

9.7%

Share of Paying Users

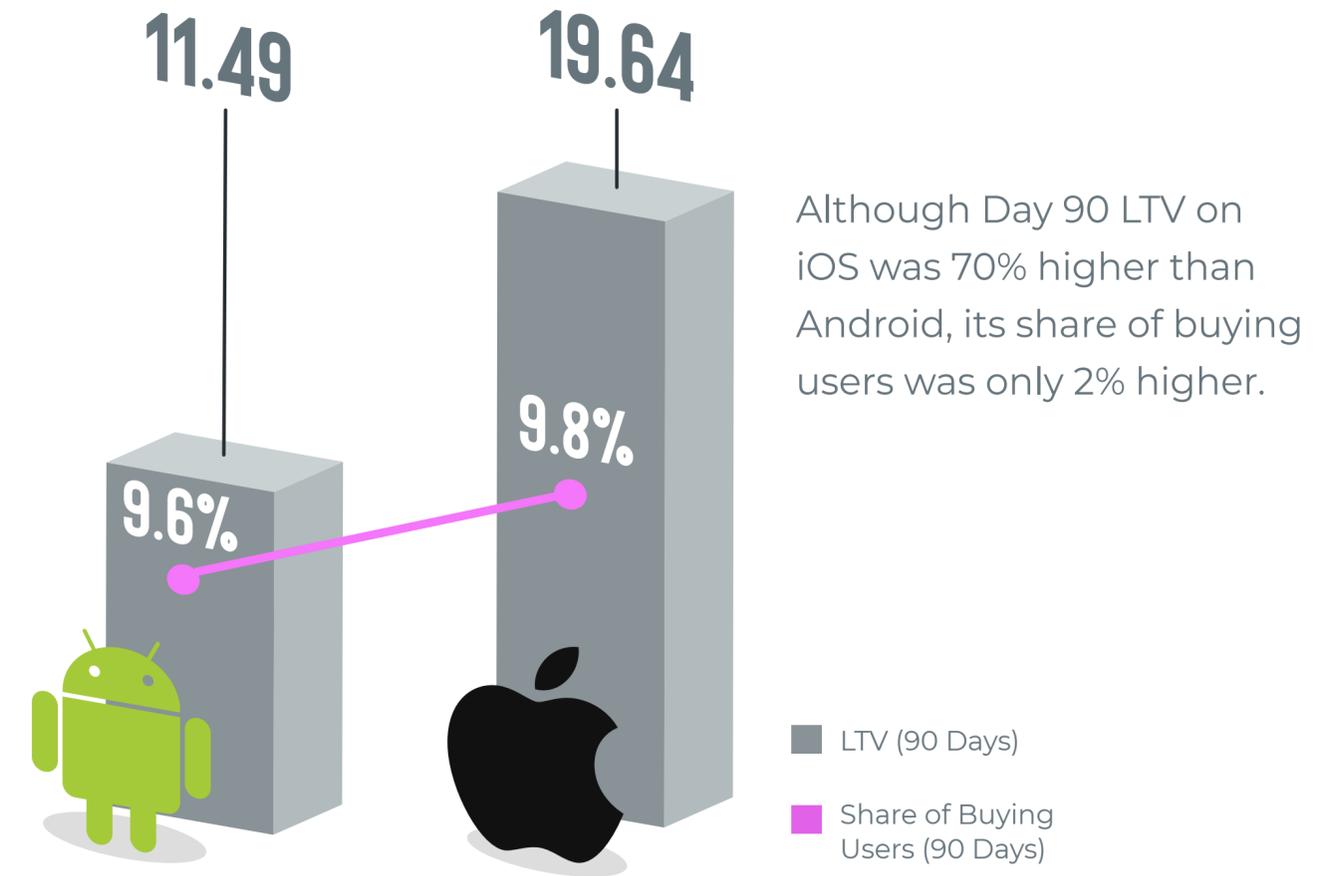
* Combines organic & non-organic traffic

Shopping app consumers often know the brand before installing its app. As a result, their brand affinity is strong and consequently so too is the high share of paying users in this vertical.

iOS SHOPPERS DELIVER HIGHEST VALUE

Although the rate of buyers is roughly the same, when shopping, the average iOS user spends 70% more than the Android user

IAP Revenue Per User & Share of Buyers By Platform (USD, Global, Shopping)

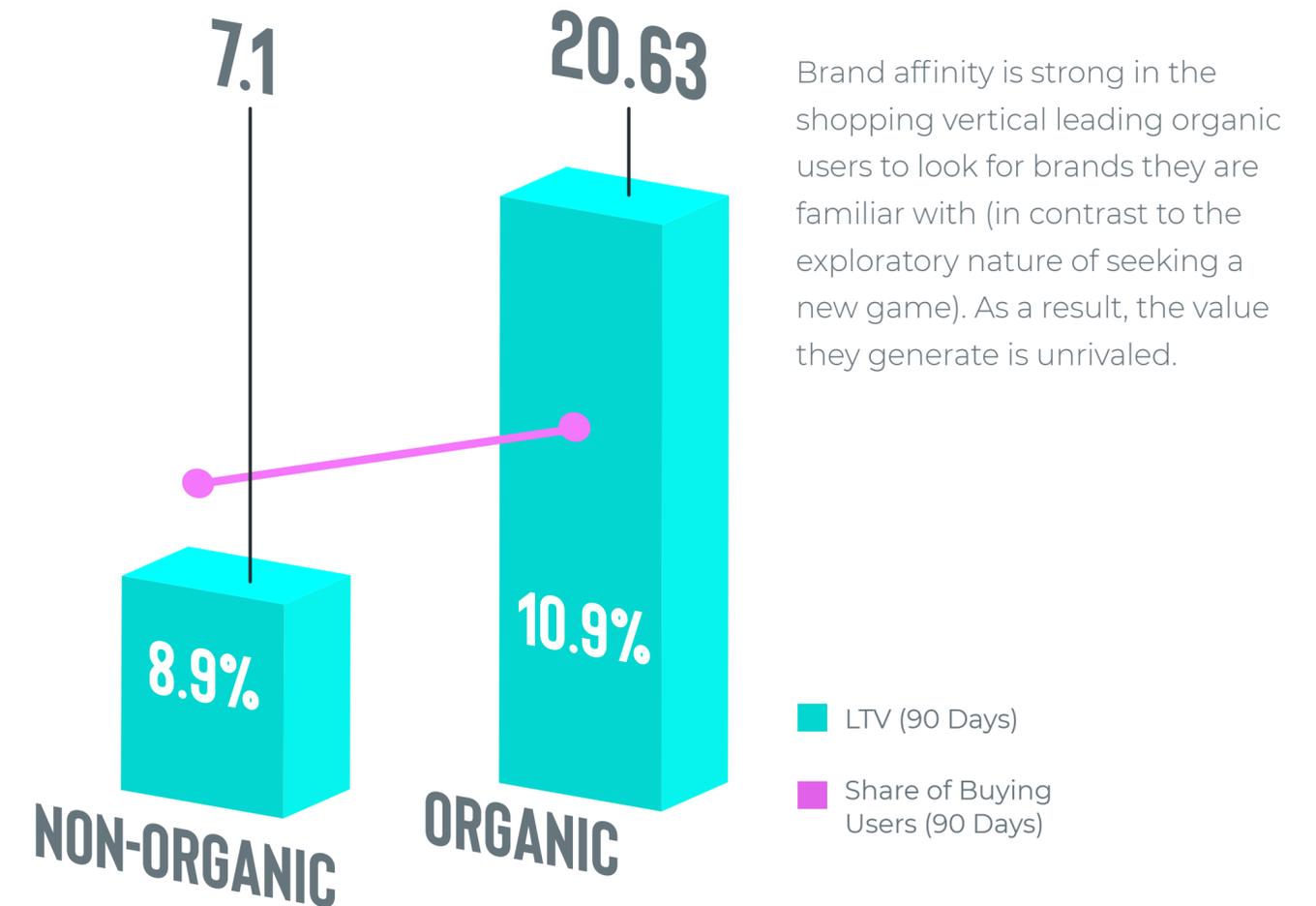


NON-ORGANIC SHOPPERS NO MATCH FOR ORGANIC SHOPPERS

Organic users spend almost triple the money

Q1 2018 LTV Benchmarks

IAP Revenue Per User & Share of Buyers By Install Type (USD, Global, Shopping)



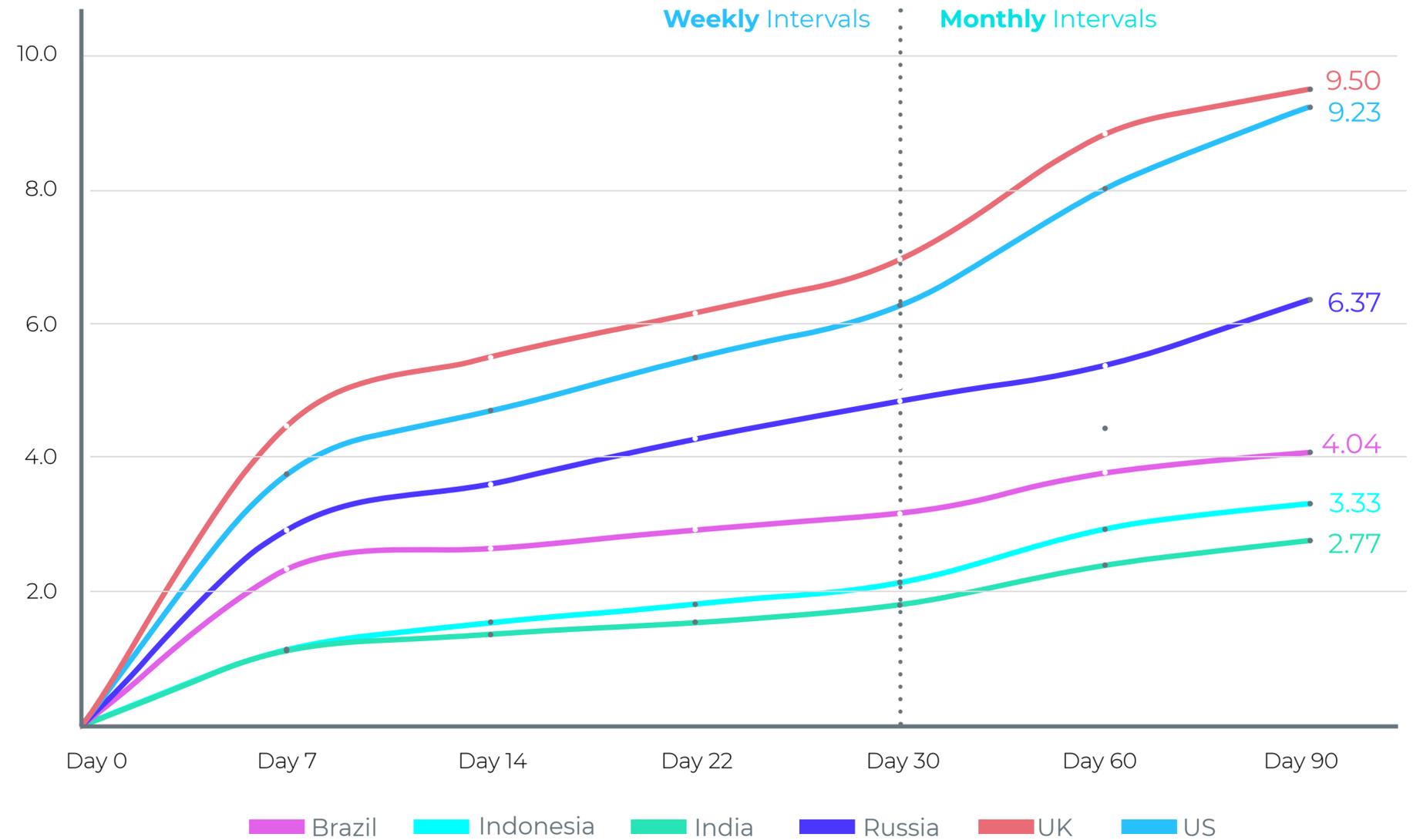


COUNTRY BREAKDOWN

LOYAL SHOPPERS PROPEL REVENUE GROWTH OVER 90-DAY PERIOD

Q1 2018 LTV Benchmarks

Cumulative Non-Organic (All User Average) LTV Curve (USD, Shopping)



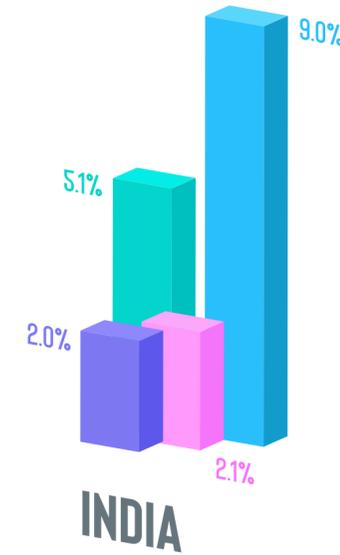
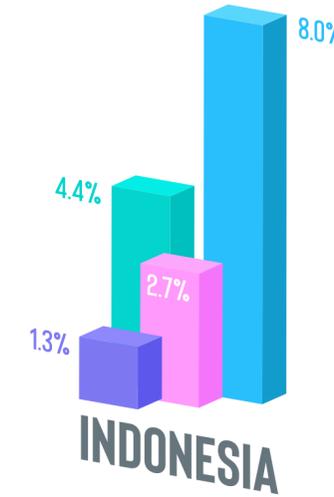
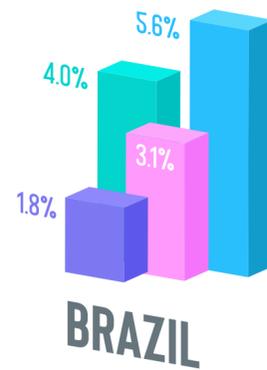
AMONG ALL USERS, ONLY 5-6% MAKE 1ST PURCHASE WITHIN A WEEK

Number of conversions jumps 70% from day 7 to 30

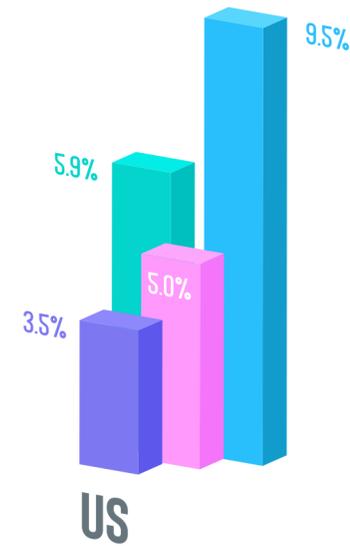
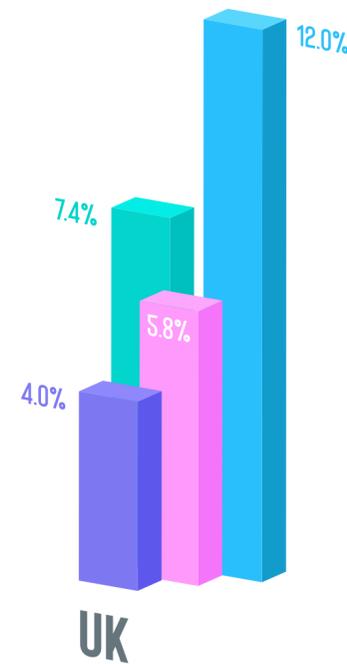
Q1 2018 LTV Benchmarks

SHOPPING

First Purchase Distribution Among Non-Organic Users (Cumulative, Shopping)



US & UK campaigns have 2.5x higher likelihood to reach users who will make their first purchase within 24 hours of an install

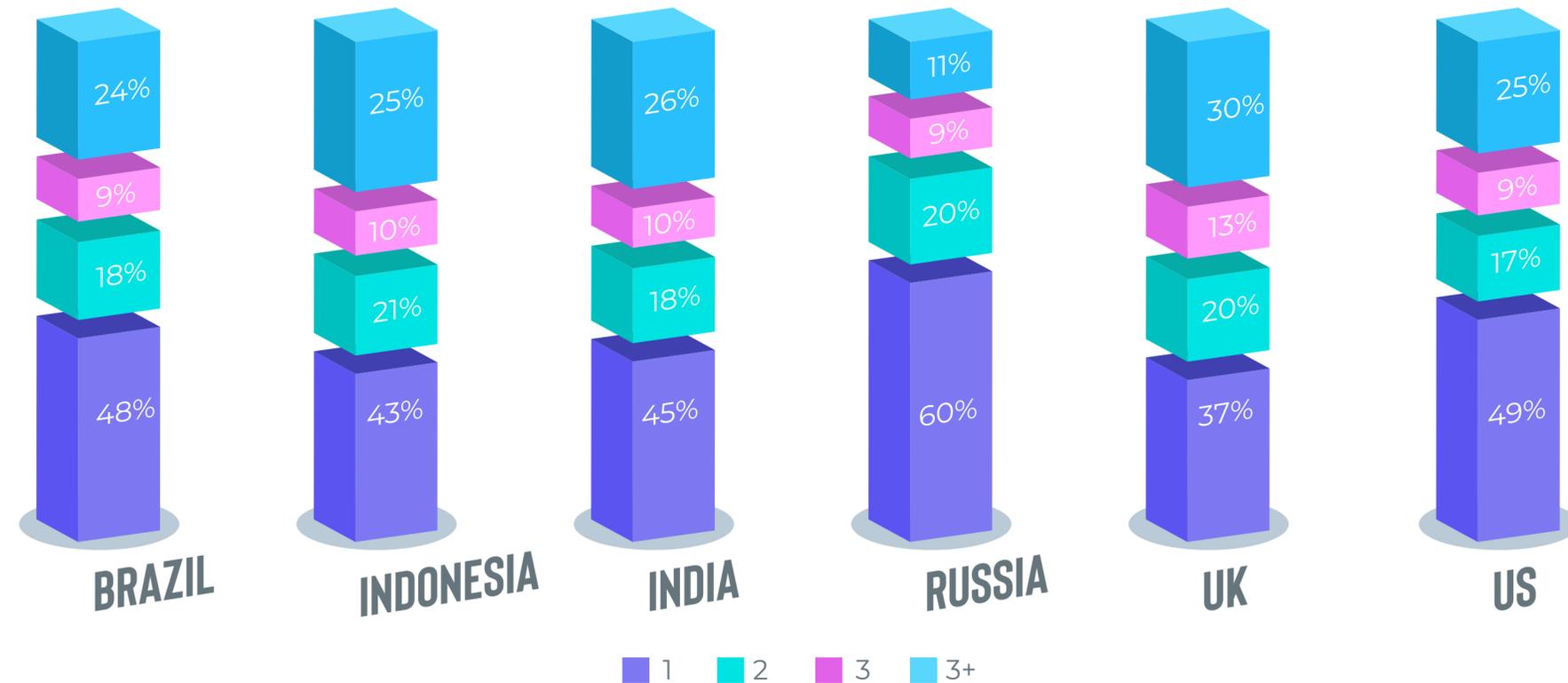


- Day 1
- Day 3
- Day 7
- Day 30

ROUGHLY 50% OF PAYING CONSUMERS ARE MULTI-PURCHASE SHOPPERS

The UK has the highest rate of multi-purchase users and the lowest rate of single-purchase users

Distribution of Purchases Per Paying Non-Organic User Within 90 Days (Shopping)



While most shoppers make more than one IAP within 90 days, most Russians make only one -- a 30% higher single-purchase rate than average. While 1 out of 4 shoppers make 3+ purchases, only 1 out of 9 Russian shoppers purchases more than 3 times.

KEY TAKEAWAYS

01

Focusing on iOS will increase revenue but Android cannot be ignored

Consumers who shop with iOS devices are far more active with 70% higher average revenue than Android. However, Android scale is far too large to ignore, and Android users are active shoppers as their share of paying consumers indicates — almost the same as iOS at 9.6%. By targeting high-end Android devices, marketers can increase the LTV from this platform.

02

Exploring the potential of running campaigns in the UK is highly recommended

The UK's performance is well above the average of other key markets when it comes to in-app shopping. The UK has the highest LTV, the highest share of paying users and the largest number of consumers making more than three purchases in 90 days.



03

Securing first purchase will help shopping apps boost revenue

Because almost 1 in 2 paying consumers become multi-purchase shoppers, focusing on generating the first conversion (e.g., with a significant discount offer on the first purchase) can propel active consumer shopping over time.

04

Timing re-engagement campaigns is vital for effective monetization

In Brazil, India and Indonesia, marketers should consider re-engaging users after day 7 and throughout the first 90 days. The US and UK, on the other hand, demonstrate a consistent revenue increase which can be further improved by re-engaging dormant users.

TRAVEL

GLOBAL BENCHMARKS

Q1 2018 LTV Benchmarks

A VIEW FROM ABOVE

\$29.42

180-Day LTV (Average Revenue Per User)

* Combines organic & non-organic traffic

9.6%

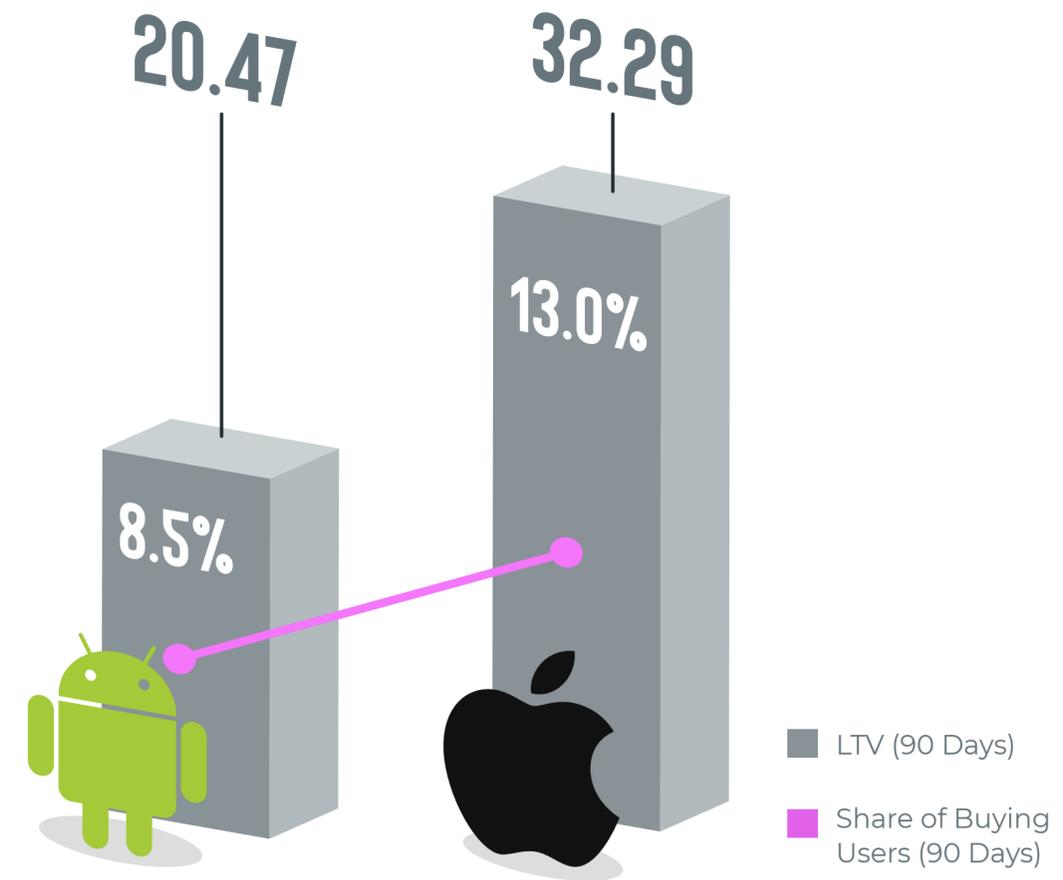
Share of Paying Users

* Combines organic & non-organic traffic

SHARE OF iOS TRAVELERS 50% HIGHER THAN ANDROID

A travel app also sees 60% higher LTV from an iOS user

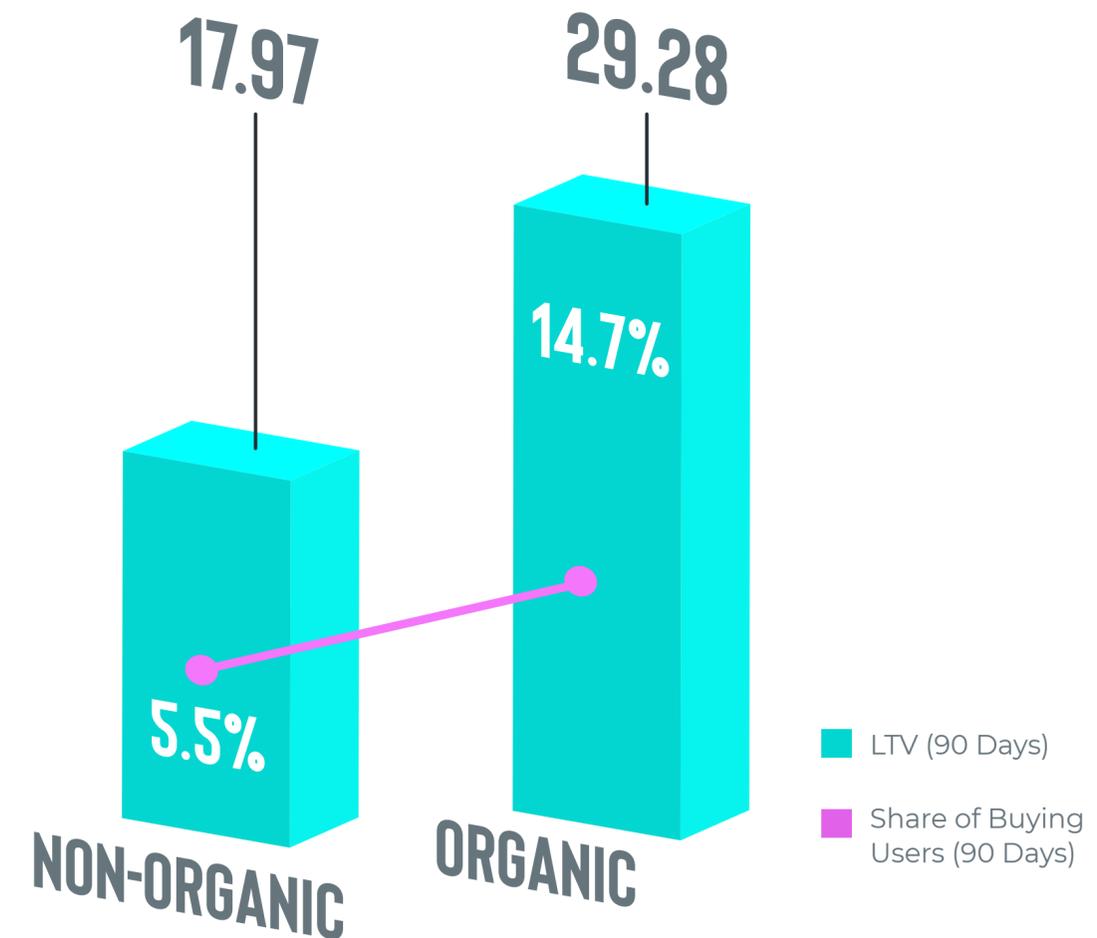
IAP Revenue Per User & Share of Buyers By Install Type (USD, Global, Travel)



ORGANIC USERS 2.5X MORE LIKELY TO BOOK

Their average revenue is also 60% higher

IAP Revenue Per User & Share of Buyers By Install Type (USD, Global, Travel)

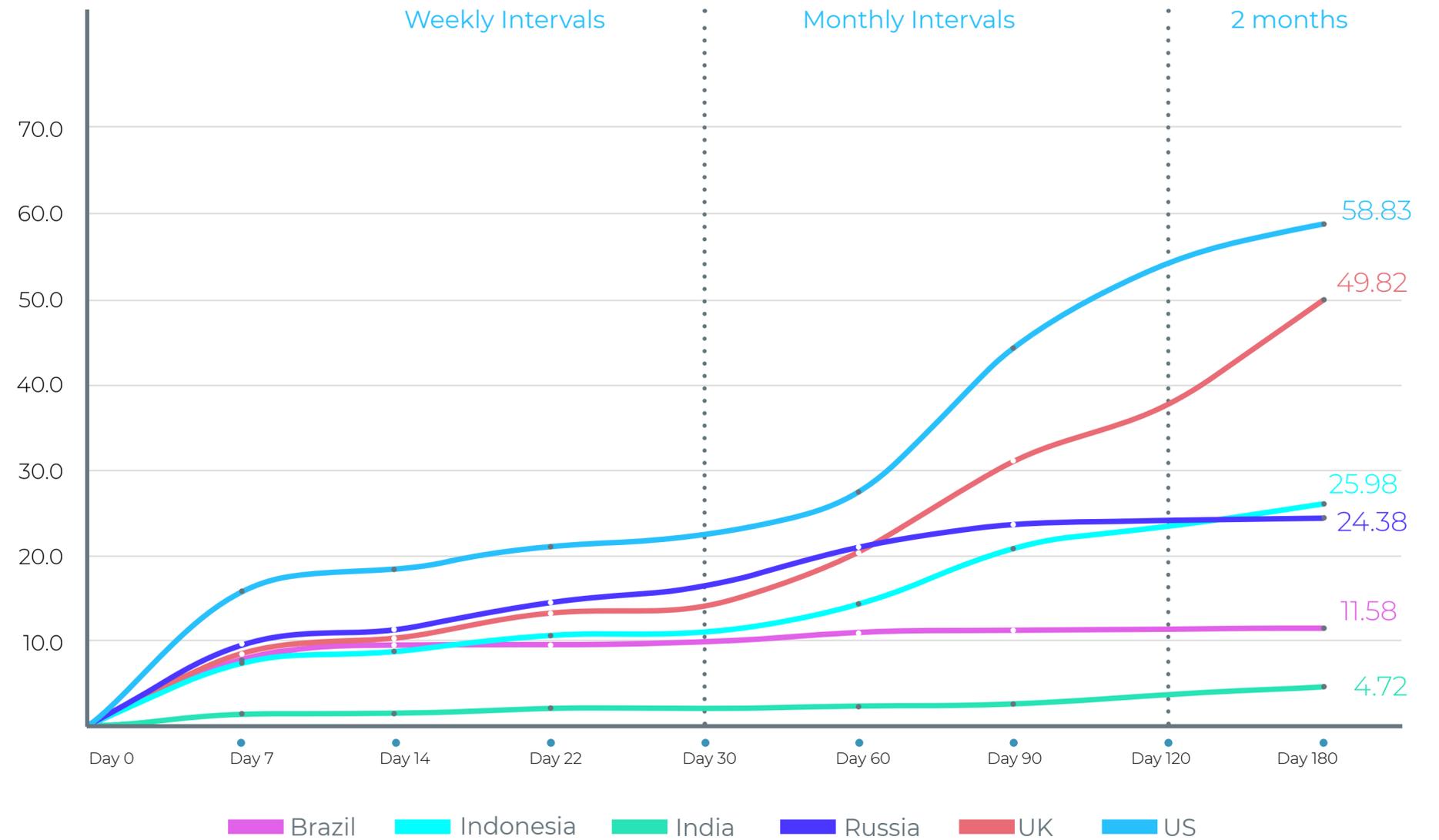




TWO DISTINCT GROUPS SHOW LONG-TERM REVENUE DIFFERS BY GEO

The LTV curve in the US, UK and Indonesia rises over time, while Russia, Brazil and India have little long-term revenue

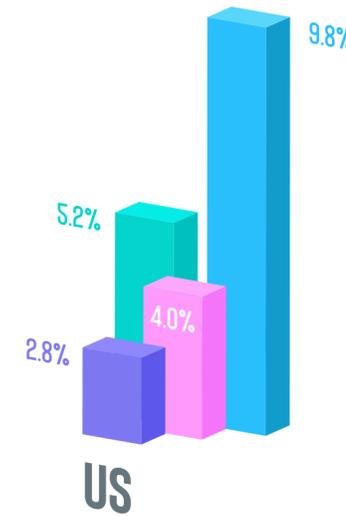
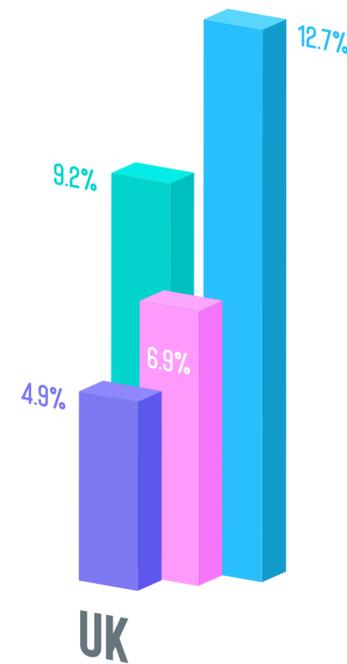
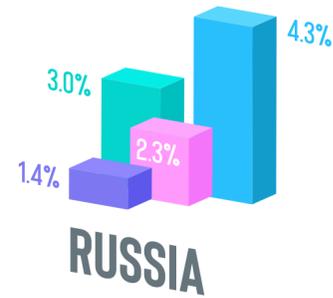
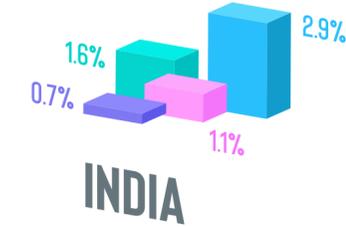
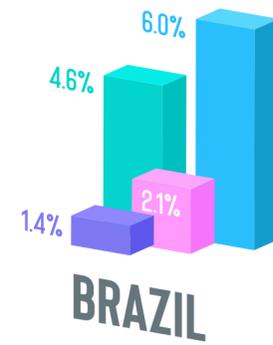
Cumulative Non-Organic Average User LTV Curve (USD, Travel)



THE US AND UK CONVERSION RATE IN A LEAGUE OF ITS OWN

Q1 2018 LTV Benchmarks

First-Purchase Distribution Among Non-Organic Users (Cumulative, Travel)



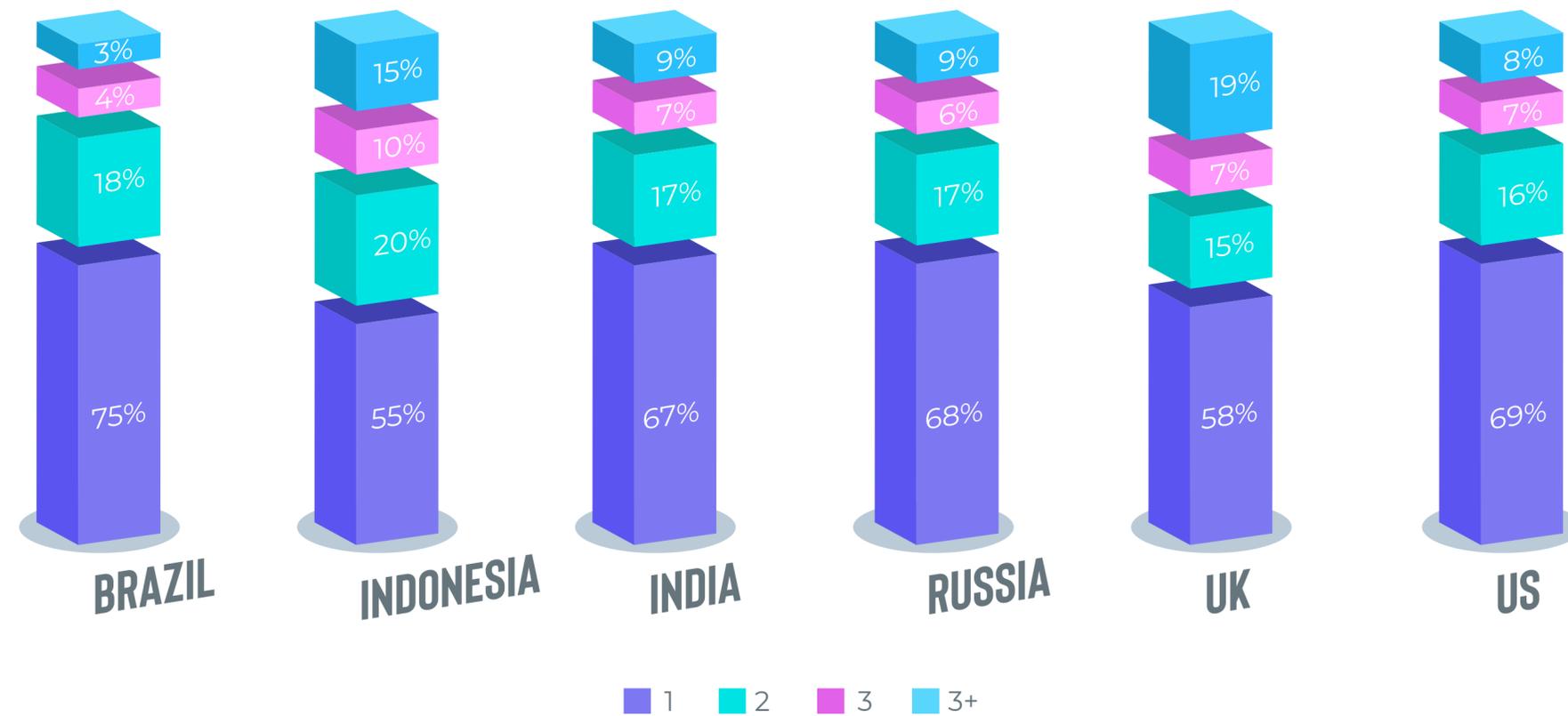
Day 1
Day 3
Day 7
Day 30

UK users' booking rate in the first day is 3x higher than other key markets (2.6x in the first week and 2.3x in the first month)

25%-45% OF PAYING USERS BOOK MORE THAN ONCE IN 90 DAYS

Nearly 1 in 5 users in the UK book at least 3 times

Distribution of Purchases Per Non-Organic User Within 90 Days (Travel)



KEY TAKEAWAYS

01

Running more campaigns will increase the number of organic installs

A travel app generates significant value from an organic user. There is always a lift in organic installs when running campaigns (although at a much lower rate than 2-3 years ago). This increase in organic installs as a result of marketing activity will also boost LTV.

02

Relying more heavily on data will improve the value of marketing-driven installs

The significant gap between organic and non-organic performance can narrow when travel app marketers become more adept in the use of data – just like gaming app marketers.

03

Re-engaging users after Day 7 can improve the value a business generates from a consumer

After the initial surge driven by users installing an app to make a booking, it is important to re-engage travel app users throughout the relatively longer consumer journey in this vertical. For example, in the US it would be beneficial to run re-engagement campaigns between days 7-14 and 22-30.

04

Focusing on mature markets will have an immediate effect on LTV

As developed countries, the US and the UK are in a league of their own in travel. This is especially true in the UK with an outstanding ~13% conversion rate after 30 days, and nearly 1 in 5 users making more than three bookings in 90 days – almost double the average in key markets. Indonesia is also a pleasant surprise with impressive growth in revenue between days 30-180.

A FINAL WORD

In an app ecosystem dominated by the freemium model, apps must focus heavily on post-install revenue optimization. To maximize revenue among the few users who actually become paying customers, revenue events should be measured granularly and connected to attribution data. This helps pinpoint which channels, networks, campaigns, ad groups, and even creatives delivered revenue-producing users and which did not.

But it all starts with measuring lifetime value, the cornerstone of app marketing. With this metric, you can identify, engage and re-engage the audiences that make your app profitable and help you consistently grow over time.

APPENDIX

MEASURING AD REVENUE



Q1 2018 LTV Benchmarks

WHY

Smart mobile marketers optimize their activity based on their LTV and ROI performance.

In-app advertising revenue is often a major source of mobile app revenue.

By measuring and attributing in-app ad revenue alongside app download, subscription and in-app purchase revenues, marketers can better measure and optimize their media to drive LTV and ROI.

HOW

Mobile marketers use the AppsFlyer platform to measure their performance across the entire user journey, and across over 4k partner integrations.

AppsFlyer measures marketing campaign cost, attributes app installs and all of their mobile revenues, reporting the real-time ROI of every dollar spent.

APPSFLYER AD REVENUE SETUP

01

Trigger an [AppsFlyer SDK event](#) when an ad is viewed

```

31  @Override
32  public void onLoggingImpression(Ad ad) {
33      // Call back function when an impression is being logged.
34      AppsFlyerLib.getInstance().trackEvent(context, "fb_ad_viewed", null);
35  }
36  });
    
```



```

18  - (void)interstitialAdWillLogImpression:(FBInterstitialAd *)interstitialAd
19  {
20      // Call back function when an impression is being logged
21      [[AppsFlyerTracker sharedTracker] trackEvent:@"fb_ad_viewed" withValues:nil];
22  }
    
```

02

In the AppsFlyer dashboard, setup your Facebook Audience Network integration.

Facebook Configuration

Integration Parameters | In App Events | Permissions | Ad Revenue

Event Source ⁱ facebook_ad_viewed — Select your in-app ad viewed event from the dropdown

Ad Revenue Event ⁱ facebook_ad_viewed_monetized

Enable Facebook Ad Revenue — Check the "Enable Facebook Ad Revenue" box

Facebook Ad Revenue ⁱ Connect — Click "Connect" and log into Facebook

Cancel | Save & Close — Click "Save & Close"

APPSFLYER AD REVENUE ANALYSIS

Q1 2018 LTV Benchmarks

ad_viewed_monetized				
ad_viewed_m... (Unique Users)	ad_viewed_m... (Event Counter)	ad_viewed_m... (Revenue)	ad_viewed_m... (Events/Installs)	ad_viewed_m... (eCPA)
N/A	100,661	\$203.21	936.21%	N/A
2,574	37,611	\$186.62	1,246.64%	\$0.08
1,422	19,529	\$80.87	1,019.79%	N/A
1,206	12,640	\$30.00	822.92%	N/A
676	4,825	\$6.31	404.78%	\$0.05
591	6,080	\$11.18	756.22%	N/A
450	3,358	\$3.44	489.50%	\$0.04
530	5,612	\$11.26	860.74%	\$0.04

Facebook ad revenue is automatically reported in the AppsFlyer dashboard.

Understand Your Ad Revenue Performance

- Ad revenue data is automatically included in all AppsFlyer LTV and ROI calculations.
- Ad revenue events and revenues are reported in the Events, Activity, Overview, Cohort and Pivot dashboards, as well as via MasterAPI.
- Measure your mobile revenues by type to understand the relative value of mobile ad revenues vs other revenue sources.

4 Ways to Improve Your LTV and ROI

- ✔ Partner with mobile ad revenue providers that deliver high revenues.
- ✔ Determine how mobile ad revenue activity impacts your user engagement or retention, and optimize accordingly.
- ✔ Optimize your paid media efforts by LTV or ROI to drive high value users.
- ✔ Create an audience of users with high LTV or ROI to improve your lookalike targeting. Retarget lapsed, but promising users to improve their LTV.

ABOUT APPSFLYER



AppsFlyer's technology is found on 98 percent of the world's smartphones, making it the global leader in mobile attribution and marketing analytics. AppsFlyer's platform processes over one trillion mobile actions every month, empowering app marketers and developers to maximize their marketing ROI. With Facebook, Google, Twitter, Pinterest, Snap Inc., Tencent and 4,000+ other integrated partners, and clients including HBO, Playtika, Waze, Alibaba, Skyscanner, Activision and 12,000+ leading brands worldwide, AppsFlyer supports marketers from 14 offices across the globe as the go-to resource for the most successful mobile apps in the world.

To learn more, visit www.appsflyer.com.