

June 2012
FPF Mobile Apps Study



ABOUT THE FUTURE OF PRIVACY FORUM

The Future of Privacy Forum (FPF) is a Washington, DC-based think tank that seeks to advance responsible data practices. The forum is led by Internet privacy experts Jules Polonetsky and Christopher Wolf and includes an advisory board comprised of leading figures from industry, academia, law and advocacy groups.

FPF hosts **ApplicationPrivacy.org** that aims to provide application developers with the tools and resources necessary to implement responsible information collection and use practices. The site includes links to privacy policy generators and our recently released “Best Practices for Mobile Application Developers Report,” created jointly with the Center for Democracy and Technology.

Research for the June 2012 FPF Mobile Apps Study was led by FPF Legal & Policy Fellow Lia Sheena, and assisted by legal interns John Alford and Rachel Coffin.



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I. INTRODUCTION

Smartphones have become ubiquitous, with sixty-five percent of the U.S. population, or over 200 million people, estimated to have a smartphone or tablet by 2015.¹ In this interconnected world, the rapidly growing market of apps presents users and society with many benefits, but it also raises privacy concerns. Mobile apps can capture a slew of highly personal information including location, address books, photos, texts, emails, social network relationships, and calendar items. Past studies² have shown that there is substantial room for improvement in providing users with notice and transparency with regard to how apps collect, store, and use their data.

The FTC's Mobile Apps For Kids report, released in February 2012, revealed that many kids' apps still lack privacy policies.³ The California Attorney General's office has indicated that it will enforce California's Online Privacy Protection Act against app developers. Under the act, commercial operators of a web site or online service that collects personal identifying information from California residents must have a clearly posted privacy policy that details the type of information collected, how that information will be shared, and how consumers may review and make changes to their stored information.⁴ To this end, in February 2012, the California Attorney General struck an agreement with six major app store platforms, setting forth requirements related to app privacy.⁵

Recently, Facebook also joined this agreement and is now requiring that all apps in its App Center have privacy policies.⁶ This week the Commerce Department's National Telecommunications and Information Administration will convene a multi-stakeholder effort intended to develop a code of conduct for mobile application transparency.⁷

This study concludes that app developers have begun to heed the call for privacy policies. The percentage of apps with privacy policies has grown rapidly since the previous FPF study conducted in September 2011.

II. DESCRIPTION

The purpose of this study was to examine whether the most popular apps⁸ provided users with access to a privacy policy. While simply providing a privacy policy is not a panacea for privacy concerns, developers that do so have indicated that they have at least taken a minimum step to document their data use and have accepted legal responsibility for these commitments. With a privacy policy, consumers have an opportunity to investigate how their data will be used, before deciding to buy or download an app. Given the continued explosive growth in the number of mobile apps downloaded by consumers, FPF decided to expand the scope of our previous app studies to examine 150 of the most popular mobile apps across three platforms: iOS App Store, Google Play,⁹ and Kindle Fire Appstore. The top twenty-five free and twenty-five paid apps across all three platforms were the focus of this study. The previous FPF study in September 2011 looked at the top ten free and ten paid apps across three platforms: iOS App Store, Google Android Market, and Blackberry (RIM). Future studies will look at Microsoft, Facebook, and third party app stores.

Apple recently announced that roughly 25 billion apps have been downloaded¹⁰ and over 20 billion apps have been downloaded from Google.¹¹ Both stores continue to grow; each currently averaging over 1 billion application downloads a month.¹² Newer to the app ecosystem is Amazon's Kindle Fire Appstore, which has recently announced that the store contains over 31,000 apps after its first year.¹³ Top apps in these three app stores were thoroughly examined for a privacy policy. We looked at how many free and paid apps provided privacy policies on the app store listing page ("listing page") or access from within the app ("in-app" access). If access to a privacy policy via a hyperlink was not found on the listing page or from within the app, researchers then searched the web for an applicable privacy policy on the developer's website that covered mobile apps.

¹ http://news.cnet.com/8301-13506_3-20095949-17/in-stat-majority-in-u.s-to-have-smartphones-tablets-by-2015/

² FTC Mobile Apps Report, "Mobile Apps for Kids: Current Privacy Disclosures are Disappointing," available at http://www.ftc.gov/os/2012/02/120216mobile_apps_kids.pdf, Future of Privacy Forum September 2011 Mobile Apps Survey, available at <http://www.futureofprivacy.org/2011/12/19/fpf-survey-finds-free-mobile-apps-better-than-paid-on-privacy-policies/>, Future of Privacy Forum May 2011 Mobile Apps Survey, available at <http://www.futureofprivacy.org/2011/05/12/fpf-finds-nearly-three-quarters-of-most-downloaded-mobile-apps-lack-a-privacy-policy/>, Wall Street Journal Article, "Your Apps are Watching you," available at <http://online.wsj.com/article/SB10001424052748704694004576020083703574602.html>

³ FTC Mobile Kids' App Report, "Mobile Apps for Kids: Current Privacy Disclosures are Disappointing," available at http://www.ftc.gov/os/2012/02/120216mobile_apps_kids.pdf

⁴ Cal. Bus. & Prof. Code §§ 22575-22579

⁵ http://news.cnet.com/8301-30977_3-57383255-10347072/california-ag-kamala-harris-on-app-privacy-deal-podcast/

⁶ <http://articles.latimes.com/2012/jun/22/business/la-fi-facebook-ag-20120622>

⁷ <http://www.ntia.doc.gov/other-publication/2012/july-12-2012-privacy-multistakeholder-meeting-details> "The objectives of the July 12, 2012 meeting are to: 1) promote discussion among stakeholders concerning mobile app transparency by employing a structured, open process; and 2) provide a venue for stakeholders to agree on the schedule and format of future meetings."

⁸ According to various app platform metrics. See Methodology Section on page 6

⁹ Google Play was previously referred to as Google Marketplace

¹⁰ <http://www.apple.com/pr/library/2012/03/05Apples-App-Store-Downloads-Top-25-Billion.html>

¹¹ <http://www.engadget.com/2012/06/27/google-play-hits-600000-apps/>

¹² <http://techcrunch.com/2012/05/07/google-play-about-to-pass-15-billion-downloads-ppsht-it-did-that-weeks-ago/>

¹³ <http://gigaom.com/mobile/kindle-fire-helps-amazon-appstore-hits-31000-apps-in-first-year/>

III. THE STUDY RESULTS

A. Percentage of Top Apps that have a Privacy Policy

Table 1 sets forth the total percentage of all 150 apps examined with a privacy policy (61.3%) and provides a breakdown between the free and paid apps across three platforms: iOS App Store, Google Play, and Kindle Fire Appstore. As the numbers indicate, more privacy policies were found in the seventy-five free apps examined (69.3%) than in the seventy-five paid apps (53.3%). This is not surprising as free apps are more likely to have been required by an ad network to disclose tracking practices and is consistent with past FPF surveys.

Table 1

	% of All Apps with a Privacy Policy	% of Free Apps with a Privacy Policy	% of Paid Apps with a Privacy Policy
June 2012	61.3%	69.3%	53.3%

B. Percentage of Apps that have a Privacy Policy in Each App Store

The following tables reflect the percentage of total apps that provide some form of access to a privacy policy, i.e. an applicable privacy policy was found on the app listing page, in-app, or on the developer's website.

Table 2

June 2012 Study – % of Top Apps that have a Privacy Policy		
	Free Apps	Paid Apps
iOS – App Store	84%	64%
Android – Google Play	76%	48%
Kindle Fire – Kindle Appstore	48%	48%
All Platforms	69.3%	53.3%

Table 3

Sept 2011 Study – % of Top Apps that have a Privacy Policy ¹⁴		
	Free Apps	Paid Apps
iOS – App Store	40%	60%
Android – Google Play	70%	30%

Compared to the September 2011 FPF Mobile Apps Survey, there is significant improvement across both the iOS App Store and Android Google Play Store over the last 8 months. The percentage of free apps with some form of access to a privacy policy has doubled on the iOS App Store platform, **from 40% to 84%**. The percentage of free apps with a privacy policy on the Google Play platform also improved, **from 70% to 76%**.

The percentages of paid apps offering access to a privacy policy are not as substantial, but there is still marked improvement within the Android Google Play Store. The percentage of paid apps with some form of access to a privacy policy increased from 30% to 48% on the Google Play platform. The iOS App Store percentage for paid apps increased by 4%. Although Amazon's Kindle Fire Appstore is new to the game, nearly half of both the free and paid apps provide access to a privacy policy.

¹⁴ The previous study in September 2011 looked at the top ten free and ten paid apps across three platforms: iOS App Store, Google Android Market, and BlackBerry (RIM).

C. Percentage of Apps with Access to Privacy Policy at the App Store Listing Page

Table 4

% of Top Apps with Access to Privacy Policy at App Listing Page		
	Free Apps	Paid Apps
iOS – App Store	48%	28%
Android – Google Play	20%	12%
Kindle Fire – Kindle Appstore	0%	0%
All Platforms	22.7%	13.3%

FPF expanded the study to examine whether the privacy policy is accessible at the app store listing page. In February 2012, the California Attorney General announced an agreement with major app platform providers. As part of this agreement, the app store companies agreed to create “either (a) an optional data field for a hyperlink to the app’s privacy policy or a statement describing the app’s privacy practices or (b) an optional data field for the text of the app’s privacy policy or a statement describing the app’s privacy practices”¹⁵ at the app install page in order to make it easier for consumers to find and review an app’s privacy policy before downloading it.¹⁶

Table 4 illustrates the percentage of apps evaluated in some of the platforms that have already responded to the California Attorney General’s call by providing accessibility to privacy information prior to install at the app store listing page. Access to a privacy policy at the listing page (via hyperlink or other form of access) is important because it allows consumers to understand how an app will use information before making the decision to purchase and/or install the app.

As Table 4 reflects, 48% of the free apps and 28% of paid apps in the iOS App Store have a privacy policy directly accessible on the listing page. 20% of free apps and 12% of paid apps on Google Play provide access to a privacy policy on the listing page. Amazon’s Kindle Fire Appstore, having

only been available since March 2011,¹⁷ expects to provide app developers with the capability of providing a link in an upcoming release in time to comply with the California agreement.

As evidenced by Tables 1-4 above, app developers are making significant improvements toward complying with California law by posting privacy policies. With the deadline approaching for the app platforms to reconvene with the California Attorney General to evaluate compliance with California law, substantial progress will still be required.¹⁸ However, all of the platforms who joined the California Attorney General’s agreement have agreed to implement its requirements in the upcoming months.

D. Percentage of Apps with In-App Access to Privacy Policy

Tables 5 and 6 reflect the percentage of apps with in-app access to a privacy policy. In-app access means a user can obtain information regarding the use, collection, and sharing of information right from the app itself or via a link from within the app.

Table 5

June 2012 Study – % of Apps with In-App Access to Privacy Policy		
	Free Apps	Paid Apps
iOS – App Store	60%	44%
Android – Google Play	64%	24%
Kindle Fire – Kindle Appstore	20%	28%
All Platforms	48%	32%

Table 6

Sept 2011 Study – % of Top Apps with In-App Access to Privacy Policy		
	Free Apps	Paid Apps
iOS- App Store	40%	40%
Android- Google Play	50%	10%

¹⁵ <http://oag.ca.gov/news/press-releases/attorney-general-kamala-d-harris-secures-global-agreement-strengthen-privacy> CA AG Mobile Apps Market Companies “must provide a way for users to report non-compliance” and “implement a process for responding to reported instances of non-compliance.”

¹⁶ Additionally, the agreement requires the app store companies to provide users a way to report to the store when an app is not complying with the terms of service.

¹⁷ <http://techcrunch.com/2011/03/22/amazon-android-app-store-3/>

¹⁸ <http://oag.ca.gov/news/press-releases/attorney-general-kamala-d-harris-secures-global-agreement-strengthen-privacy>

The FPF study revealed that of the top twenty-five free apps in the iOS App Store, Google Play, and Kindle Fire Appstore, approximately **48%** made the privacy policy accessible in the app itself or via a web link from the app. There has been significant improvement across all platforms over the past eight months. The free apps again show a greater improvement with the iOS App Store **growing by 20%** and the Google Play Store **growing by 14%**. The paid apps with in-app access to the privacy policy have also improved, with the iOS App Store improving by **4%** and the Google Play Store improving by **14%**.

E. Percentage of Apps that have a Privacy Policy only on the Developer's Website

Table 7 below illustrates the number of apps that have a privacy policy on the developer's website, where access to a privacy policy was not found on the listing page or from within the app.¹⁹ For these apps, consumers would have to hunt the web in order to find the applicable privacy – sometimes having to search for the identity of the app's corporate parent to find the necessary information. Still, the information could be found and these apps have ensured that they are legally accountable for their practices.

Table 7

Apps that have privacy policy only on the website (not available at listing page and/or in-app)		
	Free Apps	Paid Apps
# of Apps without access to a Privacy Policy on the listing page and/or in-app	36/75	50/75
# of Apps with a Privacy Policy only on the developer's website	13/36 = 36.1%	14/50 = 28%

F. Number of Apps that ask for Permission to Access Location that have a Privacy Policy

App platforms directly inform consumers when apps request location. The Android device displays a request for GPS or "fine" location²⁰ in the Google Play permissions screen prior to install; and iOS apps display a pop-up opt-in consent mechanism the first time a user accesses an app.²¹ But it is particularly important for apps that collect precise location to have a privacy policy to explain why the app is accessing location, whether it shares location information with third parties, and how long it keeps the data. FPF examined whether the apps that accessed precise location data had a privacy policy.²²

Table 8

Android – Google Play: Apps that Access Precise Location that have a Privacy Policy		
	Free Apps	Paid Apps
# of Apps that Access Location	7/25 ²³	7/25 ²⁴
with Privacy Policy	6/7	4/7

Table 9

iOS – App Store: Apps that Access Precise Location that have a Privacy Policy		
	Free Apps	Paid Apps
# of Apps that Access Location	8/25 ²⁵	4/25 ²⁶
with Privacy Policy	7/8	3/4

As the above tables reflect, twelve out of the fifty apps surveyed on the iOS App Store platform requested precise location information and ten out of those twelve had privacy policies. Fourteen out of the fifty apps surveyed on the Google Play platform requested precise location information and ten out of those fourteen had privacy policies. The study revealed that almost all of the leading apps requesting precise location data did have a privacy policy in place, but found that some very well-known apps did not.

¹⁹ Where the privacy policy clearly indicated that the policy was meant to cover only the website and made no reference to mobile applications or other "services," credit was not given towards having an applicable privacy policy. See Exhibit 1 for further details on which websites were not deemed adequate.

²⁰ Google Play also separates location into two categories, coarse (network-based, e.g. Cell-ID, Wi-Fi positioning) and fine (e.g. GPS). Table 8 reflects only those apps using fine location because coarse location is not as accurate or precise. Nevertheless, it should be noted that there are eight apps using only coarse location, and of those eight, five have a privacy policy available. The five apps with privacy policies were TuneIn Radio Pro, Angry Birds Space, Skype, Angry Birds, and GO SMS Pro and the three that did not have policies were Cut the Rope, Fruit Ninja, and Fruit Ninja Free.

²¹ The Kindle Fire does not contain a GPS system. However, it should be noted that some apps in the Kindle Fire Appstore use location using Wi-Fi. http://www.readwriteweb.com/archives/skyhook_brings_location-based_services_to_the_kindle.php

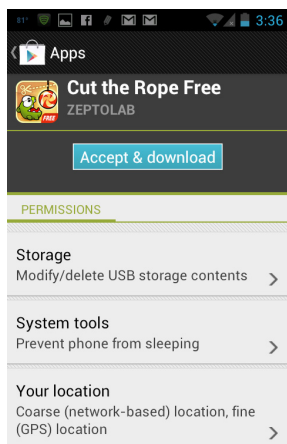
²² While FPF did not fully examine content of the privacy policy, a comprehensive privacy policy would elaborate on how and why location data is used and the length of time it is linked to the user's identifier. Precise location data can be considered sensitive personal information, particularly when maintained over time and/or combined with other user data.

²³ The Google Play Free apps with a privacy policy are: Facebook, Instagram, Twitter, WhatsApp Messenger, and Weather Channel. The app that did not have a privacy policy is: Cut the Rope.

²⁴ The Google Play Paid apps with a privacy policy are: Beautiful Widgets, SoundHound, WeatherBug Elite, and Shazam Encore. The apps that did not have a privacy policy are: Camera ZOOM FX, Star Chart, and Smart Tools.

²⁵ The iOS App Store free apps with a privacy policy are: The Weather Channel, Google Search, Google Earth, Shazam, Movies by Flixster with Rotten Tomatoes, Bump, and Groupon. The app that did not have a privacy policy is: Fruit Ninja Lite.

²⁶ The iOS App Store paid apps with a privacy policy are: MotionX GPS Drive, and I Am T-Pain 2.0. The app that did not have a privacy policy is: Camera+.



Top Google Play apps that collected location but that did not provide an accessible privacy policy included Cut the Rope,²⁷ Camera ZOOM FX, Star Chart, and Smart Tools. Top iOS apps missing policies were Fruit Ninja Lite and Camera+.

It should be noted that FPF reached out to these app developers to confirm whether they had an accessible

privacy policy and inquired about their location data use practices. In response, Camera ZOOM FX's app developer, AndroidSlide disclosed that "location data is only used if the user switches this option on to allow them to record GPS data with the photos taken in the app. This is fairly standard for all camera apps" and that, "no location information is shared." We recognize that some apps are accessing location simply to provide users with a useful service and that others may be providing the data to ad networks to provide geographically targeted advertising. But without a privacy policy, users have no way of knowing whether a record of their precise whereabouts is maintained over time or shared with third parties.

Star Chart's app developer, Escapist Games, indicated that they had a privacy policy. However, FPF did not credit them for having a privacy policy in the study because there was no link to it from the Google Play or iOS app store, from the app itself or from their website home page.²⁸ The privacy policy, which they sent to us and advised is available via a link from the Windows app store, did indicate that they do not share location information.

G. Easy To Read Notice

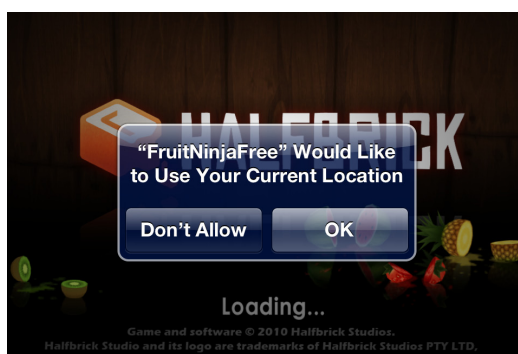
A small number of apps have started to include a short form notice - a method of enhanced notice using a limited number of characters to convey key data collection and use practices to the user.²⁹ A hyperlink to the full detailed privacy policy is usually provided within the short form notice. Short form notice can be better for consumers because it is easier and quicker to read than the entire privacy policy, especially on a small device, such as a smart phone. In this study, only six apps across all three platforms used a short form notice accessible from within the app. All six apps have the same developer, Zynga.³⁰



Zynga's Short Notice on Mobile Privacy

We access and use:

- Technical info like MAC Address, IP Address and Device ID (automatic)
- geo-location (with your permission)
- Profile info (if you connect with a social network like



²⁷ Note that Cut the Rope's developer on Android, ZeptoLab, has a privacy policy that is only applicable to their website and makes no mention of other services or use of location data.

²⁸ Website last viewed on July 5, 2012: <http://www.escapistgames.com/>

²⁹ <http://www.ftc.gov/privacy/glbact/glboutline.pdf>

³⁰ The Zynga apps are: Words With Friends (free and paid versions), Draw Something (free and paid versions), and Scramble With Friends (only the free version was analyzed in this study).

IV. METHODOLOGY

In June 2012, FPF researchers selected twenty-five free and twenty-five paid apps from each of the three app store platforms: iOS App Store, Google Play, and the Kindle Appstore. Each app was downloaded from the respective store. Researchers examined the app listing page for a hyperlink to the privacy policy, installed the apps, and searched within each app to determine whether there was in-app access to a privacy policy.

The fifty apps examined through the iOS App Store were downloaded on an iPhone 3GS and were selected based on the top apps of all time released by Apple on March 3, 2012.³¹ The fifty apps analyzed on the Google Play store were downloaded on an Android Samsung Nexus S device. FPF selected the top twenty-five non-Google³² free and paid apps from the store on June 5, 2012. The fifty apps surveyed on the Kindle Appstore, downloaded on a Kindle Fire, were based on the store's top free and paid apps on June 5, 2012.

In this study, once the app was downloaded, researchers determined if there was any access to the privacy policy within the app itself. If a privacy policy was found at the listing page in the app store, or within the app itself, the app was credited with having a privacy policy. If the researcher did not find a privacy policy at the listing page or within the app itself, a search was conducted to determine whether the developer had a website and whether the website had an applicable privacy policy. If the app developer's website had a privacy policy that only made reference to the website and did not make any mention of other "services," FPF did not give credit for having a privacy policy.

FPF researchers note additional points regarding the methodology. Although the apps were downloaded, the apps themselves were not tested for whether they were complying with the privacy policies, terms of use, or notification practices.

V. RESOURCES

Future of Privacy Forum Application Privacy Site

FPF's website lists readily available privacy forward resources and tools for app developers interested in preserving their users' privacy. Resources are available for a range of platforms, including Facebook and other social networks, OS developers and manufacturers, third party app stores, operators such as AT&T, and Smart Grid and home platforms.

www.applicationprivacy.org

PrivacyChoice Mobile Resources

PrivacyChoice provides guidance on how to build an app privacy policy for app developers including resources, tools and code.

www.privacychoice.org

TRUSTe Mobile Privacy Solutions

TRUSTe is a privacy solutions provider offering several privacy services across many channels, including mobile applications and privacy policy generators.

www.truste.com

Mobile Marketing Association Mobile Application Privacy Policy Framework

MMA's privacy guidelines for app developers provide best practices and sample language for privacy policies.

www.mmaglobal.com/bestpractice

IPC Ontario Privacy By Design

IPC Ontario provides guidance and resources surrounding the privacy by design approach.

www.ipc.on.ca/english/Privacy/Introduction-to-PbD/

³¹ <http://www.macstories.net/news/apple-reveals-new-all-time-top-apps-following-25-billion-downloads/>

³² Excluded were apps developed by Google that were listed in the Google Play store to make the study more consistent (as we did not examine Apple apps on iOS and Amazon apps on Kindle Fire). Also excluded were three paid apps that required users to "root" their device: Titanium Backup Pro Key, ROM Manager, Root Explorer (File Manager).

EXHIBIT 1: FREE APPS

No.	Name of App	Developer	Is there access to a Privacy Policy or link on the App Store Listing Page?	Is there In-App access to a Privacy Policy?	If No Access from Listing page or In-App Access, is there a Privacy Policy on the developer's website?	Privacy Policy URL
APPLE APP STORE						
1	Facebook	Facebook, Inc.	no	yes	n/a	
2	Pandora Radio	Pandora Media, Inc.	no	yes*	n/a	www.pandora.com/privacy
3	Words with Friends Free	Zynga	yes	yes	n/a	company.zynga.com/about/privacy-center/privacy-policy
4	Skype	Skype Software S.a.r.l.	yes*	no	n/a	www.skype.com/intl/en-us/legal/privacy/general/
5	The Weather Channel	The Weather Channel Interactive	yes*	yes	n/a	www.weather.com/common/home/privacy.html
6	Google Search	Google, Inc.	yes*	yes	n/a	m.google.com/privacy
7	Google Earth	Google, Inc.	yes*	yes	n/a	m.google.com/privacy
8	Angry Birds Free	Rovio Mobile Ltd.	yes*	yes	n/a	www.rovio.com/privacy
9	Shazam	Shazam Entertainment Ltd.	yes	yes	n/a	
10	Netflix	Netflix, Inc.	yes*	no	n/a	account.netflix.com/PrivacyPolicy
11	Paper Toss	Backflip Studios	no	no	yes	www.backflipstudios.com/support/privacy-policy-3
12	Twitter	Twitter, Inc.	no	yes	n/a	
13	Movies by Flixter with Rotten Tomatoes	Flixter	no	yes	n/a	
14	Bump	Bump Technologies, Inc.	no	yes	n/a	
15	PAC-MAN Lite	Namco Networks America Inc.	no	no	yes	namcobandaigames.com/company/privacy
16	Flighlight.	John Haney	no	no	no	
17	Unblock Me FREE	Kiragames Co., Ltd.	no	no	no	
18	Temple Run	Imangi Studios, LLC	no	no	no	
19	Instagram	Burbn, Inc.	no	yes	n/a	
20	Touch Hockey: FS5	FlipSide5, Inc.	no	no	yes	www.flipside5.com/company/privacy/
21	Angry Birds Lite	Clickgamer.com	yes*	yes	n/a	www.rovio.com/privacy
22	ESPN ScoreCenter	ESPN Inc.	yes*	yes	n/a	
23	Fruit Ninja Lite	Halfbrick Studios	no	no	no	
24	Groupon	Groupon, Inc.	yes*	no	n/a	www.groupon.com/privacy
25	Angry Birds Rio Free	Rovio Mobile Ltd.	yes*	yes	n/a	www.rovio.com/privacy
			12/25 = 48%	15/25 = 60%	3/7 = 42.8%	
GOOGLE PLAY						
1	Facebook	Facebook	no	yes	n/a	
2	Pandora Internet Radio	Pandora	no	yes*	n/a	
3	Instagram	Instagram	no	yes	n/a	
4	100 Floors	Tobi Apps	no	no	no	
5	Temple Run	Imangi Studios	no	no	no	
6	Angry Birds Space	Rovio Mobile Ltd	yes*	yes*	n/a	www.rovio.com/privacy
7	Skype	Skype	no	no	yes	www.skype.com/intl/en-us/legal/privacy/general/
8	Twitter	Twitter, Inc.	no	yes	n/a	
9	Cut the Rope	ZeptoLab	no	no	no**	http://www.cuttherope.ie/privacy.html
10	Netflix	Netflix, Inc.	yes*	no	n/a	account.netflix.com/PrivacyPolicy
11	Slacker Radio	Slacker Inc.	no	no	yes	www.slacker.com/company/policies.jsp
12	Angry Birds	Rovio Mobile Ltd	yes*	yes*	n/a	www.rovio.com/privacy
13	Color Splash	Androidslide	no	no	no	
14	Kindle	AMZN Mobile LLC	no	yes*	n/a	www.amazon.com/gp/help/customer/display.html/ref=footer_privacy?ie=UTF8&nodeId=468496
15	Draw Something Free	OMGPOP	yes	yes	n/a	
16	Fruit Ninja Free	Halfbrick Studios	no	no	no	
17	Whatsapp Messenger	Whatsapp Inc.	no	yes	n/a	
18	Zedge	Zedge	no	yes	yes	www.zedge.net/android-www/?p=privacy-policy)
19	Lookout Security	Lookout Mobile Security	no	yes*	n/a	www.mylookout.com/m/privacy
20	Weather Channel	The Weather Channel	no	yes	n/a	
21	GO SMS Pro	Go Dev Team	no	yes	n/a	
22	Words with Friends Free	Zynga	yes*	yes	n/a	company.zynga.com/about/privacy-center/privacy-policy
23	Basketball Shoot	Runnergames	no	no	no	
24	Yahoo! Mail	Yahoo! Inc.	no	yes	n/a	
25	Tango Video Calls	Tango	no	yes*	n/a	www.tango.me/privacy-policy
			5/25 = 20%	16/25 = 64%	3/9 = 33.3%	

Exhibit 1: Free Apps (continued)

No.	Name of App	Developer	Is there access to a Privacy Policy or link on the App Store Listing Page?	Is there In-App access to a Privacy Policy?	If No Access from Listing page or In-App Access, is there a Privacy Policy on the developer's website?	Privacy Policy URL
KINDLE FIRE APPSTORE						
1	Spelling Bee	Socratica, LLC (via Amazon Digital Services, Inc. [ADS])	no	no	no	
2	Temple Run	Imangi Studios, LLC (via ADS)	no	no	no	
3	Fireworks Arcade	Big Duck Games LLC (via ADS)	no	no	no	
4	Scramble with Friends Free	Zynga Game Network (via ADS)	no	no	yes	company.zynga.com/about/privacy-center/privacy-policy
5	Magic Puzzles	Ximad, Inc. (via ADS)	no	no	yes	www.ximad.com/policy
6	Draw Something	Zynga Game Network (via ADS)	no	no	yes	company.zynga.com/about/privacy-center/privacy-policy
7	Netflix	Netflix, Inc. (via ADS)	no	no	yes	https://signup.netflix.com/PrivacyPolicy
8	Kaleidoscope Drawing Pad (Kindle Fire Edition)	Bejoy Mobile (via ADS)	no	no	no	
9	Monster Shooter	Gamelion Studios (via ADS)	no	no	no**	http://www.game-lion.com/privacy.php
10	Style Me Girl	Frenzoo (via ADS)	no	no	yes	megirl.com
11	Angry Birds Free	Rovio Entertainment Ltd. (via ADS)	no	yes*	n/a	www.rovio.com/privacy
12	Monster Pack	Kiwki, Inc (via ADS)	no	yes*	n/a	http://kiwiup.com/privacy.htm
13	Fruit Ninja Free	Halfbrick Studios Pty Ltd (via ADS)	no	no	no	
14	Word Search Fun	More Funner Software (via ADS)	no	no	no	
15	Solitaire	Mobility Ware (via ADS)	no	yes*	n/a	www.mobilityware.com/privacy.php
16	Calculator Plus Free (Kindle Fire Edition)	Digitalchemy, LLC (via ADS)	no	no	no	
17	Where's My Water Free	Disney (via ADS)	no	yes*	n/a	http://corporate.disney.go.com/corporate/pp.html
18	Deer Hunter Reloaded	Glu Mobile, Inc. (via ADS)	no	no	yes	www.glu.com/privacy
19	Virtual Makeover	Mary Kay, Inc. (via ADS)	no	no	no**	www.marykay.com/privacystatement.aspx
20	Bubble Blaster	SkitApps (via ADS)	no	no	no	
21	Mood Scanner	Mister Borken (via ADS)	no	no	no	
22	Angry Birds Seasons Free	Rovio Entertainment Ltd. (via ADS)	no	yes*	n/a	www.rovio.com/privacy
23	Let's Bowl 2	SideBUMP Studios (via ADS)	no	no	no	
24	Baby Adopter	x2Line.com LLC (via ADS)	no	no	no	
25	Jewels	MHGames (via Amazon)	no	no	yes	www.mhgames.org/privacypolicy/
			0/25 = 0%	5/25 = 20%	7/20 = 35%	
TOTALS						
	*Hyperlink is provided, which redirects to privacy policy via web browser page					
	**Privacy policy did not cover mobile apps					
	Note: A question was considered not applicable when the full text of a privacy policy was provided within the permissions page or in app.					
	Note: some of these apps might have different developers on different platforms.					

EXHIBIT 2: PAID APPS

No.	Name of App	Developer	Is there access to a Privacy Policy or link on the App Store Listing Page?	Is there In-App access to a Privacy Policy?	If No Access from Listing page or In-App Access, is there a Privacy Policy on the developer's website?	Privacy Policy URL
APPLE APP STORE						
1	Angry Birds	Clickgamer.com	yes*	yes*	n/a	www.rovio.com/privacy
2	Fruit Ninja	Halfbrick Studios	no	no	no	
3	Doodle Jump	Lima Sky	no	no	no	
4	Cut the Rope	Chillingo Ltd. (acquired by Electronic Arts in 2010)	no	yes*	n/a	tos.ea.com/legalapp/WEBPRIVACY/US/en/PC/
5	Angry Birds Seasons	Rovio Mobile Ltd.	yes*	yes*	n/a	www.rovio.com/privacy
6	Words with Friends	Zynga Mobile	yes	yes*	n/a	company.zynga.com/about/privacy-center/privacy-policy
7	Tiny Wings	Andreas Illiger	no	no	no	
8	Angry Birds Rio	Rovio Mobile Ltd.	yes*	yes*	n/a	www.rovio.com/privacy
9	Pocket God	Bolt Creative	no	no	no**	www.boltcreative.com/privacy-policy/
10	Camera+	tap tap tap LLC	no	no	no	
11	The Moron Test	DistinctDev, Inc.	no	no	no	
12	Plants vs. Zombies	PopCap (note: this is a trademark owned by Electronic Arts)	no	yes*	n/a	tos.ea.com/legalapp/WEBPRIVACY/US/en/PC/
13	Skee-Ball	Freeverse, Inc.	no	no	yes	www.ngmoco.com/privacy.php
14	The Game of Life	Electronic Arts	yes*	no	n/a	www.ea.com/privacy-policy
15	Scrabble	Electronic Arts	yes*	yes*	n/a	tos.ea.com/legalapp/WEBPRIVACY/US/en/PC/
16	Monopoly	Electronic Arts	yes*	yes*	n/a	tos.ea.com/legalapp/WEBPRIVACY/US/en/PC/
17	FatBooth	Pivi & Co.	no	yes*	n/a	www.piviandco.com/privacy_policy.html
18	WhatsApp Messenger	WhatsApp Inc.	no	yes*	n/a	www.whatsapp.com/legal/#Privacy
19	UNO	Gameloft	no	no	no**	www.gameloft.com/privacy-notice/
20	Color Splash	Pocket Pixels Inc.	no	no	yes	http://getsatisfaction.com/corp/website/privacy-policy
21	The Sims 3	Electronic Arts	no	yes*	n/a	tos.ea.com/legalapp/WEBPRIVACY/US/en/PC/
22	Flight Control	Firemint Pty Ltd	no	no	no	
23	MotionX GPS Drive	Fullpower Technologies, Inc.	no	no	yes	www.motionx.com/home/privacy-policy/
24	Where's Waldo? The Fantastic Journey	Ludia	no	no	no**	http://www.ludia.com/en/privacy.php
25	I am T-Pain 2.0	Smule, Inc.	no	no	yes	www.smule.com/privacy
			7/25 = 28%	11/25 = 44%	4/13 = 30.8%	
GOOGLE PLAY						
1	Cut the Rope	ZeptoLab	no	no	no**	www.zeptolab.com/pp.htm
2	Beautiful Widgets	LevelUp Studio	no	no	yes	levelupstudio.com/privacy-policy
3	Draw Something	OMGPOP	yes*	yes*	n/a	company.zynga.com/about/privacy-center/privacy-policy
4	SwiftKey X Keyboard	Touchtype Ltd.	yes*	yes*	n/a	www.swiftkey.net/privacy
5	Angry Birds Space Premium	Rovio Mobile Ltd.	yes*	yes*	n/a	www.rovio.com/privacy
6	Where's My Water?	Disney	no	yes*	n/a	corporate.disney.go.com/corporate/pp.html
7	Rebuild	Sarah Northway	no	no	no	
8	Poweramp Full Version Unlocker	MAX MP (MSR Ltd.)	no	no	no	
9	Minecraft - Pocket Edition	Mojang	no	no	yes	www.minecraft.net/terms

Exhibit 2: Paid Apps (continued)

No.	Name of App	Developer	Is there access to a Privacy Policy or link on the App Store Listing Page?	Is there In-App access to a Privacy Policy?	If No Access from Listing page or In-App Access, is there a Privacy Policy on the developer's website?	Privacy Policy URL
GOOGLE PLAY						
10	Osmos HD	Hemisphere Games	no	no	no	
11	Camera ZOOM FX	AndroidSlide	no	no	no	
12	TuneIn Radio Pro	TuneIn	no	yes*	n/a	tunein.com/policies/privacy/
13	Tapatalk Forum App	Quoord Systems Limited	no	no	yes	tapatalk.com/privacy.php
14	SoundHound	SoundHound Inc.	no	no	yes	www.soundhound.com/index.php?action=s.privacy_policy
15	Fruit Ninja	Halfbrick Studios	no	no	no	
16	Cogs	Lazy 8 Studios	no	no	no	
17	Paper Camera	JFDP Labs	no	no	no	
18	WeatherBug Elite	WeatherBug by Earth Networks	no	no	yes	weather.weatherbug.com/about-us/privacy-policy.html
19	Star Chart	Escapist Games Limited	no	no	no	
20	Smart Tools	Smart Tools Co.	no	no	no	
21	Logo Quiz Full	Meeyo	no	no	no	
22	Flick Golf!	Full Fat	no	no	no	
23	Doodle Jump	Gamehouse	no	no	yes	www.realnetworks.com/privacy-policy/index.aspx
24	Shazam Encore	Shazam Entertainment	no	yes	n/a	
25	N.O.V.A. 3 - Near Orbit	Gameloft	no	no	no**	www.gameloft.com/privacy-notice/
			3/25 = 12%	6/25 = 24%	6/19 = 31.6%	
KINDLE FIRE APPSTORE						
1	Angry Birds Space HD (Kindle Fire Edition)	Rovio Entertainment Ltd. (via ADS)	no	yes*	n/a	www.rovio.com/privacy
2	Cut the Rope	Zeptolabs (via ADS)	no	no	no**	www.zeptolab.com/pp.htm
3	The Logos Quiz (Kindle Fire Edition)	EdgeWay Software (via ADS)	no	no	no	
4	Where's My Water?	Disney (via ADS)	no	yes*	n/a	corporate.disney.go.com/corporate/pp.html
5	Angry Birds Rio (Ad-Free)	Rovio Entertainment Ltd. (via ADS)	no	yes*	n/a	www.rovio.com/privacy
6	Plants v. Zombies (Kindle Fire Edition)	PopCap Games, Inc. (via ADS)	no	no	yes	http://tos.ea.com/legalapp/WEBPRIVACY/US/en/PC/
7	Where's Waldo Now? (Kindle Fire Edition)	Gameloft (via ADS)	no	no	no**	www.gameloft.com/privacy-notice/
8	Cut the Rope: Experiments	Zeptolabs (via ADS)	no	no	no**	www.zeptolab.com/pp.htm
9	SCRABBLE (Kindle Fire Edition)	Electronic Arts, Inc. (via ADS)	no	yes*	n/a	www.ea.com/privacy-policy
10	Dr. Jekyll and Mr. Hyde: The Strange Case - Extended Edition	ANUMAN INTERACTIVE (via ADS)	no	no	no	
11	UNO (Kindle Fire Edition)	Gameloft (via ADS)	no	no	no**	www.gameloft.com/privacy-notice/
12	Doodle Jump (Kindle Fire Edition)	Real Networks Inc (via ADS)	no	no	yes	www.realnetworks.com/privacy-policy/index.aspx
13	SpongeBob Tickler	Nickelodeon (via ADS)	no	no	yes	www.nick.com/info/privacy-policy.html
14	Phase 10	Magmic, Inc. (via ADS)	no	no	no**	http://magmic.com/privacy
15	Bloons TD 4	Digital Goldfish (via ADS)	no	no	no	
16	Rain App	Pixel Delight Studios (via ADS)	no	no	no	
17	Bejeweled 2	Electronic Arts, Inc. (via ADS)	no	yes*	n/a	www.ea.com/privacy-policy
18	Draw Something (Kindle Fire Edition)	OMGPOP (via ADS) [Zynga bought OMGPOP]	no	no	yes	https://company.zynga.com/about/privacy-center/privacy-policy

Exhibit 2: Paid Apps (continued)

No.	Name of App	Developer	Is there access to a Privacy Policy or link on the App Store Listing Page?	Is there In-App access to a Privacy Policy?	If No Access from Listing page or In-App Access, is there a Privacy Policy on the developer's website?	Privacy Policy URL
KINDLE FIRE APPSTORE						
19	Angry Birds Seasons (Ad-Free)	Rovio Entertainment Ltd. (via ADS)	no	yes*	n/a	www.rovio.com/privacy
20	The Moron Test	DistinctDev, Inc. (via ADS)	no	no	no	
21	Crossword	Teazel Limited (via ADS)	no	no	no	
22	The Mystery of Crimson Manor	Mediacity Games (via ADS)	no	no	no**	www.mediacitygames.com/j/privacy
23	Angry Birds (Ad-Free)	Rovio Entertainment Ltd. (via ADS)	no	yes*	n/a	www.rovio.com/privacy
24	Fruit Ninja	Halfbrick Studios Pty Ltd (via ADS)	no	no	no	
25	PAC-MAN	NAMCO BANDAI Games Inc. (via ADS)	no	no	yes	
			0/25 = 0%	7/25 = 28%	5/18 = 27.8%	
TOTALS			10/75 = 13.3%	24/75 = 32%	15/50 = 30%	
	*Hyperlink is provided, which redirects to privacy policy via web browser page					
	**Privacy policy did not cover mobile apps					
	Note: A question was considered not applicable when the full text of a privacy policy was provided within the permissions page or in app.					
	Note: some of these apps might have different developers on different platforms.					





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