"The app market has been candy crushed": Observed and rationalized processes for selecting smartphone games ☆

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ABSTRACT

Industry estimates suggests that smartphone gaming – playing video games on smartphone device, accessed via the device's app market – accounts for a growing segment of the entire video game play market. Yet, very little is known about the processes by which smartphone users search for and download these gaming apps. Exploratory data combining behavioral observation with post-behavior talk aloud sessions found that users tended to (1) evaluate only one game, (2) spend little time evaluating that game before downloading it, and (3) based this decision on familiarity or price considerations (with both implicitly based on rating). Privacy concerns were rarely mentioned, and classic motivations for video gameplay (such as challenge, competition, and socialization) were not represented. These data suggest that smartphone gaming might be a qualitatively different experience in terms of its uses and effects than other forms of gaming and mobile entertainment.

1. Introduction

Research has predicted the success of mobile phone-based gaming as early as the mid-2000s [12,18] but it was until the global diffusion of 3G mobile technology that the mobile phone developed into a serious gaming platform [14]. Since then, mobile gaming on smartphones (mobile phones with the processing power necessary to receive data and render on-screen images and graphics) – or smartphone gaming – has developed into a major market. In the US alone, as much as 40 percent of all game content sales from 2012 – or $5.92 billion – has been attributed to smartphone gaming [8]. According to analyst *Think Gaming* [26], the title *Candy Crush Saga*, the top-grossing mobile game title in 2013 (*Candy Crush*) generates average of over $1 million in *daily* revenues for publisher King, with an active user base of around 8 million gamers for the Apple iOS in the US alone [7,26]. Such figures are comparable to blockbuster games in the console sector such as *Halo 2* or *Wii Party*, each selling around 8 million copies according to sales analyst *VGChartz.com*.

The smartphone gaming market – defined here as the available offer of video games played on smartphones – is an attractive one for gamers and developers alike, as both groups tend to favor simpler games that are not resource-heavy (both in terms of time and energy to play as well as economic resources, such as purchasing computing equipment; cf. MacInnes et al. [16]). For gamers, smartphone gaming serves as a readily-accessible form of entertainment though a device already well-integrated into their (increasingly mediated) lifestyles (cf. Wei [28]). This becomes crucial as a prime motivation for gaming in general (and possibly for mobile gaming, in particular) is for escape and distraction [22,30].

As smartphone gaming continues to grow, there is little empirical research examining how smartphone users engage the growing market in order to search for and eventually download these programs. To this end, the following paper uses a mixed-methodological approach to explore smartphone users' observed choices to download smartphone gaming, as well as the reasons given for those observed choices. As an exploratory study, the goal of the current paper is to highlight areas for further examination into the smartphone gaming app market.

2. Smartphone games as a unique market

Smartphone games are somewhat unique from other smartphone applications, or "apps", in that they do not have a discrete function for smartphone users – that is, they tend to be more entertainment-focused than task-focused apps (Authors, in press).

Data from Liu and Li [15] support this, suggesting that while perceived usefulness is a dominant predictor of the adoption of task-specific apps, the context of one's mobile phone usage (such as using a phone to pass time) was the best predictor of smartphone gaming adoption. Put another way, gaming apps are rarely the primary reason for an individual's smartphone adoption, yet as the quality of broadband connectivity as well as mobile device itself (display, interface and processing capabilities; cf. Browne and Anaud [3]), smartphone gaming appears to be a natural by-product of mobile technology – just as the computer game was a natural by-product of the advances in computer processing of the 1950s and early 1960s (cf. Bowman et al. [2]).

Perhaps one of the first truly mobile games (pre-smartphone) was the monochromatic Snake – a simple puzzle game in which players navigated a digital "snake" (a line of gray-shaded one-by-one phone pixels) around a series of on-screen obstacles, such as walls and boxes. Taneli Armanto, the game's developer, had a simple vision to "create a great game for a mobile phone" (as cited by Ozler [19]). The game, which was pre-installed with many Nokia-branded cell phones of the time, is estimated to have been installed to more than 350 million mobile phones, making it one of the most-played video games (regardless of genre or platform) of all-time.

From the humble Snake pre-installed games, smartphone games have since developed into a substantial new gaming market that is at once similar to but divergent from the previously-established video game markets [13,16]. Critical differences include: (a) the smartphone gaming market is largely a "casual" game market, it is (b) dominated by a "freemium" revenue model, and (c) it exclusively relies on a digital download distribution model. Each of these is discussed in detail below.

2.1. Mobile gaming as casual

The majority of smartphone games fit the category of the casual game – games meant to be played in short bursts, lacking finality and that encourage replay "ad nauseam" (Portnow, as cited by Sliwinski [24]), or games meant to be easy to learn (not requiring heavy time and skill investments on behalf of the player), but difficult to master (presenting an increasingly-difficult challenge to the player; Juul [11]). A recent report by industry magazine Gamasutra [17] reported the top 10 most downloaded and most revenue-generating mobile games of 2013 were all casual games (cf. Kim [14]). While the list represents a great diversity in the type of games played – from the color-matching *Candy Crush* (No. 1, King) to the fast-paced *Fruit Ninja* (No. 5, Halfbrick) to the brain teasers *Angry Birds* (No. 6, Rovio) and *4 Pics, 1 Word* (No. 9, Lotum) – in many ways, the diversity of this list represents a diversity in the casual game "genre" itself: games of various play-styles but with a common focus on short-term gameplay and constant user-system feedback (cf. Chiapello [5] and Kim [14]). This is not to say that all smartphone games are casual – exceptions such as the roleplaying title *The Bard's Tale* (a port of the 2005 PlayStation version of the same game; inXile, 2011) or the space opera *Galaxy on Fire 2* (ported from PC; Deep Silver, 2013) represent mobile games more aligned with the story-driven full-size games expected of consoles. However, such games tend to be the exception rather than the rule of the lion's share of the current mobile gaming market.

2.2. Mobile games as "freemiums"

The success of many mobile games has been attributed to a business model that well-established within video games: the "freemium" model [13]. In this model, companies usually release a basic version of a game that is free to play, encouraging players to either pay for in-game objects (such as better equipment, short-cuts or other performance enhancers) or to purchase game versions that adds further functions to the games (such as eliminating in-game advertising). Such a model is parallel to the shareware model of the 1990s, wherein developers such as id software (of *Wolfenstein 3D* and *Doom* fame) would encourage players to download and share early (re: shorter) versions of the game for free, but needed to purchase software keys in order to unlock the full game's levels and other objects. The aforementioned *Candy Crush* is an example of such a monetization strategy, with a daily generation of nearly $1 million in revenue vastly eclipsing even the most successful (in terms of revenue) paid mobile game title of 2013, *Minecraft Pocket Edition* (around $50K per day, according to industry news site Think Gaming). This is astonishing as nearly two-thirds of casual games – "freemium" or otherwise – are never played again after initial download, and nearly 98% of casual gamers never invest money in their games [4].

2.3. Digital delivery platform

Notably, one reason this "freemium" monetization strategy is employed – beyond the economic benefit – is due to the general functionality of the smartphone device itself. As a constantly-connected device whose main data reception point is via wireless signals, rather than the insertion of physical media, the primary method of delivering any software such as video games is via a wireless digital delivery platform. As most smartphones already have such a delivery platform pre-programmed into their operating systems (namely Google Android's Play Store and the Apple App Store), the development of mobile games has largely modeled the larger app market.

3. Playing smartphone games

This new technological environment generates some new challenges for researchers, investigating the process of choosing gaming content to fulfill any type of entertaining function. Whereas console and PC games are often purchased through traditional retail channels (such as packaged media sales) and online portals (such as Amazon.com or game-specific portals, such as Sony PlayStation Store), smartphone games are purchased in the same app markets as all other smartphone apps. Users to download, install and play a mobile game have to search and sought among a dizzying array of other mobile phone app offerings. One the one hand, their ready-accessibility (as mobile apps) might be understood in terms of a more intrinsic selective exposure approach [31] by which gamers simply "dial up a distraction" when needed, as suggested by Liu and Li [15]. On the other hand, users might take a more elaborated approach to game purchases, considering both the size of the mobile gaming market in tandem with any number of quality dimensions before investing their time into a gaming experience (cf. Wolling [29]). At the same time, the "freemium" price model might make mobile games more attractive to users, giving them a low-investment opportunity (in terms of time and money) to try out a variety of different games before investing money into games they actually want to play.

While research on broad motivations for playing video games is rather extensive, comparison work looking at smartphone gaming is rather sparse. Wei [28] reported a general trend that younger mobile users were more likely to play games on their smartphone than older users, with a marginally significant association between smartphone gaming and passing time motivations. Such a finding is consistent with the general focus of smartphone gaming as a market for quick engagement – indeed, gamers self-report wanting smartphone games that allow them to quickly engage and