

Crushing Candy: The Free-to-Play Game in Its Connective Commodity Form

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Abstract

The goal of this article is to add a complementary perspective to the study of social network sites by surveying how the political economy of social media platforms relates to the structure of free-to-play games in their commodity form. Drawing on the theory of multisided markets and critical political economy, this article surveys the political economy of game apps and investigates how it is symbiotically related to the technological and economic logic underlying connective platforms operated by Google, Apple, Facebook, and Amazon. These social media platforms operate app stores that sustain the transformation of games as fixed, physically distributed products that follow a transaction logic, into digitally distributed, freely accessible, or “free-to-play” apps. Through a case study of the popular casual game *Candy Crush Saga* it is contended that the connective properties of social media platforms affect the form and format of game apps as cultural commodities. *Candy Crush Saga* developer King Digital Entertainment has been able to attract hundreds of millions of players and build a business model that combines the commodification of virtual items, connectivity, user attention, user data, and play. It is argued that the free-to-play commodity form comprises three commodity types: the product commodity, the “prosumer commodity,” and the player commodity. Furthermore, *Candy Crush Saga*’s commodity form is structured by a platformed modality of cultural production and circulation and therefore embedded in the political economy of its host platform.

Keywords

political economy, apps, platforms, game industry, free-to-play, commodity form

Introduction

The stock market launch of game studio King Digital Entertainment in March of 2014 can be regarded as a decisive moment in the nascent app economy. In a matter of 2 years, the company’s revenue grew from US\$63 million in 2011 to US\$1.8 billion in 2013, and the developer turned a million dollar loss in 2011 into a US\$567 million profit in 2013 (King Digital Entertainment, 2014a). What is more, 78% of the 2013 fourth quarter revenue derived from one single game launched the year before: *Candy Crush Saga* (King Digital Entertainment, 2012).

Rather than being available on dedicated game devices or on a self-owned web-based portal, casual games such as *Candy Crush* are increasingly hosted and played on smartphones, tablets, and social network sites. This type of market is best understood as a “multisided” or “platform market,” in which a hardware or software platform (or a combination thereof) interfaces between two or more “sides”: for example, game developers, advertisers, and players (Gawer, 2009). Google, Apple, Facebook, and Amazon operate, what I call “connective game platforms,” constituting a range of

devices (e.g. iPhone, Kindle Fire), operating systems (e.g. iOS and Android), and applications stores (e.g. Apple’s App Store). Being tethered to these platforms has far-reaching implications for how games as apps are played, for their mode of development and distribution, and how they are marketed.

In this contribution, my aim is to offer a deeper insight in the economic dimension of the transformation of online sociality and digital play by surveying the political economic implications of a platform-based modality of cultural production and circulation. Drawing on critical political economy, I will argue that the rules of play for game apps are as much governed by a game’s ludic properties as they are structured and alternated by a market logic, which is mutually constituted

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by the connective logic of social media platforms. Similar to Facebook “channeling and structuring online activity to suit the needs” of its business model (Cohen, 2008, p. 17), I would argue that King channels and structures digital play to suit the needs of its business model. That is to say, the symbiotic technological and economic relationship between King and its host platforms deeply affects the form and format of game apps as cultural commodities.

King’s rapid growth and subsequent initial public offering (IPO) can, arguably, be attributed to the developer’s keen ability to scale the so-called “free-to-play” model. Rather than drawing on the traditional paid-for or “premium” revenue model and charging an upfront fee per game, King derived its 2013 profits primarily via optional virtual consumption. And in the particular case of King, spending money is *very* optional. A mere 3% of its player network of over 300+ million consisted of payers (King Digital Entertainment, 2014a, p. 5).¹ This low conversion rate of players into payers favors economies of scale and requires game studios to use a data-driven approach to game development and circulation in order to optimize, what industry insiders call “player monetization.” Consequently, the free-to-play business model gave way to a specific modality of production and circulation that is afforded by, and commonly conducted within the boundaries of connective platforms. Therefore, the operationalization and evolution of this business model can only be understood in light of the platform-developer–user–advertiser relationship.

The research question on the interaction between the political economy of platforms and the free-to-play business model breaks down into two parts. In the first part of this article, I will discuss the political economy of multisided markets, survey the literature on the app economy, and introduce my methodological apparatus. Next, I will briefly reflect on King’s company history and discuss its service-based mode of game development and circulation.

The second part of this article offers an in-depth case study of *Candy Crush Saga* in its commodity form and analyzes how the political economy of free-to-play games is intertwined with the technological and economic properties of connective game platforms. Acknowledging the historical continuities in the process of commodification, it is argued that the free-to-play model as it is operationalized by King draws on existing commodity types that are used both inside and outside platform markets and the game industry. I will conclude this article by reflecting on the added value of a critical political economic approach to studying social media platforms and game apps. Also, attention is drawn to the potential long-term macro-economic implications of the free-to-play business model.

The political economy of platform markets

Increasingly, information, communication, and entertainment businesses forward a “multisided market” strategy to

operationalize their product or service offerings (Rochet & Tirole, 2003). In this particular market configuration, companies such as Google, Apple, Facebook, and Amazon operate as platform holders, who set the platform’s technological standards and governance model, and mediate between, on the one hand “buyers” (e.g. players), and on the other hand suppliers (e.g. King) or “complementors” (Gawer, 2009). Increasingly, advertising driven platforms, such as Google’s search engine business, are three-sided, bringing together Internet users, content-providers, and advertisers (Rieder & Sire, 2014). Foundational texts on multisided markets by economists and management scholars, such as the article by Rochet and Tirole (2003), regard dedicated gaming platforms (e.g. the PlayStation and the Xbox) as a canonical example because virtually all of digital play takes place within the boundaries of networked proprietary platforms.

Inherent to multisided markets are network externalities—or network effects—, meaning that the value or utility of product or service (whether actual, perceived, or anticipated value) is causally related to the number of users, or anticipated users (cf. Schilling, 2003). Network effects affect the platform holder, its complementors, and buyers. Platform holders tend to subsidize one side of the platform, for example by offering free services to complementors. For example, Apple’s software development kit is accessible for an annual fee of US\$99 after which Apple takes on the costs associated with app distribution.² Because connective platforms afford distribution at (near) zero marginal costs, access to products and services can be free and substantial revenues can be generated via various cross-subsidy strategies, such as advertising and discretionary virtual consumption. As such, network effects also affect complementors, which are able to attract significant amounts of users because of its free pricing model. As a result, the more people play *Candy Crush Saga*, the more effective and valuable the game’s connective (or “social”) components become for both the players and for King, which in turn benefits the platform holder.

While King is not the first game company to leverage network effects, the way in which King operationalized the free-to-play model and how this in turn structured *Candy Crush*’s commodity form, should be understood against the background of platform economics. Yet, rather than being “preoccupied by the problem of the surplus in capitalist production” (Miège, 1979, p. 299), or taking the multisided market configuration for granted and seeking avenues to strengthen the position of platform holders or complementors, I will survey the political economic implications of a platformed modality of cultural production and circulation. To do so, this article takes King’s popular tile-matching game *Candy Crush Saga* as a case study and theorizes it as a *connective commodity*.³ This perspective is concerned with a key issue at the heart of critical political economic thought: the process of commodification, which postulates that games, as any other cultural commodity, are defined by their “exchange value” (i.e., market price) as opposed to an arrangement foregrounding the

“use value” of a game as art (cf. Mosco, 2009, p. 132). The notion of connectivity points toward the political economic imperative underlying social media platforms: the commodification of relationships or “turning connectedness into connectivity by means of coding technologies” (Van Dijck, 2013b, p. 16).

A specific focus on *Candy Crush Saga* as a connective commodity is warranted as research on mobile games has predominantly focused on mobile phone usage and the adoption of smartphones in specific countries (e.g. Campbell, 2007), and to a lesser extent on mobile gameplay (e.g. Okazaki, Skapa, & Grande, 2008). Recent exceptions notwithstanding (e.g. Goldsmith, 2014; Lescop & Lescop, 2014), there is, as Goggin (2014) observes: “surprisingly slim literature on the structure and political economy of mobile industries” or “even the important areas of apps and software ecosystems” (p. 3). That said, there is a body of work by economists and management scholars who studied the evolution of intra-industry relationships among app developers, telecom operators and hardware manufacturers (Ballon, 2009), as well as changes in the mobile industry’s value chain (Barnes, 2002; Peppard & Rylander, 2006). Others have conducted studies related to virtual consumption and the “willingness-to-pay” among consumers for virtual goods (e.g. Hamari, 2015; Hamari & Lehdonvirta, 2010), an issue that is particularly relevant in the realm of free-to-play games. Also, there are a number of valuable studies on the rapid pace of innovation affecting mobile game development and the subsequent precarious status of app developers (Banks, 2012; Bergvall-Kåreborn & Howcroft, 2013; Mosemghvdlishvili & Jansz, 2013).

While these studies offer a valuable insight into the transformation of the overall ecosystem of connective media, this article aims to add a complementary perspective to the study of social network sites by surveying how the political economy of connective game platforms relates the structure of free-to-play games in their commodity form. Inserting the issue of capital and power into the discussion on social media is meant to draw attention to a perspective that is inherently critical, holistic, and historical. Before discussing how King’s ascendance ran parallel to the diffusion of three categories of connective game platforms—social network sites, smartphones, and tablets—I will briefly discuss the methodological approach toward unpacking the free-to-play commodity form.

A methodological note

Analyzing how *Candy Crush* functions as a product and how King is positioned in a multisided market suggests a versatile methodological apparatus that blends macro-economic analysis with a micro-economic reading of games as apps. First, in order to deconstruct the process of commodification I engaged in textual analysis. *Candy Crush Saga* served as a case study to be able to pinpoint the instances of value generation and

commodity exchange. Over the course of 2014, I played the game extensively on Facebook, an Android-powered Samsung smartphone, on Amazon’s Kindle Fire, the iPad, and the iPhone. Gameplay sessions were logged by taking time-stamped screenshots at regular intervals, which served as a game journal. Next to analyzing gameplay, the game’s rules, and the game-world (Aarseth, 2003), I paid special attention to the game’s techno-economic properties, such as the in-game integration of Facebook’s connective affordances.

Complicating the analysis of games as apps is a methodological issue familiar to those in software studies: there is not one instance of the game (Rogers, 2013). By avoiding platform exclusivity, King follows what in platform theory is dubbed a “multi-homing” strategy (Lescop & Lescop, 2014). King’s games are among the first true cross-platform games; meaning that one can start a gameplay session on one platform and, after pausing, one can continue playing on the other. This suggests that *Candy Crush*’s core game and monetization mechanics are very similar across platforms. That said, each game platform influences game production, distribution, and marketing on different levels.

For example, the Facebook version of *Candy Crush* has a different user interface design and naturally, it has players logged in to Facebook by default, lowering the player’s transaction costs associated with social and connective practices. As Paavilainen, Hamari, Stenros, and Kinnunen (2013, p. 811) note, specific changes in Facebook’s governance structure can alter both the gameplay and monetization mechanics of games hosted on its platform. Regardless, both on mobile devices and on Facebook, games are positioned, formatted, and understood as apps, the implications of which will be discussed more in-depth below. As such, social network games and mobile games are highly similar with regard to its business model. Moreover, as Goggin (2014) notes, Facebook’s role as a browser-based dedicated connective game platform might be fading, as the company increasingly focuses on its non-gaming mobile apps as well as the commodification of its connective properties.⁴

In order to provide context to a newly emerging set of industry concepts and practices associated with the free-to-play model, 35 background interviews were conducted in 2013, 2014, and 2015 with representatives of mobile marketing companies and mobile developers from the Netherlands, Finland, Israel, Germany, and the United States.

Second, I engaged in financial analysis by collecting “data derived from financial statements” (Albarran, 2004, p. 296). A corpus of financial data was compiled, consisting of six quarterly filings by King with the Security and Exchange Commission in May, August, and November of 2014, and February and May of 2015 (King Digital Entertainment, 2014b, 2014c, 2014d, 2015a, 2015b, 2015c). Above all, the economics underlying King’s debut as a public traded company are codified in its 108,000-word prospectus (King Digital Entertainment, 2014a), the mandatory disclosure document that is part of an IPO. Up until February 2014, the

economics of game app development and the free-to-play business model were rather opaque for financial analysts, journalists, and scholars as the great majority of app developers are private companies. As political economist Ronald Bettig (2009) notes, privately held companies, and private equity firms in particular, are reluctant to open their books and offer an insight into their mode of production, their revenues, investments, and relationships with other companies. The King prospectus, on the other hand, is “the kind of data political economists rely upon to make the linkages between capital and communications” (Bettig, 2009, p. 30). The wealth of insights offered by King’s financial figures serves as the perfect starting point for those scholars who want to follow the money and who want to gain a deeper understanding of the political economy of apps and how mobile games function in the wider “ecosystem of connective media” (Van Dijk, 2013a).

To be sure, King’s revenue figures serve as a starting point and only concern, quite literally, the bottom line. Far more important is what comes before that: how is this surplus value generated? And particularly relevant for the scope of this article: how has King been able to build a business model that combines the commodification of virtual items, connectivity, user attention, user data, and play? To answer these questions, the next section will reflect on changes in the political economy of the wider game industry and connects King’s history with the emergence of connective game platforms.

“Bitesize brilliance”

While the majority of King’s revenue in 2013 derived from the emerging market segment of free-to-play mobile game platforms, the ascendance of King is rooted in a decade long history. One way to account for King’s growth would be to focus on the company’s ability to bypass traditional industry power structures by leveraging a number of techno-economic and cultural shifts in the wider game industry.

Founded in 2002 as Midasplayer.com Limited, King developed accessible casual games from its inception. Initially the studio focused on what the company called “skill-based” games, such as *Solitaire*, where players could compete online against each other for real money prizes, generating revenue via tournament fees paid by users. In a matter of years, King “became a leading game portal, developing and publishing proprietary games in a tournament format through our website, as well as distributing our content on other leading web portals of the time, such as AOL, MSN and Yahoo!” (King Digital Entertainment, 2014a, p. 51). The developer became profitable in 2005 and got a US\$43-million investment from two major venture capitalist firms (Mac, 2014). The money was invested in a broader portfolio of casual games, or as game developers call it “intellectual properties” or “IP’s,” many of which were used as templates for later hits.

The initial viability of King as an investment opportunity should be seen against the background of the “casual revolution” in game culture (Juul, 2010). In the mid-2000s the addressable market for casual games began to grow as a much wider audience than ever before was able to download casual games or frequent web-based game portals. Casual games differ from the previous decades of so-called “hard-core” games because (1) their fiction preference tends to be positive, (2) casual games require less initial knowledge to play, and (3) they demand lower time investments (Juul, 2010, p. 54). The pick-up-and-play nature of casual gaming, Hjorth and Richardson (2011) argue, “takes place in the interstices of everyday life” (p. 121). This resonates with the way King’s CEO Riccardo Zacconi outlines the company’s game design philosophy: “A key principle for King is that no individual game session should take more than a few minutes. [. . .] We call it bitesize brilliance—the perfect way to spend three minutes of free time” (King Digital Entertainment, 2014a, p. 79). While so-called casual games have been developed and played for decades, what made casual games a permanent fixture in everyday life is the global diffusion of two categories of connective game platforms: social networks sites and mobile devices.

By opening up its platform to third parties in 2007, Facebook adopted a multisided market strategy. The American game developer Zynga, founded in 2007, was among the first to not only acquire a substantial amount of players, but also to instrument their games to commoditize the connective affordances of Facebook. The newly emerging market segment of “social games” took off rather quickly with freely accessible games such as *FarmVille* (Zynga, 2009) and *CityVille* (Zynga, 2010); the latter went on to reach 100 million monthly users early 2011 (Schroeder, 2011). As a result, in 2011, Zynga generated a billion dollar in revenue primarily derived from virtual items sales (Zynga, 2014). Yet, despite Zynga’s stratospheric success, a number of studies (e.g. Consalvo & Paul, 2013; Hjorth & Richardson, 2011) observe that players, developers, and critics consider social games not to be “real” games, but a waste of time or merely toys. Their popularity, then, can be ascribed to the accessible and more open-ended gameplay of social games, which allow for a wide variety of play styles and a heterogeneous audience (Paavilainen et al., 2013).

While Zynga can be credited for popularizing free-to-play social games, the company has a poor reputation among gamers and developers because of how it operationalizes the free-to-play business model and its reliance on data-driven design methods (Alha, Koskinen, Paavilainen, Hamari, & Kinnunen, 2014). Since the heyday of its success early 2012, the company’s stock dove from US\$15 early 2012 to around US\$3, and up until mid-2015 never really recovered.

As Zynga’s IPO makes clear, King was not the first major game developer of either free-to-play or social games. However, Facebook turned out to be the perfect fit for King’s existing catalogue, the company’s history with free-to-play

titles, and its agile mode of production and circulation. One could argue that the starting point of the road toward King's IPO truly began with the September 2011 Facebook launch of *Bubble Witch Saga*, offering King the perfect opportunity to boost the size of its player network. It was the widespread diffusion of mobile devices, particularly the iPhone, however, that changed both King's and Facebook's outlook (Goggin 2009, 2014).

The rise of the App Store

After the 2007 launch of the iPhone, Apple adopted a multisided strategy as well by opening the App Store for its iOS-powered devices in July 2008.⁵ Instead of the issues that previously plagued the users of mobile games on feature handsets—for example, cumbersome download procedures and unclear payment options—users of the App Store are offered a curated virtual storefront with recommendation and search functionalities and integrated payment solutions (Jansen & Bloemendal, 2013). Apple's approach to operating its application market is decidedly centralized, having the “portal” fully integrated with the hardware and thereby taking over control from industrial actors who previously managed the mobile value chain, such as network operators, portal providers, financial institutions, and most relevant to the argument in this article, (game) developers (Ballon, 2009).

Even though developers are not vetted beforehand and the App Store is open to all, developers are faced with strict and rather opaque set of guidelines including “legal aspects (e.g., copyright restrictions), thematic limitations, and platform homogeneity enforcement, mandating that approved applications follow every style guide-line, and do not replace any functionality” (Cuadrado & Dueñas, 2012, p. 163). Despite heavy regulations and the uncertainty associated with app development, the “Apple paradox,” Goldsmith (2014, p. 174) argues, indicates that a closed ecosystem does not inhibit innovation, as suggested by scholars such as Zittrain (2008). In his study of the Australian game studio HalfBrick, Banks argues that the iPhone can be considered as an “innovation platform” that allows developers to “explore and experiment through trial-and-error rapid prototyping” (Banks, 2012, p. 162, cf. Goggin, 2011). Especially compared to the capital-intensive mode of production of console games (Nichols, 2014), game development for the iPhone is relatively capital-extensive. As a result, there is a bigger and much more diverse pool of game developers than ever before, ranging from individual hobbyists to student teams, and from well-capitalized incumbents, to artists and activists (Mosemghvdlishvili & Jansz, 2013).

The lower barrier to market entry for app development also made the app economy a highly competitive market and the discoverability of new apps has become a significant challenge. Consequently, in the app ecosystem, the nexus of control moved away from the strict and strategic regulation

over the means of game production, as still is common for dedicated console game platforms. A large part of the functions associated with app discovery and distribution (e.g., search functions, advertising and recommendation functionalities) are, one could say, pulled back into the platform in two ways. First, similar to strolling through a physical department store, the App Store itself has become one of the primary destinations for consumers to look for new apps. Second, app developers and game app developers in particular have fully embraced platform-based advertising. Rather than advertising apps in traditional outlets, such as in magazines or on TV, game developers predominantly advertise in other apps through “interstitials” (full screen images) or short video clips, a business practice often referred to as “user acquisition” (Luton, 2013). Increasingly, mobile game developers use Facebook as an advertising intermediary, touting the platform's advertising targeting capabilities that go beyond many of its competitors.

In sum, the rise of the app stores operated by Google, Apple, Facebook, and Amazon signal a wider shift in inter-industry power relationships and hierarchies and both restrict app development as well as offering an innovation platform. Next to technological innovation, connective platforms have fuelled the continuous experimentation particularly by game developers with various revenue models. The free-to-play model in particular radically altered the production, distribution, and marketing of game apps.

“We run a service business”

Initially, the dominant business model for games published on the iOS platform relied on the more traditional upfront pricing or “premium” pricing model. Up until 2010, as Feijóo, Gomez-Barroso, Aguado, and Ramos (2012, p. 217) explain, the App Store was dominated by premium apps, complemented by the freemium model, sometimes including advertising. In October 2009, Apple introduced the option of “in-app-purchases” (IAPs), a seemingly minor change, but one that laid the foundation for the free-to-play business model.⁶ It took a while before influential studios, such as *Angry Birds* (Rovio Entertainment, 2009) developer Rovio, but also incumbents such as game publisher Electronic Arts, considered the free-to-play model as a viable, let alone the default revenue model for its mobile games. King, however, never charged for its web-based games and had substantial prior experience implementing the free-to-play model for its Facebook-based games.

One of the reasons why incumbents might have been reluctant to implement the free-to-play model is because of its mode of production and circulation. Much more so than product-driven game developers, studios developing free-to-play games seem to have fully internalized a “lean” approach to business and software development (cf. Ries, 2011). This includes a highly iterative and incremental approach to software development, such as rapid prototyping, in-company

“gamejams,” and extensive early user testing, as well as incorporating data-driven approaches to development and marketing.

For instance, King uses “a well-practiced, low-cost, low-risk process for game development where we have typically developed a new game IP with a team of three people in 20 weeks” (King Digital Entertainment, 2014a, p. 51). This modality of production allows for quick validation by enabling developers to test, what Ries (2011) in his influential treatise on startups terms a “minimal viable product,” or in game development parlance, to “soft launch” a game on a company’s own portal, or in a region or country of choice to see if a concept is able to gain traction among users.

This particular mode of production and circulation is mutually constituted by the connective logic of social media platforms. The interaction between platform and business model rings through in the four metrics that are commonly used to structure the development of free-to-play games and to measure their performance: acquisition, engagement, retention, and monetization (Luton, 2013; Seufert, 2014). Using King as an example, for the free-to-play model to be effective King needs: (1) to aggregate large volumes of players because of the low rate of conversion into paying users, (2) to engage players in such a way that they enjoy playing and connect with other players, preferably via Facebook, (3) to retain players long enough for them to consider converting to becoming a paying user, and (4) to lower the barrier to (repeatedly) spend money.

Connective game platforms, on the one hand, offer the means (i.e., the technological infrastructure, tools, and third-party services) to facilitate and optimize this rationalized, data-driven mode of game production (cf. El-Nasr, Drachen, & Canossa, 2013). On the other hand, these metrics are indicative of a more open-ended approach to game design and is indicative of a wider industry shift of product-based companies that are increasingly moving toward service-based business models. The effects of this approach for game design are explained by King’s Chief Operating Officer Stephane Kurgan: “Candy Crush Saga was launched a little more than two years ago, and we are still actively managing the game and continuously updating it with new content and features. In short, we run a service business” (King Digital Entertainment, 2014d). As I will go on to argue, this approach extends beyond the development of additional content. Compared to the relatively static upfront transaction-based revenue model of console games, the free-to-play model is fully intertwined with an app’s core game design, and therefore much more fluid and diverse.

Next, I will use *Candy Crush Saga* as a case study to contextualize this ongoing process of business model innovation while at the same time pointing toward the parallels with existing commodity types. I will argue that it is in the realm of platform-based game marketing where the connective features of emergent game platforms meet, and subsequently structure the app’s commodity form.

The audience commodity

Critical political economists have been at the forefront of demystifying and theorizing the nature of cultural commodities, emphasizing historical continuities while at the same time arguing that not all cultural commodities are created equal (Miège, 1979). For example, a broadcast TV program in its commodity form operates according to a different market logic than, let us say, a Triple-A console game. While the former typically manufactures audiences and draws on the “audience commodity” (Smythe, 1977), or arguably constructed audiences through data-driven valuations (Meehan, 1984), the publishers of console games traditionally derive their primary revenue from selling physical copies (Nieborg, 2011). More recently, critical studies on the nature of the audience commodity in the age of connective platforms have focused on the pervasive role of advertising for social media platforms, such as Facebook (Cohen, 2008) and Google (Bermejo, 2009; Rieder & Sire, 2014; Van Couvering, 2011). These studies demonstrate that platform economics, platform governance, and a platform’s technological standards mutually constitute the process of commodification.

How the audience commodity functions both inside and outside platform markets constantly changes is largely the result of the logic of capitalism. As Fuchs (2012) argues, the revenue models underlying social media platforms capture value beyond audience production via advertising and have come to include the commodification of demographic and behavioral data. Similarly, Van Dijck (2013a) argues that social media platforms took a “connective turn,” transforming sociality into a standardized, tradable commodity. By doing so, users active on social media platforms engage in “immaterial” or “free labor” (Terranova, 2004) as the social, cultural, and symbolic capital users generate on connective platforms is appropriated and repurposed as a connective resource to be sold to advertisers. Extending this argument to the domain of digital play, the connective value generated via platformed interactions is integrated with the commodification of “game capital”; a player’s playing abilities and knowledge about a game (Consalvo, 2007, p. 38). Players, Fuchs argues, are part of a political economy that institutionalizes “Internet prosumer commodification,” which “is a manifestation of a stage of capitalism, in which the boundaries between play and labour have become fuzzy and the exploitation of play labour has become a new principle” (Fuchs, 2012, p. 734, cf. Kücklich, 2005). This begs the question how the audience commodity evolved and manifests itself in the realm of free-to-play games given that audience aggregation is at the core of its business model.

Next, I will deconstruct the free-to-play commodity form more in-depth by analyzing King’s flagship title *Candy Crush Saga*. Compared to the relatively stable business model of transaction-based premium games, I contend that the business model associated with free-to-play games is decidedly less monolithic and, as of yet, anything but stable.

Table 1. The free-to-play commodity form.

	Monetization strategy	Commodity type	Equivalent
1	In-app-purchase	Product commodity	Downloadable content
2	Virality	"Prosumer commodity"	Social media connectivity
3	Advertising	Player commodity	Search advertising

It is argued that the app comprises a number of disparate revenue models, or as game developers would say "monetization strategies." Or put in political economic terms, the free-to-play commodity form comprises three commodity types that have equivalents in other segments of the cultural industries. Taken together, these three types function as a whole and constitute the free-to-play app as a connective commodity. Moreover, these monetization strategies demonstrate how *Candy Crush Saga*'s commodity form is structured by, and embedded in the political economy of its host platform. Therefore, an analysis of the free-to-play commodity types constituting the business models of connective platforms.

The free-to-play commodity form

After downloading the mobile version of *Candy Crush Saga* in the iOS App Store, the first thing a player will encounter is a bright splash screen with the game's logo and a bright blue button with the Facebook logo that says: "Share your progress with your friends and across devices!"⁷ After connecting with Facebook, which is not mandatory but highly encouraged throughout the game's progression, the player is shown one's Facebook profile picture on top of a colorful map where level 1 beacons suggesting the player starts crushing candy. The core of the game is the well-known matching tile mechanic, which, as Juul (2010) describes so well, has a long history in game design dating back to the 1980s and has "no vocal proponents, only critics" (p. 84). The popular game *Bejeweled* (PopCap Games, 2001), in particular, not only sold millions of copies, the game solidified the popularity of the tile-matching mechanic and that of its developer PopCap, who claimed that the game "started the phenomenon of casual games" (Juul, 2010, pp. 79–84), and thus, arguably, *Candy Crush Saga*.

In every respect, *Candy Crush* is the prototypical casual game. The appeal of *Candy Crush*'s core game mechanic lies in its accessibility: line up at least three (or more) matching candies and they will disappear. The game is two-dimensional, its core game mechanic facilitates short play sessions allowing for interruptibility, its game aesthetics demonstrate a decidedly, what Juul calls, "positive fiction," consisting of colorful candy, chocolate, and licorice rolls, and the game features excessive positive feedback ("Delicious!," "Devine!," "Sweet!," "Tasty!," and "Sugar Crush!") after successful player actions. What sets *Candy Crush Saga* apart

from its predecessors, such as *Bejeweled*, is the game's elaborate leveling structure. Players can progress through hundreds of levels that offer different variations on the core matching mechanic, such as timed modes or a limited number of turns. As I will argue below, the leveling structure combines gameplay variation with a number of monetization strategies specific to the free-to-play model.

The most prominent, and for King most lucrative monetization strategy, is the first commodity type of the transaction-based optional IAP, shown in Table 1. At any point in the game, players can buy in-game gold bars, which can be spent in three ways.⁸ First, there is "entertainment time, where players can extend the duration of their game session" (King Digital Entertainment, 2014a, p. 5). While players generally breeze through the game's first set of levels, at a certain point the player might fail a level and lose a life. Every 30 min a player is given a "free" life, up to a maximum of five, but those players who do not want to wait can opt for an IAP. This "time-lapse" (Burroughs, 2014) or "energy" design mechanic (Paavilainen et al., 2013) relies on "exploiting player impatience" (Evans, 2015, p. 13, cf. Lescop & Lescop, 2014) and has become one of the core design mechanics of free-to-play games. Ironically, exploratory research on why players stop playing *Candy Crush* suggests that this mechanic is also a source of players leaving the game (Wei, Lee, Lu, Tzou, & Weng, 2015). Second, players can invest money on "skill enhancements" in the form of boosters (e.g., a "color bomb candy") to help them progress through difficult levels or attain higher scores, and by doing so accruing game capital. Arguably, this specific monetization mechanic has drawn the most criticism among detractors of the free-to-play model, as some consider it a "pay-to-win" principle; meaning "players with the most money" gain an unfair advantage (Alha et al., 2014, p. 4). Third, virtual currency can be spent on "access to content"; that is, additional levels on the map. The option to buy additional game content is rooted in similar product-based commodity types associated with PC and console games, such as shareware, expansion packs, and downloadable content (Nieborg, 2011, 2014). While *Candy Crush*'s first three episodes (i.e., sets of levels) are free, players reaching level 35 are given three options: investing money by spending gold bars, investing time by playing a series of challenges which, again, are time-delayed, or, spending social capital by asking three Facebook Friends for help. It is this latter option that leads us to the realm of connective game platforms.

The second commodity type concerns the commodification of connectivity or what game developers dub “virality,” measured by the “k-factor” (cf. Seufert, 2014, p. 104). The ask-for-help feature to gain access to additional episodes is one example of how the connective affordances of Facebook are implemented in the core design of the *Saga* template.⁹ By doing so, King repurposes seemingly social gestures, such as gifting, to generate “organic growth” (Burroughs, 2014). To paraphrase critical scholar Christian Fuchs (2014): playtime in apps is the conversion of Bourdieuan game capital into Marxian value and economic capital.¹⁰ The invitation and gifting mechanics derive their value and meaning from extensive play sessions and can be understood as an extension and intensification of the process “prosumer commodification” (Fuchs, 2014). The value of prosumer commodification is enhanced by the targeting capabilities offered by connective platforms: for example, using Facebook’s data and targeting capabilities, King can distinguish between “targets or waste” (Turow, 2011) and specifically single out, what developers call “whales” or “high-value” players, who are known to spend and gift extensively or repeatedly ask for help.

As such, *Candy Crush*’s preformatted and traceable gifting mechanics function in a similar way as Facebook’s “Like” button and are thus part of, as Gerlitz and Helmond (2013) argue, an infrastructure in which “social interaction is instantly metrified and multiplied and which connects insights from web analytics with individual user profiles and the social graph” (p. 3162). In the free-to-play commodity form, social and playful interactions are repurposed as highly structured instances of exchange afforded by connective platforms and thereby fully incorporated in King’s, as well as Facebook’s political economy.¹¹

The third monetization strategy uses advertising and concerns an industry practice that in the realm of free-to-play games is known as “paid player acquisition” or “user acquisition.”¹² This instance of in-app advertising bears similarities to what Van Couvering (2011) in her study on search advertising theorizes as the “traffic commodity,” where advertising is meant to steer users from one website or app to another. With the help of a myriad of mobile advertising companies offering in-app advertising services, chief among which Facebook, players fitting a certain profile can be individually tracked and targeted. As a result, individual players literally have a dollar price that is measured via the now standard industry “cost per acquisition” (CPA) metric (Luton, 2013).¹³ Hence, players become a *player commodity*, sold by one app developer to another. In 2014, King spent US\$455 million on marketing and sales, noting that these investments are “enhanced” by the game’s connective properties (King Digital Entertainment, 2015a). This implies that the value of the player commodity is directly related to that of the prosumer commodity.

The three monetization strategies come together in what King calls the “Saga envelope,” which is meant to streamline game production, circulation, and monetization, and make it

“repeatable and scalable” (King Digital Entertainment, 2014c, 2014d). The format encompasses “a path through hundreds of game levels, social features that allow interactions with others, viral mechanics, and a variety of virtual items available for purchase” (King Digital Entertainment, 2014a, p. 86). The *Saga* envelope structures all of King’s games and shows the deep integration of fundamental parts of the game’s level design with a commodification logic that combines connectivity with transaction-based economics. The format is designed to attain that most elusive goal for free-to-play developers: a commercial transaction (i.e., players buying virtual items), as well as extracting value from every single player interaction with the game’s ludic and connective mechanics. Moreover, the envelope is indicative of the intensification of commodification as it offers a design strategy that goes far beyond traditional textual formatting strategies, such as genres and serialization (Nieborg, 2014), by offering a rigid and all-pervasive design template structured by the product, prosumer, and player commodity.

Conclusion

The revenue intake associated with the app economy ballooned since 2008 and has grown into a formidable market segment. Market researcher Newzoo projected that in 2015 the mobile segment’s US\$30.3 billion in global revenue will overtake the revenue generated via the sale of Triple-A console games (Takahashi, 2014). Drawing on the theory of multisided markets and critical political economy, my aim has been to illustrate how the political economy of apps is symbiotically related to the technological and economic logic underlying connective platforms. I argued that King’s billion-dollar valuation is directly related to the company’s ability to not only commoditize digital play, but to repurpose ludic interactions by integrating them with the connective affordances and the business models of social media and mobile platforms. This constantly evolving relationship manifests itself on different levels, but for the purpose of this article I chose to focus on the process of commodification to draw attention to the aggregation logic underlying the free-to-play business model.

Candy Crush Saga combines three separate commodity forms into a powerful new whole. The potent combination of level progression, connective elements, and monetization options demonstrate how King pursues multiple avenues to accrue value beyond the optional transaction-based sale of virtual items. *Candy Crush* players can share high-scores, gift “lives” (for additional play sessions) to Facebook Friends, or ask those same Friends for help to unlock a new set of levels, thereby generating attention and thus value for King and the *Saga* brand. Leveraging the affordances of connective platforms, gameplay in games similar to *Candy Crush*, Burroughs (2014) observes, consists of a number of consumer rituals that double as meaningful exchanges (e.g., of virtual gifts) between players, as well as instances of the

commodification of ludic sociality. Fuchs (2012) argues that: “On corporate social media, play and labour converge into play labour that is exploited for capital accumulation” (pp. 730-731). As a complementor in a multisided market, King and the *Saga* envelope extend this logic fully into the domain of play.

The emergence and subsequent industry-wide acceptance of the free-to-play business model for mobile and social games is intertwined with the business models of connective game platforms.¹⁴ This dependency invites important questions pertaining to both the economics and politics of platform markets. Typically, studies of platforms as software and platforms as markets tend to either focus on the techno-economic nature of platforms, platform management, or the position of platform holders vis-a-vis “buyers” (i.e., users or players). This article has drawn on a growing body of critical work discussing the political economies of Apple, Facebook, and Google. Such studies point toward, for example, the pervasive practice of surveillance in the case of Facebook (Cohen, 2008), or the inherent incentives to bias in Google’s search results, which are a result of its three-sided market strategy (Rieder & Sire, 2014). Building on this valuable body of work, the aim of this article has been to contribute to an understanding of social media platforms by widening the scope of market analysis and paying particular attention to the role of complementors in multisided markets.

Over the course of 2013, the growth of King’s player network benefitted from network effects largely driven by player’s using the affordances of connective game platforms, particularly Facebook. This symbiosis goes to show how Facebook’s political economy cannot be fully understood without accounting for the value accrued by complementors, such as game developers like King (cf. O’Donnell & Consalvo, 2015). For Facebook, companies such as King fulfill an important double role. On the one hand, they generate indirect network effects, adding value to the Facebook platform by offering games, such as *Candy Crush Saga*, directly on the Facebook website.¹⁵ On the other hand, app developers, such as King, spend millions on advertising, thereby enabling Facebook to commodify its connective properties, or more precisely, the traffic and data generated by Facebook’s users.

Let me conclude this article by calling attention to the long-term political economic implications of the free-to-play business model. Compared to the product-based business paradigm of dedicated game consoles, described by Rayna and Striukova (2014) as the “few-to-few” paradigm, the free-to-play model offers a complementary model that is best understood as “many-to-many.” Platform holders in multisided markets interface between a sizable amount of game studios and a large and diverse global audience. The programmability of apps lowered the costs for game development and the accessibility of app stores combined with a “free” price tag significantly lowered the transactions costs for consumers.

Yet, a closer look at the political economy of multisided markets, and by extension the free-to-play market segment, suggests that the “many-to-many” paradigm solely covers the quantity of available games; it does not concern a more even distribution of revenue, let alone profit. I would contend that King’s rapid growth can be largely ascribed to the company’s capability to leverage network externalities, or better said, the monopolistic tendencies that are inherent to platform markets.¹⁶ This concentration logic led to King’s dominant position, however temporary, within the wider ecosystem of free-to-play games. Therefore, going forward, vital questions remain pertaining to the concentration of capital and power in the game industry, as well as the long-term sustainability of the free-to-play model and the ability for new entrants to platform markets to operate a more sustainable business model.

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Notes

1. King’s percentage of payers is almost half of the industry average, which according to Seufert (2014) is 5%. During the first quarter of 2015, the number of monthly unique users grew to 364 million, while the percentage of payers dropped to 2.3% (King Digital Entertainment, 2015b).
2. Apple subsequently rakes in 30% of all app revenue. This percentage is lower than the 30% to 70% fee game developers commonly pay to console game platform holders (Van Dreunen, 2011).
3. Exactly because of *Candy Crush*’s popularity, I would argue that King as a company, and *Candy Crush* in its commodity form, are paradigmatic for the way in which the free-to-play business model is understood. That said, given the incredibly wide range of available game apps, there are many games that are vastly different in terms of their mode of production and circulation.
4. More so than other platforms, Facebook has a double role in the game industry. It is once a host platform, but at the same time it offers a range of products and developers tool that constitute the connective glue that connects, tracks, and targets individual players across devices.
5. Soon to be followed in October 2008 by the Android Market, later rebranded as Google Play, for smartphones running the

Android operating system. Amazon, Microsoft, and Facebook operate app stores similar to Apple.

6. The freemium and free-to-play categories are often used interchangeably. Throughout this article, the free-to-play notion is used for free games that offer IAPs whereas freemium is understood as buying the full, premium version of a previously free, dressed-down version of the same app.
7. For reasons of clarity and consistency, the subsequent analysis is based on the iOS version of *Candy Crush*.
8. Virtual currency is a recent addition to the iOS version of *Candy Crush Saga*: "In the second half of August we transitioned Candy Crush mobile to virtual currency called King gold bars in our games" (King Digital Entertainment, 2014c).
9. In addition to the ask-for-help feature there are several pre-formatted gifting mechanics implemented in *Candy Crush*. For example, players can ask Facebook Friends for additional "lives" or, vice versa, gift them at prompted intervals. In addition, a player can share a high score after completing a level or can suggest the "Wheel Of Fortune" functionality, which grants players a free spin every 24 hr and offers prizes such as free boosters.
10. In his critique of social media platforms, Fuchs (2014) argues that: "Labour time on commercial social media is the conversion of Bourdieuan social, cultural and symbolic capital into Marxian value and economic capital" (p. 57).
11. Compared to the social affordances of PC and video games, the mobile version of *Candy Crush* offers little opportunities for in-game social interaction (e.g. chat or messaging) other than the highly instrumental gift-related interactions.
12. Although King advertises heavily in other games, since the second quarter of 2013 the company does not derive revenue from in-app advertising, unlike many other free-to-play studios (King Digital Entertainment, 2014a, p. 53). In order to keep players in King's network, King heavily cross-promotes its own games via in-app advertising techniques.
13. Interviewees noted that over the course of 2014, the price tag for individual players ranged between USD0.50 up to US\$12 in competitive Western markets.
14. The great majority of games in the app stores of Google, Apple, Facebook, and Amazon are free-to-play, as also noted by Alha, Koskinen, Paavilainen, Hamari, and Kinnunen (2014).
15. The 2014 annual report states that the majority of Facebook's US\$974 million (7.8% of the total annual revenue) stems from "fees related to Payments" (i.e., the sale of in-game items and virtual currency) and that this revenue is generated "almost exclusively" by "a limited number of the most popular games" (Facebook, 2015, pp. 22, 43).
16. Drawing on the research on concentration in the search engine business by Pollock (2010), Rieder and Sire (2014, p. 12) note that there is "structural tendency towards monopoly" in information markets (cf. Brynjolfsson & McAfee, 2014), which exhibit high fixed costs, low marginal costs, and a product (or service) that is offered for free; a market structure that overlaps considerably with the free-to-play business model.

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