

Exploring Mobile Gaming Revenues: the Price Tag of Impatience, Stress and Release

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Abstract: The mobile gaming industry is growing at a rapid pace. Smartphones, tablets and other mobile devices are new channels to deliver games to customers. However, since the birth of Internet, users have been accustomed to getting things for free. How then are mobile game companies able to make billions € in revenue? What are the main drivers of profitability in this sector? Our objective is to dissect the freemium pricing strategy that is frequently used in the mobile gaming sector. With the help of the case study of Gameloft, we explore the method and the path for converting free into profit by playing with the users' frustration and stress.

Key words: Mobile Gaming, Business Model, Pricing.

Although smartphones began to enter households in the late nineties, it was not until the introduction of the Apple iPhone in 2007 and its successful adoption, that the smartphone global penetration rates started to climb, reaching 23% worldwide in 2013. Concurrently with the dawn of a new era of mobile communication, the video gaming industry began to expand into the mobile device segment.

The video game industry has its roots in the arcade gaming, the age which began with Atari's Pong over forty years ago. Since then, the video game industry has been creating content for several support types, including personal computers and game consoles, with content prices ranging from twenty to seventy Euros per title. More recently the content creation started to concern mobile devices and smart TVs. Interestingly, the price range applied to the titles of the hard core video game industry did not transpose onto the prices of content for these devices, marking the range from only zero to about 20 € per title.

The above phenomenon of non-transference of content pricing across the support types is attributed to at least two events. First, there is a historical tendency for the telecom operators and device manufacturers to make a limited number of mobile games available free of charge to the end users of feature phones. Both telecom operators and device manufacturers believed that mobile phone content, such as games, adds value to the device and increases its attractiveness; they were purchasing and pre-installing content directly onto the mobile devices, hence making the end user accustomed to having the content free of charge. Second, Apple's entry into the mobile sector caused the breach of the value chain of the sector (LESCOP & LESCOP, 2013). This led to remodelling of the barriers to entry for application developers, causing the developers' pool to swarm with hundreds of thousands of amateur developers, who wanted to try their luck in the newly emerged marketplace, alongside with a limited number of professional entrants, who were spawned by the established video game developers. As mobile device content became vast in number, it helped shape the customer expectations as well as the rules of the industry, leading to emergence of the need to re-vamp the pricing strategy as well as re-shape the approach to the customer with the intent to capitalize on the content that the customer was expecting not to pay for. Mobile gaming is the most active sector in terms of development, revenues and downloads on application stores. In 2013, games represented 77% of total application revenues ¹. Game developers collect 90% ² of their revenues on application stores through a very particular freemium business model: free download with in-app purchases. Only 6.1% of their revenues come from paid applications without in-app purchases: a rather surprising result at a first glance, considering the fact that the gaming industry was built on a *pay to play* model.

This paper uses a descriptive and exploratory case study approach to investigate the main drivers of the business models of mobile gaming companies. The first section studies the mobile gaming industry and highlights its main characteristics. In particular, we draw a typology of developers' strategy and business models. In the second section, we study a representative firm: Gameloft. Through this case we focus on pricing strategy with the intent to explain how zero price can be converted into the sector revenue of 9.46 bn € in 2013 ³. The third section highlights the main

¹ Source: Forbes, November, 1st, 2013.

² Source: Distimo, "Unveiling the Secrets behind App Store Category Dynamics", March 2014.

³ Source: Gartner, "Forecast: Video Game Ecosystem, Worldwide, 4Q13", October 2013.

drivers of the developers' business models, inferred from the case study. The last section concludes the paper.

■ The mobile gaming industry

Overview of the industry

A subset of the video game industry, the mobile gaming sector specializes in provision of gaming content for mobile devices. Although the content comes in a variety of genres, it is composed nearly entirely of casual games; these games are intended to appeal to a mass audience due to their gentle learning curves. Social games, the subset of casual games, are the games deployed on the social networks with the intent to meaningfully use the player's existing social relationships and hence stimulate mass game play. The content is available to smart phones, large-screen devices such as tablets, as well as other mobile devices such as feature phones.

Over the last three years the size of the video game industry has expanded from 40 bn € in 2011 to 66.66 bn € in 2013⁴. With the growing global penetration rates of mobile devices, the mobile gaming sector nearly tripled from 3.45 bn € in 2011 to 9.46 bn € in 2013. In 2011, about 80% of the revenue was shared among the top four players, jointly representing 52.9% of registered users in the sector. Two years later, in 2013, the market has evolved beyond recognition. The first player in the ranking, King, exhibits a market share of 14.2%, while the top four players jointly represent only 49% of the sector's revenues. DeNA, GREE, and Zynga have experienced a noticeable decrease of their revenue between 2012 and 2013. Over the same period, the revenues of King, GungHo and Supercell have skyrocketed. Dominance of the top-ranked players has diminished dramatically. Among the top fifteen players in mobile gaming in 2013, only one entered the mobile gaming sector prior to the year 2000 (Gameloft), while six entered in the year 2006 or later. The prevailing majority of the companies originate from USA, followed by Japanese-based companies. The detailed depiction of the revenue shares can be seen in Table 1.

⁴ Source: Gartner, *op.cit.*

Table 1 - The 15 Largest of the mobile gaming industry in 2013

<i>Company</i>	<i>Entry</i>	<i>Origin</i>	<i>Revenue 2011 (in M€)</i>	<i>Revenue 2012 (in M€)</i>	<i>Revenue 2013 (in M€)</i>
King	2002	England/Sweden	Nk	117.5	1347
Gung Ho**	2002	Japan	67.2	180.6	1140
DeNA (Mobage)	2006*	Japan	827.9	1260	1100
Gree**	2007*	Japan	449.1	1100	1060
Disney Interactive**	2000	USA	703.8	605.6	762.6
Supercell	2010	Finland	Nk	72.4	639.4
Zynga	2007	USA	766.9	823.4	546.2
Tencent(MVAS)**	2000*	China	400.6	424.8	Nk
Rovio	2003	Finland	75.4	152.2	156
Electronic Arts Mobile	2004*	USA	162.2	192.8	286.7 ^E
Kabam	2012	USA	Nk	129	258
Gameloft	1999	France	164.4	208.3	233.3
Activision Pub.	2008*	USA	119.7	117.5	119 ^E
Big Fish Games	2002	USA	14	Nk	95.3
Glu Games Inc.	2001	USA	51	77.4	75.3
Total revenue			3450	6652	9467

* corresponds to the date of entry of the mobile gaming division of the parent company, ** non-segregated data, ^E estimated value.

Source: annual reports, Gartner, 2013

Over the past few years, players in the mobile gaming sector have created value. Starting from nearly nothing before the emergence of smartphones in 2007, the sector generated nearly 10 bn € in 2013. These players did so by using their unique capabilities in tandem with leveraging the resources of the central players, such as Apple and Google, in an effort to reach vast audiences to develop their businesses.

Delivery channels and pricing

Mobile games can be delivered through four delivery channels: pre-installation on a mobile device, device manufacturer's platform, telecom operator's portal or own platform. The mobile device manufacturer can choose to purchase a license from the game developer for a flat fee in order to pre-install the game into the mobile device prior to selling it to the final consumer, who in turn can play the game at no additional cost. In cases when the game is subjected to distribution via the device manufacturer's platform, or via the telecom operator's portal, the game developer pays the platform/portal owner a fee, which represents a fixed percent of the game

sales, usually close to 50%. Although it is attractive to distribute the games through developer's own platform as it is fee-free, the sales are usually far less effective. Some of the reasons for this include low visibility and barriers imposed by device manufacturers to impede third-party content installation.

As for game pricing, there have emerged several distinct strategies: paid download, freemium, ad-supported, and other. Paid download is the core traditional pricing method where the end user makes a one-time payment to purchase the title. Once paid for, the user gains access to download the game, which is then installed to and played on a single mobile device. The freemium strategy (ANDERSON, 2009) is a pricing method where the end user is granted access to download and play free of charge; all the in-game features are available at extra cost, with no obligation to buy them whatsoever. As of February 2014, over 90% of the revenue from mobile games developed for iPhone is generated through the freemium business model ⁵.

Aside from benefiting from self-advertising, developers of freemium games are relying on in-app purchases such as micro-transactions and sales of virtual goods, effectiveness of in-game advertisement of their own or third party products and services, as well as in-game sales of real products such as game-related merchandise.

Another pricing strategy is various methods of ad-support, including development of advergames ⁶. Advergaming are casual games that are funded by and meant to advertise a sponsor. These games can be educational in nature, aiming to acquaint the gamer with the range or specifics of the advertiser's products. Such games are available online free of charge, or can be bundled with a tangible product. In ad-supported games the sponsor's brand names or distinct product images appear as part of gameplay. Appearance of such an advertisement is either static, i.e. the brand name is displayed passively and blends into the background, or dynamic, i.e. the brand name or a distinct image is used as an interactive component in certain parts of the game.

Other pricing strategies include subscription as well as hybrid strategies such as paymium, sub-freemium, or free-paymium. With paymium pricing,

⁵ Source: Distimo, *op.cit.*

⁶ The term "advergaming" was coined by Anthony Giallourakis in January 2000, founder of www.advergaming.com

the user first pays to download, and then is expected to participate in micro-transactions to enhance his/her gaming experience. Subscription typically requires a term commitment where a flat monthly fee is charged to the user. Sometimes subscription-based games are made available as free-to-play for a limited time during or immediately following the commitment term of the subscription. Some firms practice a pricing approach where the subscription fee endures for 6-9 months, and then morphs into a freemium strategy, referred to above as sub-freemium hybrid strategy. Other firms offer promotional days when users can download the non-freemium game for free, and then make in-app purchases. In-app purchases are often not required to successfully complete any given game; they are meant to greatly enhance the gaming experience by alleviating stress due to impatience and frustration of the user. As of March 2014, on the Apple App Store, mobile game revenues are generated at ⁷:

- 92% from freemium business model with in-app purchases,
- 6% from pay per download business model,
- 2% from pay per download business model with in-app purchases.

The share of paid download games is consistently shrinking, yielding their share to ad-supported games and games featuring micro-transactions.

Elements of the business models of the top-ranked firms

The mobile gaming industry is young and fast-paced. As a consequence, business models and design have not yet become stabilized. It is a typical case of high velocity environment (BOURGEOIS & EISENHARDT, 1988). For WIRTZ *et al.* (2007):

"The central feature of a high-velocity environment is the rapid, discontinuous and simultaneous change in demand, competitors, technology and regulation. These characteristics indicate that information is time-sensitive and imprecise, or even unavailable. As a result, market boundaries are blurred, successful business models have not yet manifested and the roles of market players continuously change. Complex and unpredictable changes are frequent and come in the form of market jolts".

Virtually non-existent barriers to entry, continuous flow of innovation, fierce competition, enthusiastic consumers, and youth of the mobile gaming

⁷ Source: Distimo, *op.cit.*

sector, - all contributed to the business model instability and this is what probably explains the lightning success of game developers like SuperCell, Rovio and GungHo.

Table 2 - Elements of the strategy of the 15 largest of the mobile gaming industry in 2013

<i>Company</i>	<i>Entry Strategy</i>	<i>Main Functions</i>	<i>Main Revenue Model</i>
King	New entrant specialized in mobile games	Develop and Publish its own game	Freemium
Gung Ho	From an adjacent market (online auctions)	Develop and Publish its own game	Freemium
DeNA (Mobage)	From an adjacent market (e-commerce, m-commerce)	Develop and Publish its own game Platform	Freemium
GREE	From an adjacent market (social network)	Develop and Publish its own game Platform	Pay per download Freemium
Disney Interactive	From an adjacent market (entertainment)	Develop and Publish its own game	Freemium Pay per download
Supercell	New entrant specialized in mobile games	Develop and Publish its own game	Freemium
Zynga	New entrant specialized in social game	Develop and Publish its own game	Freemium Pay per download
Tencent (MVAS)	From an adjacent market (mass media, mobile, etc.)	Develop and Publish its own game	Freemium
Rovio	New entrant specialized in mobile games	Develop and Publish its own game	Freemium
Electronic Arts Mobile	From adjacent market (video games)	Develop and Publish its own game	Pay per download Freemium
Kabam	New entrant specialized in free to play games for social network	Develop and Publish its own game Platform	Freemium
Gameloft	New entrant with a strong link with an adjacent player (Ubisoft)	Develop and Publish its own game	Freemium Pay per download
Activision Pub.	From an adjacent market (video games)	Develop and Publish its own game	Pay per download Freemium
Big Fish Games	New entrant specialized in premium casual games	Develop and Publish its own game Distribute	Freemium Pay per download
Glu Games Inc.	New entrant specialized in 3D mobile games	Develop and Publish its own game	Freemium

Source: annual reports

Today, the market is composed of a myriad of small developers creating a mass of casual mobile games, while the fifteen largest players represent nearly 90% of the 2013 sector revenues. The smaller players are here to try their luck in the hope of developing the \$1 billion app that will attract

hundreds of millions of players. In the majority of cases they are individual developers or small groups of developers. They are not necessarily organised into a firm. They often sell their development through distribution platforms like DeNa or GREE; they sometimes abandon their own brand in favor of the platform brand. These small players enter and exit the market very quickly. This creates a hyperactive competitive fringe that tries to contest the position of the fifteen biggest players. In this sense, the mobile gaming market appears contestable.

Table 2 exhibits some relevant elements of the business models of the top fifteen players in the mobile games market.

We observe three different types of entry in the mobile gaming market among the top fifteen players:

Creation and Specialization

This category hosts new entrants specialized in a particular type of game: 3D, social network games, mobile games and casual games. Seven of the top fifteen players are new entrants founded specifically to operate in the mobile game sector. They are pure players in the market even though some of them are beginning to expand their activities to other platforms (PC, Consoles, TV) or other products. Some of them exhibit a business model that relies on one or two blockbuster games which generate over 80% of their total revenues. Prominent examples of such are SuperCell (*Clash of Clans*, *Hay Day*), GungHo (*Puzzle and Dragons*), Rovio (*Angry Birds*) and King (*Candy Crush*). Their business models are very fragile and suffer from inability to renew their games catalogue. Rovio's business model is interesting: Rovio took advantage of the success of its blockbuster (*Angry Birds*) and developed a derivative market and brand licenses. These players strive to ensure the survival and continued attractiveness of their games. Nearly all of them were quick to succeed. They all follow a freemium strategy with in-app purchases that relies on a vast audience. Their main strategy is to hold the players' attention by continuing to develop their successful games through adding new features, scenarios, puzzles, characters, players' interactions, etc.

Adjacent entry from the entertainment market

Four entrants among the top fifteen players come from the adjacent markets: entertainment and video games. These players are historical incumbents that have been leading their own markets for decades: Disney,

Activision, Ubisoft (with Gameloft) and Electronic Arts. These firms are exploring the mobile distribution channel by adapting some of their existing games to mobile devices (smartphones and tablets). The mobile activity represents a very small part of their total revenue and does not appear to be highly strategic.

Adjacent entry from other markets

Four entrants among the top fifteen players come from online auctions, e-commerce and m-commerce markets. These players enter the mobile gaming market by leveraging their social network (GREE) or their customers' base. GungHo follows an entry strategy similar to that of a pure player based on one successful game: Puzzle and Dragons. GREE and DeNA leveraged their existing platform strategy by allowing third party developers to propose games to GREE and DeNA customers.

The main functions of the top fifteen players can be broken down into three elements:

Develop and publish

This is the core activity of mobile game companies. They use a differentiation strategy by proposing a new game experience to consumers. This function requires creative and innovative developers who are able to understand the demand and expectations of players. Often, games are launched as beta versions and evolve throughout their lifetime in response to the user experience of different game features. Developers must be reactive to create correct metrics to assess and modify the most lucrative feature of their game. This presupposes having to listen to users and then adapting the game accordingly. Most of the developers create blogs or a game-bound website to provide support to players and collect feedback. Since 2012, the most successful games are casual games, either puzzle/dungeon or battle/strategy-like.

Distribute

Some players like Big Fish Games develop and publish their own games, and distribute the games of third party developers and editors through their platform. Big Fish Games is specialized in premium casual games: the company presents itself as the leading online marketplace for such games. Big Fish Games offers third party developers a multi-channel distribution approach by making games available on PC, Mac, iPad, iPhone, Android,

Kindle, Nintendo Wii, Nintendo DS and retail. More than a market place, Big Fish Games is a distributor (merchant model).

Platform

This last function expands the distributor's role to embrace the firm/market equivalency strategy. GREE and DeNA chose such a strategy by opening up their platform (through SDK and API) and customers' base (or social network) to third-party developers and by monetizing their investment through the transactions issued between developers and customers. DeNA/Mobage provides developers with expertise and knowledge (production support), marketing (users acquisitions, promotion), SDKs (iOS or Android), analytics (to monitor the performance of games in real-time and to tune the game accordingly), global distribution (worldwide publishing), quality gamer network (about 30 millions active and engaged users). DeNA is providing support to developers to attract them, along with their innovative ideas. Small developers are attracted by such platforms since they can benefit from the support, the customers' base and reputation of the platform owner. They hence increase the probability of success of their game and, in a way, appear less anonymous. By doing so, DeNA and GREE create clusters of developers around their platforms within the app stores system. They also improve the creativity of their value proposition.

In the mobile gaming industry these main functions are cumulative. We observe three possible sets of functions: 1) develop and publish; 2) develop, publish and distribute; 3) develop, publish, distribute, and be a platform (since a platform is also distributing third party developers' games). We do not observe a strategy of pure platform or pure distributor. All of the top fifteen players are developing and publishing their own games. Among them, eleven are playing the pure strategy of developing and publishing their own games. The biggest platforms (GREE and DeNA) are developed by entrants coming from very specific adjacent markets (social network and e-commerce/m-commerce). The side-competitors from the adjacent markets of entertainment and video games (Disney, EA, Activision, Ubisoft) follow the pure strategy of developing and publishing their own games. Big Fish Games is the only example of a distributor, and is highly specialized in premium casual games.

The forementioned elements highlight several main characteristics of the mobile gaming industry. This industry exhibits low barriers to entry and a high level of risk pushing firms to continuously innovate and provide players with new game experience. Moreover, the market is still growing at a rapid

pace making barriers to entry almost irrelevant: leading positions are therefore not stabilized and new leaders can emerge quickly. The shift towards a dominant freemium revenue model forces developers to compete fiercely for a mass audience. Mass audience is the key to transform micro-transactions (in-app purchases) into tremendous profits. This means that developers need to release attractive games that will meet the player's expectations. These games also need to be available for all devices (spatial competition). A corollary of the freemium model is multi-homing: developers avoid exclusivity (for instance: iOS or Android) because to reach a wider audience they must port their development to other operating systems. Exclusivity, as it used to be in the console games market, is not the rule here. Most of the developers, in particular the top fifteen, develop for several platforms.

However, simply having the presence on several platforms is insufficient: developers need to be visible. The traditional way to improve visibility is via multi-channel advertising (websites, blogs, application stores, etc.). This is surely very costly for a small developer. When one game is successful, in-game advertising can be used to transfer the players to a new game. Even if these firms compete, some of them cooperate. The basic forms of collaboration are in-game cross-advertising and licensing. They also co-develop and co-brand some games to share their experience and reputation with partners: Gameloft regularly cooperates with The Learning Company; in 2012, GREE teamed up with Gameloft and Ubisoft to enter the European mobile social gaming market; Rovio franchised Angry Birds to GungHo. The extreme level of collaboration is platform openness, where one firm opens up its platform to other developers.

■ A typical freemium strategy: Gameloft

The choice of Gameloft

Invention, innovation, new products, and new ideas do not bring value *per se*. TEECE (2010) neatly summarized a common theoretical belief:

"In standard approaches to competitive markets, the problem of capturing value is quite simply assumed away: inventions are often assumed to create value naturally and, enjoying protection of iron-clad patents, firms can capture value by simply selling output in established

markets, which are assumed to exist for all products and inventions. Thus there are no puzzles about how to design a business - it is simply assumed that if value is delivered, customers will always pay for it".

This theoretical ideal is just a "*caricature*" of the real world and cannot explain the revenue generated in the gaming industry. In particular it cannot explain why customers decide to pay at a point in time. Business models and business design matter (BADEN-FULLER & MORGAN, 2010; BADEN-FULLER & HAEFLIGER, 2013; WIRTZ *et al.*, 2010) and are of tremendous importance in the Web 2.0 and Internet industry (AMIT & ZOTT, 2001; ZOTT & AMIT, 2010).

This case study relies on the design of business models to understand the profitability of firms in the gaming industry. Our research is in its essence descriptive and exploratory and uses the single case study method (YIN, 1994). By providing a detailed description of the revenue model of the chosen company, we aim to find and clarify the main ingredients of its success in terms of profits. More precisely, the objective of the case study is to dissect the freemium pricing strategy frequently used in the mobile gaming sector. With the help of the case study we explore the method and the path for converting free into profit. We collected secondary data and information from publications (industry studies, books, and articles), Google search, players' publications (press releases, financial reports, and activity reports) as well as from writing by experts and consultants, who specialize in the relevant sectors.

We had several reasons to select Gameloft for this case study. Gameloft pioneered mobile gaming in 1999. It is the earliest entrant into the mobile gaming sector among the top fifteen largest developers and publishers in 2013. Gameloft is the early signal from the French-based video game developer Ubisoft, the parent company, to step into an emerging adjacent market, with intent to multi-home on all available platforms. Gameloft employs over 6391 people among which are 5200 developers. It has published over 500 games for mobile devices. Gameloft relies heavily on freemium pricing strategy with emphasis on micro-transactions and in-game advertising. Gameloft displays a stable business model and strategic positioning. As for 2013, Gameloft is still among the top ten publishers worldwide in terms of total downloads on iOS and Google Play (ranks second after Electronic Arts but before SuperCell or Gung Ho), top games downloads on iOS and GooglePlay (ranks fourth) and revenues (ranks

twelveth)⁸. In 2013, Gameloft counted twenty million daily users, one million daily downloads and one billion downloads to date of its free to play games. Gameloft commercializes its games in fifteen languages in 100+ countries over 4000 different models of smartphones. Gameloft develops its own games and franchises (Asphalt, Real Football, Modern Combat, Order & Chaos) and works in collaboration with international companies like Marvel, Hasbro, FOX, Mattel and Disney. Gameloft is undoubtedly an example of success with a rather stable business model. For all these reasons we consider Gameloft as a model for the mobile game industry.

The Gameloft model: the price tag of impatience and release

The free to play with in-app purchases model represents 85% of Gameloft revenues in 2013. The applications come either pre-installed on the mobile devices and at no additional charge to the final user, or can be downloaded from the device manufacturer's platform. 98% of Gameloft's revenue is sourced from their mobile applications business segment.

We have reviewed a number of freemium Gameloft games with respect to the pricing strategy and conversion of the non-paying users into a revenue contributor. All of the games we reviewed shared common elements. With the help of an example of the game entitled "The Oregon Trail: American Settler", we highlight these elements and explain how the game compels non-paying users to convert to paying customers.

The game starts out presenting the user with a need to manage a limited number of resources: coins, cash, wood, food, energy and hearts. Coins, wood and food can be obtained by doing chores and quests throughout the game. Each of the actions is time sensitive: there is a timer assigned to each action, and the user needs to wait until the timer expires in order to be able to collect resources like food and coins. The cash, energy and hearts are scarce resources. In the beginning of the game, the user is occasionally presented with these resources in form of a bonus. Hearts can be collected by helping a neighbouring town to do chores, and can be further used to upgrade buildings in the user's own town to increase coin payoff, or to play a lottery, where the user can win in-game items, cash or energy. Lottery can also be played for free once every 24 hours. Hearts can also be purchased

⁸ Source: App Annie Index: 2013 Retrospective, *The Top Trends of 2013*, App Annie, January 2014.

with cash. In the second half of the game, the option to earn hearts disappears, and only the option to buy hearts with cash remains. Energy is needed to do all actions in the game that yield payoffs. Energy resource is limited and builds up to a maximum of fifty energy points as the user progresses within the game. There are several ways to replenish the energy: win a lottery, using hearts or cash to participate; level-up by doing chores to earn experience points, which in turn promotes the user to the next level; wait three minutes to replenish one point of energy for a maximum of three minutes x 50 points = 150 minutes; earn as a bonus for doing chores; or buy more energy with cash.

Cash is the most curious resource of all. In the beginning of the game, cash is frequently offered as bonus. The user also has an option to get free cash by watching short 20-30 second advertisements of other Gameloft games. For each of the advertisements watched, up to a maximum of five per each 24-hour period, a user is offered one unit of cash to be spent within the game. Later in the game, Gameloft advertisements disappear, and in their stead appears a list of Gameloft partners who advertise their products and services with the help of Gameloft. In exchange for filling in your personal information or purchasing real merchandise from these partners, Gameloft grants cash for use in-game to the participating user. The cash can be spent to buy all other resources, including the scarce resources, to hurry production, hence eliminating the need to wait until the timers elapse, or to buy in-game items. The in-game items can be either functional (e.g. providing or enhancing coin resource), or decorative (e.g. outfit of your game character or the character's gender). The cash, in turn, can be purchased for real-world money using your credit card. The rates are presented in such a fashion that they compel user to buy a larger pack of cash rather than a smaller one: see Table 3 for details.

Table 3 - Cash pricelist

<i>Amount</i>	<i>Bonus</i>	<i>Name of Cash Pack</i>	<i>New Name of Cash Pack (2013)</i>	<i>Price</i>
10	0	Baby-sized Pack	Pouch of Cash	1.79 €
25	1	Starter-sized Pack	Bushel of Cash	4.49 €
50	5	Medium-sized Pack	Sack of Cash	8.99 €
100	20	Big Pack	Barrel of Cash	17.99 €
250	100	Extra-Large Pack	Wagon of Cash	44.99 €
500	300	Super-sized Pack	Bale of Cash	89.99 €

What compels the users to buy these packs of cash? What drives some of the users to convert into paying customers? Since the beginning of the

game the user is faced with real-time delays throughout the game: production of collectable resources takes real time, and each item in the game (house, business, farm animal, etc.) has an associated timer. Upon the expiry of the timer the resources can be collected (taxes, items produced, harvest, etc.). Each action of the user's character costs one unit of energy. Energy recuperation is also associated with a timer. Moreover, free lottery, free cash, and land expansions are associated with a timer. The farther the user is progressing into the game, the more yield there is from each producing entity, but also the longer the time delay is. In addition, the larger the town becomes, the farther it stretches, the longer, in real time, it becomes for the character to walk from one place to another in order to do the chores. The user has a choice to make in-game purchases of virtual content that will enable the character to walk faster and to rush the in-game timers. Such items are offered exclusively in exchange for in-game cash. Hence, playing on the impatience of the user created by the need to wait all the time, the game is offering a quick solution to relieve impatience through purchases of packs of cash, which can then be spent to purchase the play time (in lieu of wait time).

How does the game publisher manage to attract millions of registered users? How does the company manage to retain their user mass? With a wide selection of free games with high-quality graphics, it appears to be a challenge. However, one of the keys of success of the social games is their aim to employ the user as vector of advertisement among the user's social connections. The game tries to become "social": it encourages the user to invite friends through social networks (e.g. Facebook) to join the game by offering bonus in-game resources and ability to interact with the befriended users and their games. Such offer of interaction encourages so-called items race: your town must be better than the towns of your friends. Other important factors are the appearance of the game as free-to-play, the game's addictive qualities as well as visibility throughout major application distributing platforms (App Store, Google Play, etc.). By providing the game that is free to download, the user bears no risk by trying the game. Once the game is on the mobile device, it needs to possess an addictive component, such as limiting the play time. If the user is not satisfied with the length of duration of the game, he will play again shortly thereafter (when his energy has been refilled). In addition, the game is encouraging the users to play daily by offering daily, weekly and monthly attendance prizes. The prizes are only earned if the game is accessed on a daily basis. Another method used to ensure that the user returns to the game often is the reaction of the in-game characters to the absence of the user: when the user does not check

back regularly, the mood of the in-game characters decays from jubilant to depressed, which affects the production yield. This contributes to user's motivation to interact with the game daily.

■ Analysis and discussion

Although there is no one universal formula for generating revenue in the mobile gaming sector, we can infer five main drivers of profitability from the case study.

First driver: Be visible

Since the entry into the mobile gaming sector is nearly barrier-free, over the past several years the device manufacturer's application distribution platforms have been flooded with talented amateur game developer wannabes, small developer firms as well as heavy-weight entrants from the side market (video game industry). Gaining visibility in this sea of competitors is key. Multi-homing is a necessity: the time of exclusivity in gaming is over. Multi-homing on multiple platforms ensures the maximization of the potential audience.

Second driver: Be free

The mobile gaming customers expect the content to be provided to them free of charge. This does not bereave the game developers from generating profit, yet they were in a position to re-vamp their pricing strategy and source their revenue from sales other than application sales. This need has prompted the roll-out of the freemium pricing strategy as the dominant strategy in the mobile gaming sector. Free to play strategy ensures that a vast number of users will try the game: acquisition of players seems easy, but retention is a more complex issue. In April 2014 Swrve, a US consulting company, specialized in mobile apps and games, published a report, *The Swrve New Players Report*, on the behavior of new players in the mobile games industry. They found that 19% of new players played the game only once and 45.5% abandoned it after 5 sessions. Only 5.5% of new players are still active in the game after 30 days.

Third driver: Be addictive and "stress and release" your players

For Mike LU (2014), VP of Product at GREE:

"One of the elements that make free-to-play unique is that we give the games away for free and then are dependent on players enjoying the game and any new content enough to spend within that game".

Being addictive and using methods at hand to frustrate the user, such that the user eventually cracks and pays up, are the top ingredients in value generation and capture. As we observed with Gameloft, the games are built in such a way as to put the time pressure throughout the aspects of the game. This time pressure does two things. First, it takes away the ability from the user to saturate himself with the game by overplaying; limited gaming periods in which the user does not have an opportunity to finish all actions/chores/quests that they want make them return to play the game later. In addition, the game encourages daily playing by offering bonuses. Second, the time pressure gradually builds up a level of impatience so that the user is either converted to a paying customer or simply stops playing. Both of these scenarios can be viewed as desired by the game developers when the objective is not necessarily to maintain the large-number user base: instead it is advantageous to maximize the revenue per active user. Moreover, addicted users use their social networks to make their friends play as well, hence bringing more potential paying customers to the game developer. Another ingredient appears useful to hook the players: "stress and release". To the question "Do you try to erase the user's stress with design [of your games]?", Kenji Kobayashi, Director at DeNA, answers:

"It's not that we erase it; we control and release it. When you think about what games are at the core, they are about delivering stress to the user. It wouldn't be fun if it's something that anyone could finish -- you put up obstacles for the user, and they feel a sense of achievement when they overcome them, which is fun."

The underlying idea is very basic: you should know your players and know what they like to provide them with the best playing experience.

Fourth driver: Capitalize

Even though there is a lot of effort made to retain the user, the game developer's ultimate goal is not to maximize the number of registered users, but to maximize the conversion of active users to paying users. As is evident

with the mobile gaming leaders, having highest profit per user is superior to managing the highest number of users.

Capitalization in the mobile gaming sector with dominating freemium pricing strategy lies in selling limited spans of the user's attention to advertisers, as well as generating value from user stress and impatience by encouraging them to participate in micro-transactions. The companies in this industry are able to afford a vast number of non-paying users due to nature of the product: virtual content. The non-paying users, however, may play a role in advertising the company's products and attracting new users who may eventually convert into paying users. The non-paying users are also often needed to ensure the playability of the game: in certain games a good balance between paying and non-paying users should be kept, otherwise the resulting unbalance may affect the playing experience of the paying users.

Capitalizing is not an easy task. The average revenue per user or per paying user does not give a clear image of reality. According to 5th Planet CEO Robert Winkler⁹, 40% of revenue comes from 2% of players spending \$1,000 or more per year, 90% comes from players spending \$100 or more per year. Some top players can even spend up to \$6,700 per year. These kinds of players are often referred to as "the whales". They represent only a small percentage: about 3-4% of paying users. As of now, developers are not able to outline their profile: are the whales old or young? Are they managers, doctors, employees, etc.? There are no specific demographics that can help to distinguish the whales from other players. Lu (2014) explains that these players are not compulsive: they spend in-game strategically and only if they feel it is worth doing so. To track these players, developers have invented batteries of metrics and analytics able to accurately measure and develop the economic design of their games: how and when are the players buying? What are they buying? At what level of the game are they ready to spend? These metrics make their game more agile and adaptable.

Fifth driver: Offer more

To strengthen their customer base, in addition to taking the steps as described above, the game developers try to up-sell and cross-sell to their existing registered users. This includes advertising other games, including

⁹ See: <http://venturebeat.com/2013/03/14/whales-and-why-social-gamers-are-just-gamers/>

games of their own and third-party developments, if the latter are willing to pay for the in-game advertisement. By offering more, the game developer eliminates the need for the registered users to wander around and check out the competitor's products. The game developer strives to create a playground - or platform - for its users to be able to find things to their liking once they are tired of their current game, hence keeping the potential and actual paying customers from leaving. Moreover, contrary to console games, users on mobile devices play several different games at the same time and can jump from one game to another very quickly: suturing the playing time of each user is of great importance.

■ Conclusion

In the high-velocity environment of mobile gaming, companies are still on the quest for an ideal business model and an ideal way to reach the players. Our paper highlights five crucial drivers that may help mobile gaming companies to ensure their survival. These five principles are implemented by the top fifteen players when they propose free-to-play games. Metrics and analytics on the data of players ensure the on-going adaptation of their design and revenue model. The detailed knowledge of the characteristics and habits of the players is undeniably a key factor of success. Consolidation has not yet occurred but is on its way.

A regulatory risk is threatening the industry. Some consumers' unions are complaining about the way mobile game companies are billing. Recently, in the UK the Office of Fair Trading (OFT) investigated the industry practices of online and app-based games. They observed (OFT, 2014) "industry-wide practices that were potentially misleading, commercially aggressive and otherwise unfair": lack of transparency of items' pricing, misleading commercial practices, exploitation of children's inexperience and vulnerability and quasi-automatic payments taken from accounts holders without their knowledge or explicit authorization. The OFT published a list of principles ¹⁰ that should be implemented by online and app-based games to comply with consumer protection law. The principles most notably force mobile gaming companies to detail precisely all the costs associated with the games (especially for in-game purchases) and impose that in-game payments must be authorized by the account holder (or rejected). As of now,

¹⁰ Available at : http://www.offt.gov.uk/shared_offt/consumer-enforcement/oft1519.pdf

these rules only apply in the UK. However, other regulatory bodies may follow the example of OFT ¹¹. The first impact of these rules will be on the fluidity of the revenue flows. Regulation may force companies to adapt their business model again.

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¹¹ See the FTC in-app purchasing complaint against Apple. Apple recently offered 32.5 M \$ in refunds to any Apple account holder who can prove they were billed for in-app purchases made by their children.