Chapter 10. Model Three: Free Mobile App

A third business model that's increasingly common is the mobile app. If you're selling a mobile application for money, you have a fairly straightforward sales funnel—you promote the application, and people pay you for it. But when you derive your revenue from other sources, such as in-game content, paying for features, or advertising, the model gets more complex. If, after looking at the business model flipbook in Chapter 7, you've decided you're running a mobile app business, then this is what analytics look like for you.

The mobile application has emerged as a startup business model with the rise of iPhone and Android smartphone ecosystems. Apple's application model is tightly regimented, with the company controlling what's allowed and reviewing submissions. Applications for the Android platform may be downloaded from the Android store or "side-loaded" from sources that aren't tightly controlled.

For Lean startups, an app store model[34] presents a challenge. Unlike web applications, where it's easy to do A/B testing and continuous deployment, mobile apps go through the app store gatekeeper—which limits the number of iterations a company can undergo, and hampers experimentation. Modern mobile apps are getting around the gatekeepers to some degree by feeding in online content without requiring an actual app upgrade, but this takes extra work to set up. Some developers advocate trying out the Android platform first because it's easier to push frequent updates to users. Once those developers have validated their MVP on Android, they move to Apple's more constrained deployment environment. Others choose a smaller, secondary market (like the Canadian App Store) and work the bugs out there first.

Mobile app developers make money within their applications in several ways:

Downloadable content (such as new maps or vehicles)

Tower Madness, a popular Tower Defense game for the iPhone, sells

additional map sets at a small cost.

Flair and customization of in-character appearance and gaming content (a pet, clothing for a player's avatar)

Blizzard sells non-combat enhancements like pets or vanity mounts.

Advantages (better weapons, upgrades, etc.)

Draw Something charges for colors that make drawing easier.

Saving time

A respawn rather than having to run a long distance, a strategy employed by many casual web-based MMOs.

Elimination of countdown timers

Topping up energy levels that would normally take a day to refresh, which *Please Stay Calm* uses.

Upselling to a paid version

Some applications constrain features. As of this writing, Evernote's mobile application doesn't allow offline synchronization of files unless a user has upgraded to the paid client, for example.

In-game ads

Some games include in-game advertising, where the player watches promotional content in return for credits in the in-game currency.

Consider a mobile game that makes money from in-game purchases and advertising. Users find the application in an app store, either by searching or because it's showcased due to popularity or as part of a list. They consider the application—consulting ratings, number of downloads, other titles, and written reviews—and ultimately download the application. Then they launch it and start playing.

The game has an in-game economy (gold coins) that can be used to buy weapons

or health more quickly than by simply playing the game. There's also a way to watch ads that pays gold coins. The company spends considerable time striking a balance between making it enjoyable for casual players (who don't want to pay) while still making a purchase attractive (so players pay a small amount). This is where the science of economics meets the psychology of game design.

The company cares about the following key metrics:

Downloads

How many people have downloaded the application, as well as related metrics such as app store placement, and ratings.

Customer acquisition cost (CAC)

How much it costs to get a user and to get a paying customer.

Launch rate

The percentage of people who download the app, actually launch it, and create an account.

Percent of active users/players

The percentage of users who've launched the application and use it on a daily and monthly basis: these are your daily active users (DAU) and monthly active users (MAU).

Percentage of users who pay

How many of your users ever pay for anything.

Time to first purchase

How long it takes after activation for a user to make a purchase.

Monthly average revenue per user (ARPU)

This is taken from both purchases and watched ads. Typically, this also includes application-specific information—such as which screens or items encourage the most purchases. Also look at your ARPPU, which is the

average revenue per *paying* user.

Ratings click-through

The percentage of users who put a rating or a review in an app store.

Virality

On average, how many other users a user invites.

Churn

How many customers have uninstalled the application, or haven't launched it in a certain time period.

Customer lifetime value

How much a user is worth from cradle to grave.

We've seen several of these metrics in the previous section on the SaaS business model, but there are some that differ significantly in a mobile app world.

Installation Volume

According to mobile analytics consultancy and developer Distimo, getting featured in an app store has a huge impact on app sales.[35] An app that's already in the top 100 and then gets featured will jump up an average of 42 places on the Android market, 27 places on the iPad App Store, and 15 places on the iPhone App Store.

For mobile developers, the dynamics of an app store matter more than almost anything else when it comes to achieving significant traction. Being showcased on the home page of Apple's App Store routinely yields a hundredfold increase in traffic.[36] Analytics firm Flurry estimates that in 2012, the top 25 applications in the iPhone App Store accounted for roughly 15% of all revenue, and the rest of the top 100 accounted for roughly 17%. Lenny Rachitsky, founder of Localmind, a social mobile location app that was part of Year One Labs, said, "Getting featured is the single biggest thing that ever happened to us. It even

matters what slot you're featured in on the App Store, which affects whether you appear above the fold or not."

Alexandre Pelletier-Normand, co-founder of Execution Labs, a game development accelerator, says that getting featured on Google Play is even more beneficial for revenue than being featured in Apple's App Store. "Getting featured on Google Play boosts your ranking, and the rankings in Google Play are quite static compared to the App Store. That means you'll rank higher for longer, which in turn means more revenue."

While this unfair advantage is gradually changing—revenues for less popular applications are growing overall—the facts are simple: if you want to make money, you need to be ranked highly in app stores, and getting featured helps a great deal.

Average Revenue Per User

Mobile app developers are constantly finding ingenious ways to monetize their applications. These developers focus on the average revenue per user (ARPU) on a monthly or lifetime basis. Many game developers instrument their applications heavily themselves, since there isn't a dominant, open way to collect data from applications easily.

If you're making a game, you don't just care about revenue. You're walking a fine line between the compelling content and addictive gameplay that makes things fun and the in-game purchases that bring in money. Avoiding the "money grab" that turns players off is hard: you need to keep users coming back and inviting their friends while still extracting a pound of flesh each month (or at least a few dollars!). As a result, in addition to ARPU, some metrics relate to playability (ensuring the game is neither too hard nor too easy, and that players don't get stuck) and player engagement.

ARPU is simply the revenue you've made, divided by the number of active users or players you have. If you inflate the number of active players to make yourself look good, you'll reduce the ARPU, so this metric forces you to draw a realistic line in the sand about what "engaged" means. Typically, ARPU is calculated on a monthly period.

For mobile games, you can measure customer lifetime value (CLV) by

calculating the averages of the money spent by every player post-churn. But because it will (hopefully!) take months or years for a player to leave you, it's easier to estimate the CLV in the way we did for a SaaS company.

Let's return to our example of a free mobile game that makes money from in-game purchases and ads. This month, it's had just over 12,300 downloads, and 96% of those people launch the app and connect to the company's servers. Of these, 30% become "engaged" players that use the application on three separate days.

Each engaged player generates, on average, $3.20 a month in revenue, from a mix of in-game purchases and advertising. This means that the current month's downloads will generate about $11,339 in revenue (though it may take time for the company to receive that revenue because of the app store's payment model).

Of the total players, 15% churn every month, which means the average player lifetime is 6.67 months (1/0.15). This in turn means that the company's monthly revenue is around $75,500. The player lifetime value is the ARPU multiplied by the player lifetime—in this case, $21.33. If the company knows the cost of acquiring an engaged player, it can also calculate the amount each player contributes to the bottom line, the return on investment in advertising efforts, and how long it takes to recover the investment made in acquiring an engaged user. Figure 10-1 shows how all these calculations are performed.

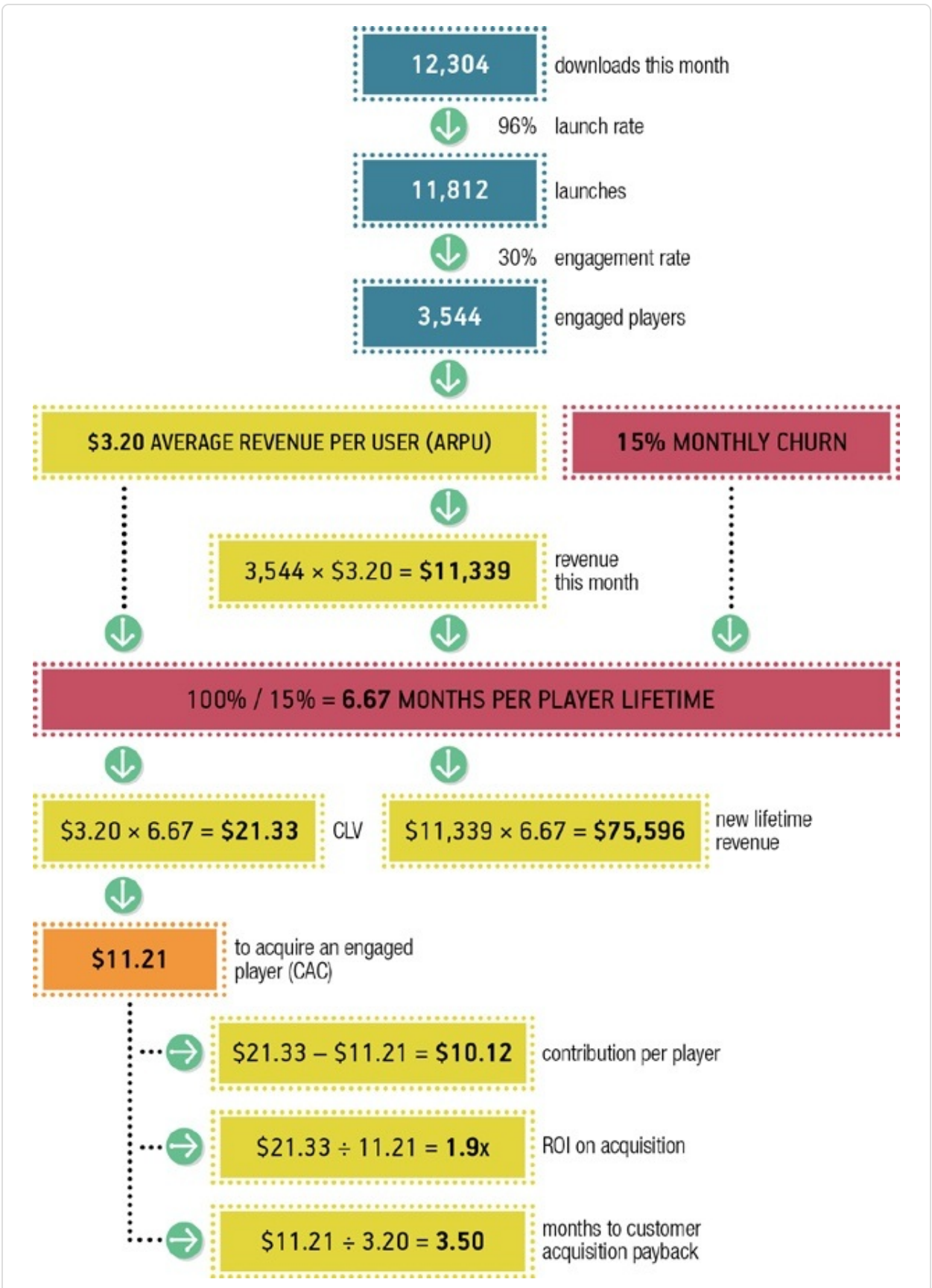
12,304
downloads this month
96% launch rate
11,812
launches
30% engagement rate
3,544
engaged players
$3.20 AVERAGE REVENUE PER USER (ARPU)
15% MONTHLY CHURN
3,544 × $3.20 = $11,339
revenue this month
100% / 15% = 6.67 MONTHS PER PLAYER LIFETIME
$3.20 × 6.67 = $21.33
CLV
$11,339 × 6.67 = $75,596
new lifetime revenue
$11.21
to acquire an engaged player (CAC)
$21.33 – $11.21 = $10.12
contribution per player
$21.33 ÷ 11.21 = 1.9x
ROI on acquisition
$11.21 ÷ 3.20 = 3.50
months to customer acquisition payback

Figure 10-1. How to calculate all the essential metrics for a mobile app

The business model for the company hinges on these numbers. The company needs to increase download volumes, increase the engagement rate, maximize ARPU, minimize churn, and improve virality so customer acquisition costs go down. There's a natural tension between these goals—for example, making the game more enjoyable so people don't churn versus extracting money so ARPU is high—and this is where the art and finesse of game design comes in.

Percentage of Users Who Pay

There are some players who simply won't spend money in a game. And there are others (often referred to as "whales") who will spend literally *thousands* of dollars to gain the upper hand in a game they love. Knowing the difference between the two—and finding ways to make more users purchase things within the application—is the key to a successfully monetized free mobile application.

The most basic metric here is the percentage of users who pay something. Beyond this basic metric, you want to do segmentation and cohort analysis. If, for example, you know that a particular ad campaign brought in users who were more likely to make in-game purchases, you should be running more campaigns like that. You also need to be sophisticated in terms of what you market to users in-game: whales are more likely to make bigger in-app purchases, whereas users who haven't bought anything yet should be offered something inexpensive to start.

Measuring your ARPU gives you a good idea of how much paying users are spending. Convincing an already-paying user to pay more may not have a significant impact on your ARPU because most users won't pay, but it could absolutely move the needle on revenue in a significant way. Treat your *paying* users as a separate customer base and track their behavior, churn, and revenue separately from your nonpaying ones.

Churn

We've looked at churn in detail in Chapter 9. It's also a critical metric for mobile

applications. Keith Katz, co-founder of Execution Labs, a game development accelerator, and former Vice President of Monetization for OpenFeint, recommends looking at churn in specific time periods:

> *Track churn at 1 day, 1 week, and 1 month, because users leave at different times for different reasons. After one day it could be you have a lousy tutorial or just aren't hooking users. After a week it could be that your game isn't "deep enough," and after a month it could be poor update planning.*

Knowing when users churn gives you an indication of why they're churning and what you can try in order to keep them longer.

Visualizing the Mobile App Business

Figure 10-2 represents a user's flow through a mobile app business, along with the key metrics at each stage.

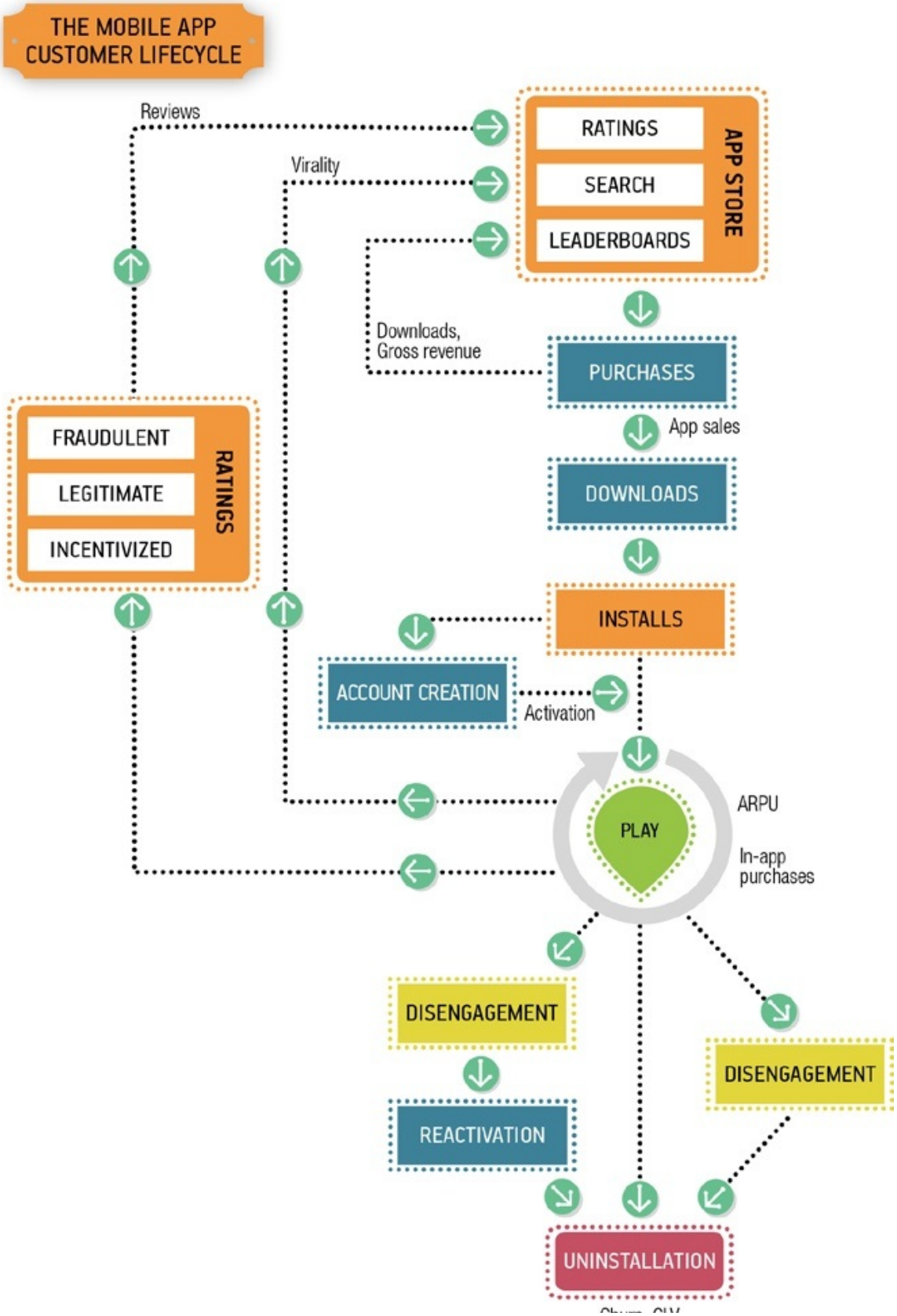
THE MOBILE APP CUSTOMER LIFECYCLE
Reviews
Virality
RATINGS
SEARCH
LEADERBOARDS
APP STORE
Downloads, Gross revenue
PURCHASES
App sales
DOWNLOADS
FRAUDULENT
LEGITIMATE
INCENTIVIZED
RATINGS
INSTALLS
ACCOUNT CREATION
Activation
ARPU
PLAY
In-app purchases
DISENGAGEMENT
DISENGAGEMENT
REACTIVATION
UNINSTALLATION

Figure 10-2. Everything in a mobile app feeds back to the app store

German game developer Wooga is a master of metrics. The company is building a formula for successful social games that's completely driven by numbers. The company has over 32 million active monthly users from 231 countries, and over 7 million daily users. In a 2012 *Wired* article, founder Jens Begemann shared his company's approach.[37]

Wooga iterates constantly and releases updates on a weekly basis. It picks a key metric to focus on for an update—retention, for example—and identifies a number of tactics to try to improve it. When the update is released, it measures the changes rigorously and adapts from there. All told, Jens reviews 128 data points on a daily basis. If he sees something that doesn't make sense to him, he sends that to the product teams. It's up to the product people at that point to home in on the number in question and figure out what's going on, and how to make it better.

Wrinkles: In-App Monetization Versus Advertising

One of the factors that can complicate this model is the monetization approach. As we've seen, there are a wide variety of ways in which companies monetize their mobile applications. Some advertising consists of in-app videos; in other cases, it can be a "promoted download" where the user is encouraged to try out another app. When this happens, the user leaves the current application—which can increase churn, reduce engagement, and hamper the experience.

Game developers have to find ways to carefully integrate monetization, particularly when it doesn't fit the theme of the game, and must measure the impact of these revenue sources on their players' subsequent behavior.

Key Takeaways

- Mobile apps make their money in a variety of ways.
- Most of the money comes from a small number of users; these should be

segmented and analyzed as a distinct group. The key metric is average revenue per user, but you may also track the average revenue per *paying* user, since these "whales" are so distinct.

Mobile businesses are a lot like SaaS businesses: both try to engage users, extract money from them repeatedly, and reduce churn. You can jump back to Chapter 9 to learn more about SaaS metrics, or you can skip to Chapter 14 to find out how the stage of your business drives the metrics that matter to you.

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[34] To be clear: Apple has an App Store, and may have claim to the name. But there are plenty of stores from which users can purchase an application for a platform like Android or Kindle. Even the Wii and Salesforce's App Exchange share the dynamics we're talking about here. So when we refer to "an app store," we mean any marketplace for new products created by the maker of a platform. When we're referring to Apple's, we'll capitalize it.

[35] *http://www.distimo.com/wp-content/uploads/2012/01/Distimo-Publication-January-2012.pdf*

[36] *http://blog.flurry.com/bid/88014/The-Great-Distribution-of-Wealth-Across-iOS-and-Android-Apps*

[37] *http://www.wired.co.uk/magazine/archive/2012/01/features/test-test-test?page=all*