

Mobile App Monetization: App Business Models in the Digital Era

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Abstract—It is a new world that we are living in: The “App Generation” has come. The term “app” is a shortening of the term “mobile application.” It refers to software applications designed to run on smartphones, tablet computers and other mobile devices. Most mobile apps are free, yet the increasing growth of apps has yielded a number of different revenue models to reap huge profits, such as the instant messaging app WhatsApp Messenger and the gaming app Puzzle & Dragons. Studies of these app business models (ABMs) have not been extensive in the literature. Abundant research has examined apps as a promotional tool in mobile advertising or mobile marketing, but not as a business model to generate revenue. The app business is an evolving market and research on ABMs is essential to reveal the contemporary situation and critical success factors in implementing and monetizing an ABM. This study aims to investigate whether there exist different ABMs and what factors app users consider important when they use and pay for an app. In-depth interviews and focus groups with apps users and app enterprises were carried out. We found app users have different attitudes about and evaluations of various types of apps. Users look more for utilitarian benefits such as aesthetic appeal and perceived ease of use in apps such as maps, news and fitness; while they focus more on hedonic benefits such as personal emotional attachment and achievement component in gaming and social media apps. The findings of this study will provide insight to practitioners in developing features and benefits to meet app users’ increasing expectations and requirements.

Index Terms—Mobile App, digital marketing, App business model, App monetization.

I. INTRODUCTION

“App,” an abbreviation of the term “mobile application,” refers to software applications designed to run on smartphones, tablet computers, and other personal mobile devices. Most mobile apps are free, yet increasingly apps are yielding huge revenue. The proliferation of mobile-app enterprises, along with that of smartphone usage, has dramatically changed traditional business models.

According to the research company Distimo, in 2012, there were more than 700,000 different apps available across both the Apple and Google platforms, producing a total market worth around US\$22 billion [1]. The research firm Gartner estimated that global app revenues reached US\$26 billion in 2013, up 44.4% from 2012’s US\$18 billion [2]. GungHo Online Entertainment, which launched the smartphone game “Puzzle & Dragons,” earned an average of US\$3.75 million per day in 2013 [3]. GungHo’s market

capital reached US\$15.1 billion in 2013, which was higher than that of Nikon, Fujitsu, All Nippon Airways, Sharp and Mitsubishi Motors [4]. WhatsApp Messenger, an app for an instant-messaging service, operated with 450 million active users worldwide. This popular app was acquired by Facebook for US\$19 billion, as announced in February 2014 [5]. The remarkable growth of mobile apps has spawned a number of different revenue models, yet research dedicated to these app business models (ABMs) is relatively scarce. Most apps are free, yet the in-app purchase business model is growing rapidly. The monetization of ABMs is increasingly visible, as demonstrated by WhatsApp, WeChat, Candy Crush, Puzzle & Dragons, etc. Practitioners continually seek answers for two questions: “How to run an app business? How to make profits from an app business?” One of the main challenges app enterprises have been facing is how to appeal to the expanding app-user segment, with their higher expectations, requirements and standards for using and patronizing apps. Practitioners are keen on understanding how ABMs can be implemented successfully and seek ways to monetize content under the growing in-app purchase business model, even as most apps are offered free of charge.

This study aims to contribute to the body of knowledge by investigating apps as a revenue-generating business model. A business model establishes how value is created for customers and how to capture value from customers in return. In other words, the monetary amount that the app user is willing to pay for the app’s benefits represents revenue to the ABM. Specifically, this study examines: 1) What ABMs exist in the current market; and 2) what factors app users consider important when they use and buy apps. This paper begins with a literature review, followed by a methodological overview. Finally, the findings and conclusion are presented.

II. LITERATURE REVIEW

Existing studies in the literature have been confined to mobile marketing [6] and mobile advertising [7], which mainly consider apps as a promotional tool instead of a business model. We find a literature gap, in that apps have seldom been studied as profit-making businesses, but as tools supporting advertising or affiliate marketing. ABMs have received scant attention in the literature, although this is seen as attractive business opportunity among practitioners. There are few studies examining ABMs with systematic analyses and categorization of models grounded in marketing theory, and how perceived value among app users affects the amount they pay for an app. Existing studies have been confined to: mobile-app privacy [8];

Manuscript received April 13, 2016; revised August 15, 2016.

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mobile-app stores, with comparisons between Google and Apple [9]; mobile advertising in terms of consumer attitudes [10]; perceptions and recall of advertisements on mobile devices [11]; the drivers of consumer acceptance of mobile advertising [12]; mobile marketing as marketing activity conducted through a ubiquitous network to which consumers are constantly connected using a personal mobile device [13]; and app usage in terms of context, such as location, time of day and variety of apps [14]. Studies focusing on app business are therefore needed and would be invaluable to academia and industry.

III. METHODOLOGY

This study adopted both secondary and primary research methodologies. We began with secondary data collection and data garnered from reports published by digital marketing agencies, online articles and news reports on app enterprises. Then we carried out primary research, holding two focus groups with 10 app users in total, and two in-depth interviews with the staff at Fingerprint Studio, a local Hong Kong app enterprise. Using content analysis, we identified key findings regarding the ABM context and the concurrent consumer behaviors of app users.

IV. FINDINGS AND DISCUSSION

A. App Stores, App Categories and App Usage

Apps are generally downloaded through app stores. Major app stores include Google Play, Apple App Store, Windows Phone Store, Amazon Appstore and BlackBerry World [15].

There are a variety of apps with different functions and usage purposes. News, entertainment, mapping, communication, education, fitness, shopping and travel are major app-store categories. Gaming is by far the most popular app category in terms of downloads, and generates the most revenue of all app types. Over 25% of global app revenues in 2014 was generated by the top 10 game apps in both Google Play and the iTunes App Store. Mobile game app revenues also accounted for 33% of the US\$77 billion total earned by all video game platforms [16]. Social networking is another important app function. Apps such as Twitter, WhatsApp and LINE have fundamentally changed the way people communicate and interact with one another. As interaction among people is switching to app-to-app rather than face-to-face, social-networking apps have become essential accessories that people cannot live without, exerting normative pressure on people to stay in touch with friends and follow closely what is going on in groups through apps. Social-networking apps are prevalent among users, who usually use social-networking apps more frequently than other apps [17]. Facebook was the most popular social-networking app in terms of the number of iPhone downloads across the world during the period between July 2010 and June 2011, while LINE, WeChat and Viber were more widespread in Asian countries such as China and South Korea [18]. Daily activities have also been incorporated into app activities, such as shopping, mapping and information-searching. This provides greater convenience and enhances the efficiency of carrying out

daily activities by reducing search and decision costs. Music apps have the highest increase in usage time and the highest app session length, because they are commonly used during commutes and downtime [19]. Smartphone health-and-fitness apps with integrated heart-rate monitors and fitness trackers are getting more common.

B. How Apps Monetize Business: App Business Models

Consumers have become increasingly reliant on apps due to faster network speeds (including 4G and eventually 5G), which allow for easier streaming of apps on personal mobile devices. It is predicted that the number of downloads will be over 268 billion and reach US\$77 billion in revenue, making manifest the flourishing business in apps [20].

This also manifests a lucrative business opportunity for companies entering the emerging app market, where penetration is still low and purchasing power is rising. Generally, developers have three avenues to monetize their apps: 1) paid apps, where users pay up front; 2) in-app purchases, whereby apps charge users to unlock extra features; and 3) the introduction of advertisements, which can be in the form of banners or videos, to name but two. Using these avenues for monetization, four business models have come about in the industry: **freemium**, **paid**, **paidmium**, and **in-app advertising**.

The word “freemium,” comprising the words “free” and “premium,” describes a business model that earns solely from in-app purchases (IAPs). Users make IAPs for extra benefits and value, such as additional functions, upgrade of an app for full content and services, and removal of advertisements popping up on the free version. Freemium models are common in games categories because no upfront download fee is charged, so as to entice a larger number of users. As illustrated in *Puzzles & Dragons*, in-app purchases allow users to purchase in-game gemstones (virtual game currency) for extending play time and taking lucky draws to get rare items. The three top-grossing freemium games—*Clash of Clans*, *Puzzles & Dragons*, and *Candy Crush Saga*—reported earnings of over US\$1.0 billion respectively in 2014 [21].

Paid apps earn from the purchase of the app itself. They directly charge users for downloading from app stores, and have with no in-app purchases. For example, *Minecraft: Pocket Edition*, a paid-app block-building game, made US\$1 million in revenue in Apple App Store alone on Christmas Day of 2013 [22]. The prices of paid apps varied across countries. From January 2012 to January 2014, the average prices were US\$0.99 to US\$1.99 in Australia, South Korea, Canada, Germany, the United States, the United Kingdom, France, Russia and China, while paid apps in Japan were relatively more expensive, priced at around US\$18 [23].

The paidmium model involves both paid downloads and in-app purchases for additional revenue. In 2013, it was estimated that 61% of paidmium app revenues were generated from paid downloads, and the remaining 39% from in-app purchases [24]. The paidmium model is found more commonly in apps such as maps and in the navigation and dictionary categories, with a wide range of prices up to US\$54.99 in June 2014 [25].

In-app advertising refers to apps on which advertisements periodically pop up. They are usually free for users to

download, and earn profits based on advertisement impressions and conversions. For instance, gaming apps may ask players to watch an advertisement in exchange for virtual game currency. Flappy Bird, a free app game which was downloaded over 50 million times, earned US\$50,000 per day on average through in-app advertising [26]. Generally speaking, the revenue generated by in-app advertising showed a growth of 56% from 2013 to 2014 [27].

C. Consumer Attitudes towards App Usage

In the focus group, we identified several attributes that were ranked important by app users. We found app users have different attitudes about and evaluations of various types of apps. For instance, regarding apps such as maps, news and fitness, users look more for utilitarian benefits, while for apps such as social media and gaming, users focus more on hedonic benefits. Therefore, we categorize apps into two categories: utilitarian and hedonic. Utilitarian perspectives include user interface/perceived ease of use and aesthetic appeal; hedonic perspectives include personal emotional attachment, an achievement component and social norms.

User interface refers to the flow of experience when users navigate an app. It involves the design of the app: whether performing tasks is user-friendly and convenient. It is essential to have clear and understandable instructions to give app users a good flow of experience. Aesthetic appeal may refer to the visual, musical and animation elements of the app. Users find apps that are aesthetically appealing give them more pleasure and enjoyment, thus leading to a higher probability of buying and using the app.

Due to the nature of some apps, especially gaming apps, users look for hedonic satisfaction, such as achievement and emotional attachment. They feel good when their skills in playing the game improve or when they beat a level in the game. Sometimes they become so personally involved and even addicted to a game that they check in with it frequently. Social norms are another critical factor. Some users download apps because of peer influence or recommendations from their friends. They feel they are isolated or disconnected from their friends if most people in their social group use the app but they do not.

We further elaborate on these attributes by identifying the following five benefits sought by app users:

- 1) Convenience: Apps can simplify daily life by providing conveniences such as alarms, maps, restaurant-searching and weather-checking. They enhance efficiency by reducing search and decision costs.
- 2) Communication: Instant-messaging apps are utilized to stay in touch with family and friends.
- 3) Social networking: People need to feel a sense of belonging and acceptance among their social groups. Apps for social and business networking are important for indicating that they are part of these groups and follow the behavior of other members.
- 4) Entertainment: Perceived entertainment affects the way consumers evaluate web or mobile products. Some apps are intrinsically fun to play and to participate in. This includes gaming and music-streaming, with entertainment benefits encompassing active play and hedonic value.

- 5) Value expression: Some consumers use apps to express their personal values and enhance their self-concepts. The dimension of such value-expression benefits can be linked to self-esteem or expression needs. This describes how app users seek to earn social recognition through, for instance, photo- and video-sharing.

V. CONCLUSION

Under the prevailing usage of smartphones and apps, various ABMs have emerged. Apps are no longer exploited only as promotional tools, but as business models for reaping profit. Primary and secondary data collection was done to examine what ABMs exist in the current market and what factors app users consider important when they use/buy apps. Through secondary research, this study depicts various ABMs in the market and concurrent trends in the industry. They include freemium, paid, paidmium and in-app advertising revenue-generating models. Our primary research involving focus groups and in-depth interviews with app users and app enterprises highlighted several vital factors which app users consider important when they decide to use and pay for apps. Depending on the nature of the apps, users look for various salient features. These can be categorized into extrinsic utilitarian and intrinsic hedonic perspectives.

Scrutinizing the contextual situation is an essential prerequisite for market entry. This study provides a handy reference for practitioners to understand various ABMs and customer attitudes towards app usage and buying. This study also lays a foundation for scholars to carry out future studies on the app industry. Questions such as what the antecedents of in-app purchase are, and what moderating factors determine the amount of money paid for apps, can be further investigated to extend ABM research.

ACKNOWLEDGMENT

This work was supported by College Research Grants and the School of Management Case Research Centre at Centennial College.

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