

'Few to Many': Change of Business Model Paradigm in the Video Game Industry

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Abstract: Based on an exhaustive and integrated business model framework, this article examines the critical differences between the two main business model paradigms – the one inherited from PC/console games and the one promoted by mobile and online games – in regard to the five main business model components: value proposition, value creation, value delivery, value capture and value communication. It is found that, despite an increasingly tighter integration of the market, significant differences remain between the two paradigms in most components.

Key words: video games, business models, paradigm, value creation, value proposition, value capture, value delivery, game consoles, online games, mobile games.

Despite its relative youth (about forty years), the video game industry is one of the most profitable entertainment industries. In 2012, its revenues were comparable to those of the movies industries and five times those of the music industry (MARCHAND & HENNIG-THURAU, 2013). Overall, over 25 years, the video game industry has grown yearly between 9% and 15% (ZACKARIASSON & WILSON, 2010).

However, after 20 years of relative stability (in terms of market structure, players and business models), this industry has been significantly disrupted by the advent of mobile and online gaming. In just four years, the share of revenues absorbed by mobile games has increased from less than 6% to above 20%, while the share of console games has fallen from 71% to 62%. Online games, smartphones and tablet games are even expected to reach over 57% of revenues by 2016 (PwC, 2012).

The new entrants on the market have put market incumbents in a challenging position, not because competition is new to them, but because

the 'rules of the game' have changed. Before, leadership would be achieved through technological innovation: the better the game, the bigger the gains (BADEN-FULLER & HAEFLIGER, 2013). Mobile and online gaming, however, relate to radically different gaming experience and expectations that make technological innovation less relevant (especially on a 4-5 inch screen) and require new strategies to gain competitiveness.

Hence, the role of business model innovation has become particularly crucial (MATTHYSENS *et al.*, 2006) and the advent of online and mobile gaming has led to a paradigm shift in regard to business models. The question of business models in the video game industry has been addressed in the literature, for instance, by ZACKARIASSON & WILSON (2010); DAIDJ & ISCKIA (2009); DILLON & COHEN (2013); MARCHAND & HENNIG-THURAU (2013); ZACKARIASSON & WILSON (2012); WALDNER *et al.* (2013); DILLON & COHEN (2013). However, the focus was generally put on one or a few particular aspects of the business models.

In contrast, this article makes two important contributions. First of all, it provides an exhaustive and integrated business model framework that enables a comprehensive analysis of all aspects of business models and how they interact with one another. Secondly, this framework is used to conduct an in-depth review of main business model paradigms in the video game industry. A particular emphasis is put on how the differences between these paradigms are reflected in each key component of the business model: value proposition, value creation, value delivery, value capture and value communication.

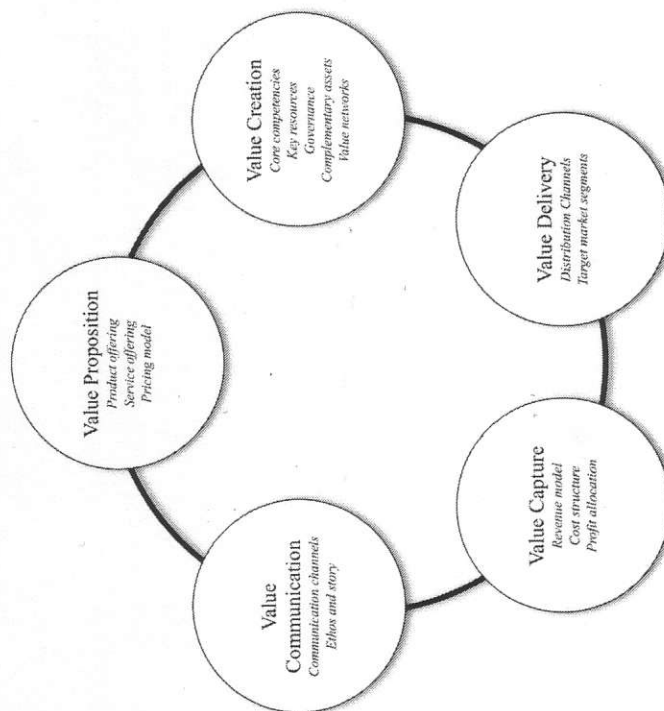
The article is organised as follows. The first section presents the integrated business model framework and its main components and subcomponents. The next section discusses the business model paradigm change in the video game industries. Each of the subsequent sections is devoted to the analysis of the different paradigms in relation to one of the five main business model components.

■ Business model framework

Business models underpin firms' ability to create and capture value (ØIESTAD & BUGGE, 2013). Although there are differences amongst scholars about what constitutes a business model, there is a broad consensus around five critical components (although most scholars only

focus on two or three of these components): value proposition, value creation, value capture, value delivery and value communication. The following paragraphs detail these main components and the resulting integrated business model framework is presented in Figure 1.

Figure 1 - Integrated business models framework



Value proposition relates to how the products and services of a firm are put forward (offered) to customers (CHESBROUGH, 2007; GIESEN *et al.*, 2007; JOHNSON *et al.*, 2008; ABDELKAFI *et al.*, 2013). This is how companies convince customers that their products and services can fulfil their needs (JOHNSON *et al.*, 2008). As value comes at a cost, pricing model is a part of value proposition (GIESEN *et al.*, 2007). In this respect, the pricing model itself can be a source of value if it is particularly suited to consumer needs (e.g. rental vs sales, volume discounts).

Value creation is a critical element of business models (CHESBROUGH, 2007; ABDELKAFI *et al.*, 2013; NG *et al.*, 2013). The value created by a firm, through its products or services, is a function of both internal (core competencies, key resources and governance) and external (complementary assets, value networks) factors. Complementary assets consist, among other elements, of existing complementary products and services (e.g. software/hardware), customer base, business alliances and partnerships, reputation (TEECE, 1986). Value networks relate to how a firm encompasses and leverages the relationships with both upstream (supplier) and downstream (distributor and customer) channels (GIESEN *et al.*, 2007; KOEN *et al.*, 2011).

Value delivery relates to how value is delivered to customers and consists of the various distribution channels employed by firms to deliver products or services (OSTERWALDER *et al.*, 2005; CHESBROUGH, 2007). Because value is often delivered differently to different groups of customers, target market segments are also a part of this component (OSTERWALDER *et al.*, 2005; CHESBROUGH, 2007; JOHNSON *et al.*, 2008).

Value capture is, along with value creation, one of the most critical elements of a business model. Besides the obvious revenue model (OSTERWALDER *et al.*, 2005; JOHNSON *et al.*, 2008) that enables firms to directly capture a part of the value created by their products and services, this component also encompasses issues related to cost structure (Johnson *et al.*, 2008) and profit allocation (ZOTT & AMIT, 2002; HOLM *et al.*, 2013).

Value communication corresponds to the way companies communicate with their customers and partners about the value that is created by their products and services (BIEGER & REINHOLD, 2011; ABDELKAFI *et al.*, 2013). It also relates to the way a company communicates about its story and ethos.

■ Change of paradigm in video game industry: from few to many

The specific details of business models and ecosystems in the video game industry, as well as their evolutions have been thoroughly studied in the literature, for instance in ZACKARIASSON & WILSON (2012); DILLON & COHEN (2013); MARCHAND & HENNIG-THURAU (2013).

From this literature, it is clear that two very distinct business model paradigms have to be considered. The 'old' business model paradigm is the one that prevailed from the early 1980s to the late 2000s. Characterised by large studios producing games for consoles and PCs, this paradigm can be described as a 'few to few' model¹.

Indeed, after the early boom of home video games in the early 1980s, this model mainly revolved around a combination of increasingly concentrated oligopolies. A few large studios, such as Activision Blizzard, Electronic Arts, Sega and Ubisoft produce games for three game console manufacturers (Microsoft, Nintendo, Sony) and (mainly) two Personal Computer operating systems (Microsoft Windows and Apple Mac OS X). Games are full-featured products sold 'boxed' (cartridge, optical disk), usually through specialised or general distributors, at a price in the \$40–60 range. Considering the relatively high price point, this model also implies relatively few customers². While in relative decline (~10% since 2008), this model still accounts for a large share (61%) of industry revenues (MARCHAND & HENNIG-THURAU, 2013).

The new business model paradigm that emerged in the mid to late 2000s is radically different. It is a 'many to many' paradigm: many (independent) developers (nowadays 280,503 active publishers on the U.S. Apple App Store alone³), many devices and distribution channels (e.g. online games, social media platforms, tablets, smartphones, PCs, connected TVs and set top boxes), very low prices (the average game price on the Apple App Store is \$0.75⁴) and, consequently, a massive number of users (in December 2013, in the U.S. alone, over 100 million games were downloaded on the Apple App Store⁵).

While the games corresponding to this new paradigm largely 'outsell' traditional games, their revenue share, while growing (6% in 2008 vs 20% in 2012), is still inferior to those of traditional games (MARCHAND & HENNIG-

¹ While there are differences between console games and PC games, in particular in regard to value chains and market structure, they indeed belong to the same 'few to few' paradigm. Furthermore, as noted in DAIDJ & ISCKIA (2009), consoles have become increasingly close to PCs over the past few years.

² The role of second-hand markets and piracy, which significantly increase the number of actual users, will be discussed in the next sections.

³ <http://148apps.biz/app-store-metrics/?mpage=account>

⁴ <http://148apps.biz/app-store-metrics/>

⁵ <http://www.xyologic.com/app-downloads-reports>

THURAU, 2013). Thus, despite its almost instant success the new paradigm has not replaced the 'old' business model paradigm.

Based on the framework presented above, the following sections provide an exhaustive review of the differences between these two paradigms in relation to all five business model components.

■ Changes in value proposition

Product offering and service offering

Video game industry was originally a product industry (games were sold to customers as fully featured final products), so value proposition mostly related to product offering. Yet, while major players in the industry did not embed services in their value proposition, other actors did (e.g. game rentals, second-hand games trades) and this third-party service offering increased the value proposition.

The advent of Internet in the 1990s created more opportunities for services. Yet, while the openness and connectivity of PCs enabled game publishers to rapidly develop online multiplayer platforms (e.g. Blizzard Entertainment's Battle.net in 1996), console manufacturers waited several more years before offering similar services. After Sega's ill-fated attempt in 1999, the first 'Internet capable' console, Microsoft Xbox, was released in 2001 and Xbox Live, the associated online service, in 2002. Nintendo and Sony followed four years later with WiiWare and PlayStation Network. Beyond communication means (online chat, video conference) these services mainly enabled users to download additional content: small-scale games, music and videos (MARCHAND & HENNIG-THURAU, 2013).

In the mid 1990s, game publishers started to use online services as core components of PC games, for instance Massively Multiplayer Online Games (MMOG), which usually involve a 'persistent world' where thousands of users can play together. By the early 2000s, some MMOG (e.g. World of Warcraft) had become very successful, with several million subscribers. Yet, while value proposition started to include more elements of service, the participants in the business models (major game publishers, console manufacturers, retailers) remained essentially the same.

The first radical change arose because of new market players that had no choice but to offer an entirely different kind of product. In the second half of 1990s, online 'browser' games, produced by independent developers and, originally, remakes of simple historic games (e.g. *PacMan*, *Tetris*, *Snake*), became increasingly sophisticated (MICHAUD, 2012). In the late 2000s, browser games morphed into social network games (generally hosted on Facebook), in some cases with an instantly large success (for instance, Zynga's *Farmville* reached over 10 million daily active users in a matter of weeks⁶). With such games, value proposition changed from what used to be originally a pure product offering to a full service offering ('Software as a Service' or SAAS).

Although it retains the 'product' aspect of games, the other radical change came from mobile games. Before mobile phones and smartphones, mobile games were first available on PDAs (Personal Digital Assistants, e.g. Palm, PocketPC). Although increasingly sophisticated games became available for mobile phones, it was only in 2008, with the launch of the Apple App Store for iOS devices (iPhone, iPod Touch, iPad) that mobile gaming started to become ubiquitous.

The tight control of Apple over its App Store and iOS third-party software (all apps have to be validated by Apple before they are distributed to end-users) has had radical and long lasting effects on the video game industry, as it considerably changed product offering. Beforehand, mobile games were sold like any other game, usually at a price of \$15-40⁷. Since prices were relatively high, trial versions of mobile games (which would stop working after some time or had limited features) were generally available for free.

Apple radically changed this model by forbidding demo and trial versions of software on App Store⁸. Developers rapidly realised that without trial versions, they were unable to sell their games at the usual \$15+ price. This led to the 'lite + premium' strategy, whereby developers were simultaneously developing two different versions of their games, one with more features than the other. The introduction of in-app purchase, first for paid apps (June 2009) and then for free apps (October 2009) removed the necessity of this

⁶ <http://www.svs-con.com/node/1084929>

⁷ Handango online software store for PDA (Internet Archive).

⁸ App Store Review Guidelines state that "Apps that are 'beta', 'demo', 'trial', or 'test' versions will be rejected" (2.9) and "Apps that are not very useful or do not provide any lasting entertainment value may be rejected" (2.12).

dual distribution strategy and created the concept of 'progressive' games, in which additional levels or content could be purchased⁹. As one of the most significant departures from the original business model paradigm, games no longer needed to be sold as a whole fully-featured finished product, but, instead, could be sold 'bit by bit'.

This new model rapidly became a necessity (DILLON & COHEN, 2013). Because of the large number of independent developers entering the market, capturing a critical mass of users became crucially important. This led developers to start releasing games as soon as they had a minimum amount of critical features ("Minimum Viable Product" or MVP) in order to gather early feedback and trigger viral adoption, while developing additional features in the meantime. While this 'bit by bit' release model has been mainly adopted for smaller-scale apps and by independent developers, major game publishers have also begun to complement console games with additional downloadable content (MARCHAND & HENNIG-THURAU, 2013).

Yet, there are still significant differences in product offering between 'traditional' console/PC games and mobile games, as each type of game corresponds to a different usage. While the former correspond to a leisure activity per se, the latter are generally used in between other activities (e.g. during transit, while waiting for an appointment). Product offering has evolved accordingly. Console/PC games are still designed for a playing time between 30 minutes and several hours. In contrast, mobile games have game objectives that can be completed within a few minutes or allow frequent interruptions. To this respect, most major PC/Console game publishers (e.g. Electronic Arts) have adapted their mobile games to match these new constraints.

The different usage of mobile games has also had critical impact in terms of product innovation. Indeed, for PC/Console games, technological innovation has remained, to this day, the pinnacle of competitiveness. Better image quality, better animations, better 3D rendering, better controls typically lead to greater profits (BADEN-FULLER & HAEFLIGER, 2013). For mobile games, however, technological innovation is hardly as effective, because of the context of use and of the limitations of mobile hardware (e.g. a mobile device with 'small' screen and stereo sound vs. a 40-inch TV screen with 5.1 surround). Consequently, innovation for mobile games

⁹ In-app purchase had been used for online multiplayer games, but not for single games.

mainly relates to gameplay, as attested by the tremendous success of mobile games with very simple graphics (e.g. *Flappy Bird*).

Thus, to summarise, value proposition has evolved from a pure product offering to a greater mix between product and services. Games have evolved from finalised and static titles to modular products. Yet, there are still significant differences: console/PC games have remained closer to the original paradigm, while online and mobile games developers have adopted far more innovative value propositions.

Pricing model

Until the mid-2000s, the game pricing model was rather simple, with games sold at a fixed price, usually in the \$45-\$85 range. Prices have remained fairly stable, with a slight decrease in real terms over the past 10 years to \$45-\$60.

Yet, this simplicity hides a far more complex reality. Indeed, while video games are durable goods, their subjective durability (the amount of time the game remains played) is shorter (RAYNA, 2008) and it only takes a few weeks before new game titles are available second-hand (HENNING-THURAU *et al.*, 2007). To continue selling, game publishers have no choice but to decrease prices and, after a few months, the price of games usually drops to \$10-\$20.

Thus, in practice, the fixed pricing model gives rise to a form of second-degree price discrimination, either temporal (same product – an unused game – available cheaper at a later date) or differentiated (two products – unused and used games – available at the same time at different prices).

Furthermore, a \$0.00 'price point' should be added to the two others. Indeed, video game piracy is almost as old as the industry itself. It appeared with PC games and exploded when console games switched from proprietary cartridges to optical discs. Despite many attempts to curb piracy, using Digital Rights Management systems (RAYNA & STRIUKOVA, 2008a, 2008b) and other anti-piracy technologies, piracy rate has remained very high.¹⁰

¹⁰ Recent account by Ubisoft CEO Yves Guillemot claimed a piracy rate of above 90% (<http://www.pcgamer.com/uk/2012/08/22/pc-gaming-has-around-a-93-95-per-cent-piracy-rate-claims-ubisoft-ceo/>).

Thus, in spite of game producers and console manufacturers (who, besides trying to prevent piracy, have also attempted to restrict the second-hand market¹¹), the fixed pricing strategy of the 'old' paradigm leads to a traditional three price points 'Goldilocks' pricing.

As some games began to move towards service, game publishers, in particular those offering MMOG and online persistent environments, switched to a subscription model (in most cases around \$15 a month). Although this was effective for some games (e.g. *World of Warcraft* had 7.8 million paying members in December 2013¹²), in other cases, this prevented keeping a sufficiently high number of players engaged¹³ (a large number of active users is a key requirement for MMOG). Consequently, less popular online platforms switched to a 'freemium' model – free access to the game with paid-for additional content (ANDERSON, 2008).

Freemium also became rapidly prevalent for mobile games, in part because of Apple's App Store validation rules¹⁴. As soon as 'in-app' payments were made available on iOS, many developers started to use a 'two-part tariff' second-degree price discrimination. However, in most cases, the sheer number of competing apps simply does not allow to charge anything for the 'basic' version of the game. The 'fixed' part of the two-part tariff (which gives access to the basic service) dropped to zero and developers have to rely on in-app purchases (the variable part in the two-part tariff) as a source of revenue.

A further issue for iOS Developers is that the basic version of the game (available for free) has to provide 'lasting entertainment' for the game to be validated by Apple. Hence, 'crippled' games that necessarily require in-app purchases to be playable are forbidden. The challenge is that if the basic version of the game is good enough, who will pay for premium content? Some developers therefore adopted, instead, 'hurdle' price discrimination, by

¹¹ For instance Microsoft's plan to restrict access to used games on the new Xbox 720 console (<http://www.wired.co.uk/news/archive/2013-02/08/xbox-720-games-drm>).

¹² <http://www.mmo-champion.com/content/3741-WoW-Up-to-7-8-Million-Subscribers>

¹³ The critically acclaimed *Star Wars: the Old Republic*, despite a promising start, had to switch to free to play with in-app purchases after just few months (DILLON & COHEN, 2013).

¹⁴ Although such strict validation rules do not necessarily exist for other platforms (e.g. Android), Apple's rules changed consumers' expectations and had spillover effects in the whole industry.

introducing artificial delays and pauses in the games that can be by-passed by paying ¹⁵.

Thus, in summary, the traditional video game model relies on a fixed pricing model, which leads, in practice to an unwanted three-tier second-degree price discrimination. The 'new' paradigm also relies on price discrimination, but this time, willingly. The key difference is that in-app purchases enable an unlimited number of tiers and can even lead (as a form of 'versioning') to individualised pricing (ACQUISTI & VARIAN, 2005). A second key difference between the two paradigms is the price level. Whereas PC/Console games are still sold at a price above \$40, mobile games (even the most sophisticated ones) are seldom sold above \$10 and most are available for free (freemium model). Yet, as noted in WALDNER *et al.* (2013):

"Business models [...] have changed from selling fixed items with a onetime sales value to more service-based products, with virtual commodities, value-added services, and advertising-based strategies".

While the 'old paradigm' remains alive and well in the case of PC/console games, it has nonetheless evolved towards the new model prevalent in the mobile world.

■ Changes in value creation

The paradigm shift in the video game industry has also led to changes in the way value is created. In the old paradigm, core competencies, which reflect a company's fundamental knowledge (PRAHALAD & HAMEL, 1990), are an important factor in value creation. For example, one of the reasons why Atari failed in the 1980s was because of a lack of in-house capabilities to create new software. Similarly, the success of Sony in developing the first PlayStation can be partially explained by their previous experience in the field of electronics.

In the recent years, however, strategic positioning began to gain importance over core competencies (DAIDJ & ISCKIA, 2009), as many games nowadays (especially on mobile devices) are much simpler both in

¹⁵ A typical example is provided by Electronic Arts' *Real Racing 3*, which is free to play but requires time for cars to be repaired or upgraded, unless the player pays.

functions and graphics and do not require the same competencies. Furthermore, greater care has been taken by some platform providers to simplify game development. Unlike previous platforms, Apple's iOS development kit is renowned for being particularly intuitive and easy to work with. Likewise, Sony PlayStation 4 was specifically designed to make it easier for independent developers to contribute to game development ¹⁶.

Similarly, the distribution of key resources, such as labour (programmers) and available investment, has changed. The old paradigm, still in use for PC/console games, is characterised by a very high cost of game development. Over the last decade, the average price of developing a console game rose from \$14 million to around \$20 million ¹⁷, whereas, the cost of developing mobile, web-based and indie games is significantly lower (NOYONS *et al.*, 2012).

Furthermore, new funding models, such as crowdfunding, enable independent game developers to access core competencies that were before out of their reach. While early attempts to crowdfund games only led to relatively small amounts of funding (e.g. \$100,000 for *Venus Patrol* in October 2011), the first truly successfully crowdfunded game, *Double Fine Adventure*, raised more than \$3 million (for \$400,000 initially requested) on Kickstarter in February 2012, which made it the highest funded project on Kickstarter at the time. In July 2012, a low-cost game console, Ouya, raised more than \$8 million. Overall, eight game projects in excess of \$1,000,000 were financed in 2012 and 21 projects in 2013 ¹⁸.

As of early 2014, games remain the most popular category on Kickstarter. 8,742 game projects have been posted and successful projects (35%) generated over \$189M in funding from 2.15M pledges ¹⁹. 'Crowd' investment has more than doubled since 2012, when around \$83M was generated in this category ²⁰.

¹⁶ <http://www.forbes.com/sites/davidthier/2013/07/19/why-sony-is-betting-on-indie-games-for-the-ps4/>

¹⁷ And even reached \$265,000,000 for Grand Theft Auto V, the most expensive game title to date.

¹⁸ <https://www.kickstarter.com/discover/>

¹⁹ www.kickstarter.com/help/stats

²⁰ <http://venturebeat.com/2013/01/08/kickstarters-best-of-2012-2-2m-backers-319m-raised-18109-projects-funded/>

As the video game industry shifts towards more online content, player interactions and social gaming (where firms and communities build value together), cognitive resources (e.g. communities) increase in importance (BURGER-HELMCHEN & COHENDET, 2011). An increasing number of competencies, such as production, accumulation and circulation of competitive knowledge, are delegated to communities (SCHULZ & WAGNER, 2008). While this key resource is not controlled directly by firms, it can still be integrated into the business model by large companies and independent developers alike.

The role of complementary assets in business models is also changing. Often this subcomponent relates to complementary products and new/additional features to existing products. Adding complementary goods and services to core products has the potential to strengthen business models, whereas failure to do so may result in a subsequent failure of core products (BONARDI & DURAND, 2003).

Whereas in the 'old' paradigm, complementary products were often neglected, their strategic use is now increasing. Large studios do not typically focus on providing special/additional features in their games as much as independent developers do. For instance, out of more than 1200 Wii games produced, only 75 use Mii characters²¹ and 33 are compatible with 'Wii Motion Plus' (Wii advanced motion detector mechanism). In contrast, almost from the very start, myriads of iPhone independent game developers started exploiting its gyroscope. Unlike large studios that usually develop games for several platforms and aim at saving on development costs, smaller developers usually focus on one platform and spend more time exploiting its key features.

Value networks are also changing, in particular in relation to how developers encompass and leverage relationships with customers. Increasingly, consumers take an active part in the game development, from sales to production (ZACKARIASSON & WILSON, 2010). BURGER-HELMCHEN & COHENDET (2011) mention three types of active users: 'testers', who test the game, 'players', who enhance, fine-tune a game or produce additional content, and finally 'user-developers' who produce the whole game (e.g. Open Source). The increasing user participation can be partially explained by the development of technologies (e.g. Web 2.0) that simplify collaboration with video game companies, as well as between users

²¹ Personalised avatars that were expected to be at the core of the Wii environment.

(RAYNA & STRIUKOVA, 2010). While user participation in game development is not entirely new (users have been always trying, often without authorisation, to 'mod' games), game developers can now use it strategically to strengthen their business model.

Another important change is that developers start treating users as individuals, rather than, as it used to be the case, as segments (MARCHAND & HENNIG-THURAU, 2013). Modern technologies enable game developers to collect personal data about gamers and use it strategically. For example Zynga collects data about users' game scores and uses Facebook's advertising feature based on the score distribution among friends (BADEN-FULLER & HAEFLIGER, 2013). Not all developers, however, have yet embraced this new opportunity. Although Sony collects data about usage patterns through PlayStation Network central, this has not yet led to enhanced and tailored offers (MARCHAND & HENNIG-THURAU, 2013). Yet, the strategic use of such 'big data' can change not only the value creation component of business model, but also value proposition.

■ Changes in value delivery

Another critical change is the proliferation of distribution channels. Until the late 1990s, gaming required a dedicated hardware: a personal computer, at the very least, or, for better performance, a dedicated console. The advent of the Internet and the multiplication of connected devices (smartphones, tablets, connected TVs, set-top box) has changed this and made gaming available through many channels.

Furthermore, recent advances in high capacity cloud computing have enabled to reduce hardware requirements (Michaud, 2012). Services such as OnLive offer high performance gaming on any device, as games are 'calculated' and rendered in the cloud and then streamed to the device. Yet, current smartphones and tablets are as powerful as PCs just a few years old, so even the most portable devices can nowadays offer a significantly good gaming experience.

Nonetheless, not all developers have adopted these new distribution channels. Whereas PC games started to be distributed online in digital format a few years ago, none of the current game consoles has fully embraced this mode of distribution and, besides smaller-scale games, most games are still distributed 'boxed' through physical retail channels.

The situation could not be more different for mobile games. Indeed, whereas games typically begin their life on a particular platform, they generally cross over to multiple other platforms. For instance, *Angry Birds*, originally developed for Apple iOS platform, was then made available on Amazon Kindle, BlackBerry, Google Android, Mac OS X, Nintendo DS and Wii, Nokia, Palm Pre, PlayStation, Roku, Windows Phone and Windows 7, Xbox, and even as a web app.

This multiplication of distribution channels has also enabled to reach new market segments. Traditionally, game consoles were seldom purchased by 'casual gamers' and mass-marketed PCs were often not powerful enough to run advanced games. Departing from the traditional console marketing strategy, generally targeted at gaming enthusiasts, Nintendo designed the Wii with families in mind. This foray into casual gamer market enabled Wii to outsell all competing consoles. Yet, mobile devices have now captured away casual gamers, most of whom are likely to find their smartphone, tablet, TV or just a web browser just good enough for gaming²². In regard to value delivery, the differences between the two business model paradigms are still significant. PC/console games have retained the same distribution channels and target market segment (serious gamers), while opening the door to online delivery of more casual content (most likely with the aim to help 'justifying the cost' of purchase within a household). Meanwhile, mobile game developers tend to do just the opposite and make their games available to as many market segments as possible through as many delivery channels as possible.

■ Changes in value capture

With regard to Value capture, there are also significant differences between the two paradigms. While the new one offers many ways to create value, capturing the resulting value is particularly challenging and, so far, the revenues of mobile games are still lower than those of PC/console games (MARCHAND & HENNIG-THURAU, 2013).

Value capture for mobile games has mainly changed because of the switch of revenue models from 'pay to play' to advertisement-based (usually

²² <http://www.bloomberg.com/news/2013-12-02/nintendo-seen-missing-target-as-sony-microsoft-sales-dwarf-wii-u.html>

with in-app purchase) models. Beforehand, MMOG had experienced the same issues when the decline in subscriptions forced them to find new revenue models (DILLON & COHEN, 2013).

Currently, 90% of game revenues on the App Store come from freemium apps, the most successful one being *Puzzle & Dragons*, which brought more than \$1 billion in 2013 in in-app purchases²³. However, capturing value with such a revenue model requires a very large customer base, as only 1.5% of gamers make in-app purchases and 50% of revenue is derived from the top 10% of those players who do make purchases²⁴.

Another source of revenue is in-game advertising, a market worth \$1 billion annually²⁵. Nowadays, an increasing number of games make use of dynamic in-game advertising and enable advertisers to tailor ads to match geographical locations, time, points, or players' in-game behaviours (TURNER *et al.*, 2011). However, no matter how high the potential revenues are, the number of developers and games has become extremely high and the distribution of revenues is very skewed, thereby calling into question the ability of any given game to earn enough revenues to cover development cost.

The increasing importance of complementary goods and services in value creation lead them to play a more important role in value capture. For example, successful games earn revenues from other entertainment media, such as books and movies (MARCHAND & HENNIG-THURAU, 2013). In 2012, Rovio (*Angry Birds*) earned 45% of its \$71 million profits from 'consumer products'²⁶.

Finally, value capture can be improved by using new distribution channels, which enable to increase profit margins by eliminating retailing and manufacturing costs, e.g. disks and boxes (MARCHAND & HENNIG-THURAU, 2013). In fact, the new paradigm can be considered as 'costless', once the product has been developed.

²³ http://www.gamasutra.com/view/news/210021/GungHo_reaps_over_1_billion_in_Puzzle_Dragons_revenue.php

²⁴ <http://www.swrve.com/company/press-room/swrve-finds-0.15-of-mobile-gamers-contribute-50-of-all-in-game-revenue>

²⁵ <http://www.officialplaystationmagazine.co.uk/2013/11/01/when-ads-invade-games-in-game-advertising-is-worth-over-1-billion-a-year/>

²⁶ <http://techcrunch.com/2013/04/03/rovios-revenues-up-101-to-195m-non-games-45-of-that-net-profit-71m/>

Once value (or a part of it) is captured, the next important question is how it is allocated. In the mobile ecosystem, profit allocation between developers, operators, suppliers and application store owners depends essentially on their respective market power (FEIJÓO *et al.*, 2012). For developers using external platforms (e.g. Facebook, AppStore) a decision has to be made of whether to run transactions via this platform or to bypass it. Also, as users are now increasingly involved in game design and production, this might create further profit allocation issues in the near future. When comparing the 'old' and 'new' paradigm, one could get the impression that the former enables PC/console game publishers and hardware manufacturers to capture value more easily. Although it is true that such games tend to generate more revenue, they are also significantly more costly to produce (technological innovation is still critical for PC/consoles) and second-hand markets and consumer piracy also hinder value capture.

■ Changes in value communication

Changes in value communication have been highly instrumental in the success of the new business model paradigm. For PC/console games, value communication generally takes place through communication channels (e.g. ads in magazines, television, cinemas) that are, generally, out of reach for independent developers. Recently, however, the availability of many more communication channels, in particular social media, has enabled independent developers to communicate about their games to a large audience. Furthermore, besides YouTube, Facebook and the likes, platforms themselves play a critical role for mobile games (e.g. 'Best new games' category on the App Store).

While still using traditional communication channels, large studios and console manufacturers have, in contrast to their occasional reluctance to adopt new technologies and to follow new trends, eagerly adopted social media as communication channels, just like independent developers. Nowadays, most game developers, whether small or large make use of YouTube, Facebook and Twitter to promote their games.

With regard to ethos and story, more established companies are, of course, in a better position to communicate about it than newly funded companies (generally associated with the mobile games), although occasionally an independent developer gets in the spotlight (e.g. hundreds

of news articles published about Flappy Bird developer and his story). Yet, as noted in GENVO (2013), there have been significant changes in the ethos of gaming over the past few years, in particular with a further expansion of video gaming towards educative gaming and 'serious gaming'. To this respect, independent developers, because of their greater flexibility, shorter time to market and ability to occupy niche markets, have taken the lead, while traditional game studios have mainly continued to release titles that correspond to the traditional gaming ethos.

■ Conclusion

By providing an exhaustive overview of the two major business model paradigms in the video game industry, this article has shown that they are indeed different in almost all components.

While this could have been expected, what is more surprising is the co-existence of radically different business model paradigms and, despite the progressively tighter integration of both markets (with PC/Console game publishers being very active on the mobile front and mobile game developers reaching PCs and consoles), the relative lack of evolution of both paradigms. On the one hand, console game publishers and manufacturers still employ the same model they have been using for the past 40 years, despite the ever greater share of revenues captured by new entrants. At the same time, mobile and online games, despite their large success, still struggle to capture revenues and turn them into profits.

Overall, the question is whether either paradigm is particularly adapted for a world of intense competition. As mobile games are catching up in quality and features with even the most advanced console games, the question is for how much longer, aside from the most hard-core gamers, are consumers going to upgrade their consoles to the next generation. With regard to the mobile app paradigm, the question is whether, in an environment where consumers have access to hundreds of thousands of games for free, consumers will still want to spend a significant amount of money on in-app purchases for all but a few 'superstar' games. Moreover, just as competition has forced game developers to drop the price of 'lite' versions of the games to zero, is it not possible that the price of in-app purchases will also drop significantly? Despite its long lasting success and

very large revenue, could it be that the video game industry is a giant with feet of clay?

In light of these questions, two interesting avenues for further research would be, firstly, to consider the changes in internal structure and organisations of firms operating in the video game industry, in particular in relation to greater user and community engagement, secondly, to draw comparisons with other sectors of the cultural industries, as the recent changes (and those ahead) in the video game industry have the same roots as those affecting other cultural industries.

References

- ABDELKAFI, N., MAKHOTIN, S. & POSSELT, T. (2013): "Business model innovations for electric mobility: What can be learned from existing business model patterns?", *International Journal of Innovation Management*, 17(01).
- ACQUISTI, A. & VARIAN, H. R. (2005): "Conditioning prices on purchase history", *Marketing Science*, 24(3):367-381.
- ANDERSON, C. (2008): "Freel Why \$0.00 is the future of business", *Wired Magazine*, 16(03).
- BADEN-FULLER, C. & HAEFLIGER, S. (2013): "Business models and technological innovation", *Long Range Planning*, 46(6):419-426.
- BIEGER, T. & REINHOLD, S. (2011): "Das wertbasierte Geschäftsmodell – ein aktualisierter strukturierungsansatz", in *Innovative Geschäftsmodelle*, pp. 13-70. Springer.
- BONARDI, J.-P. & DURAND, R. (2003): "Managing network effects in high-tech markets", *The Academy of Management Executive*, 17(4):40-52.
- BURGER-HELMCHEN, T. & COHENDET, P. (2011): "User communities and social software in the video game industry", *Long Range Planning*, 44(5):317-343.
- CHESBROUGH, H. (2007): "Business model innovation: it's not just about technology anymore", *Strategy & Leadership*, 35(6):12-17.
- DAIDJ, N. & ISCKIA, T. (2009): "Entering the economic models of game console manufacturers", *Communications & Strategies*, (73).
- DILLON, R. & COHEN, O. (2013): "The evolution of business models in the video game industry", in *Proceedings of the International Conference on Managing the Asian Century*, pp. 101-108, Springer.

FEIJÓO, C., GÓMEZ-BARROSO, J.-L., AGUADO, J.-M. & RAMOS, S. (2012): "Mobile gaming: Industry challenges and policy implications", *Telecommunications Policy*, 36(3):212-221.

GENVO, S. (2013): "Penser la formation et les évolutions du jeu sur support numérique". Mémoire pour l'habilitation à diriger des recherches, Université de Lorraine.

GIESEN, E., BERMAN, S. J., BELL, R. & BLITZ, A. (2007): "Three ways to successfully innovate your business model", *Strategy & Leadership*, 35(6):27-33.

HENNIG-THURAU, T., HENNING, V. & SATTler, H. (2007): "Consumer file sharing of motion pictures", *Journal of Marketing*, 71(4):1-18.

HOLM, A. B., GÜNZEL, F. & ULHØI, J. P. (2013): "Openness in innovation and business models: lessons from the newspaper industry", *International Journal of Technology Management*, 61(3):324-348.

JOHNSON, M., CLAYTON, C. & KAGERMANN, H. (2008): "Reinventing your business model", *Harvard Business Review*, 86(12):50-59.

KOEN, P. A., BERTELS, H. M. & ELSUM, I. R. (2011): "The three faces of business model innovation: challenges for established firms", *Research-Technology Management*, 54(3):52-59.

MARCHAND, A. & HENNIG-THURAU, T. (2013): "Value creation in the video game industry: Industry economics, consumer benefits, and research opportunities", *Journal of Interactive Marketing*, 27(3):141-157.

MATTHYSSENS, P., VANDENBEMPT, K., & BERGHMAN, L. (2006): "Value innovation in business markets: breaking the industry recipe", *Industrial Marketing Management*, 35(6):751-761.

MICHAUD, L. (2012): "Technical architecture and advantages of cloud gaming", *Communications & Strategies*, 85:203-209.

NG, I. C., DING, D. X. & YIP, N. (2013): "Outcome-based contracts as new business model: The role of partnership and value-driven relational assets", *Industrial Marketing Management*, 42(5):730-743.

NOYONS, M., RUTE, C., ROBERTSON, E., & DOBRAJS, K. (2012): Mobile games architecture: State of the art of the european mobile games industry. Technical report, Mobile Game Arch.

ØIESTAD, S. & BUGGE, M. M. (2013): "Digitisation of publishing: Exploration based on existing business models", *Technological Forecasting and Social Change*.

OSTERWALDER, A., PIGNEUR, Y. & TUCCI, C. L. (2005): "Clarifying business models: Origins, present, and future of the concept", *Communications of the association for Information Systems*, 16(1):1-25.

- PRAHALAD, C. & HAMEL, G. (1990): "The core competency of a corporation", *Harvard business review*, 68(3):79-91.
- PwC (2012): *Global entertainment and media outlook: 2012-2016*, Report, PricewaterhouseCoopers.
- RAYNA, T. (2008): "Understanding the challenges of the digital economy: The nature of digital goods", *Communications & Strategies*, 71:13-26.
- RAYNA, T. & STRIUKOVA, L.:
- (2008a): "Privacy or piracy, why choose? Two solutions to the issue of digital rights management and protection of personal information", *International Journal of Intellectual Property Management*, 2(3):240-252.
- (2008b): "White knight or trojan horse? The consequences of digital rights management for consumers, firms and society", *Communications & Strategies*, 69:109-125.
- (2010): "Web 2.0 is cheap: Supply exceeds demand", *Prometheus*, 28(3):267-285.
- SCHULZ, C. & WAGNER, S. (2008): "Outlaw community innovations", *International Journal of Innovation Management*, 12(03):399-418.
- TEECE, D. J. (1986): "Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy", *Research Policy*, 15(6):285-305.
- TURNER, J., SCHELLER-WOLF, A. & TAYUR, S. (2011): "Scheduling of dynamic in-game advertising", *Operations Research*, 59(1):1-16.
- WALDNER, F., ZSIFKOVITS, M. & HEIDENBERGER, K. (2013): "Are service-based business models of the video game industry blueprints for the music industry?", *International Journal of Services, Economics and Management*, 5(1):5-20.
- ZACKARIASSON, P. & WILSON, T. L.:
- (2010): "Paradigm shifts in the video game industry", *Competitiveness Review: An International Business Journal Incorporating Journal of Global Competitiveness*, 20(2):139-151.
- (2012) (Eds): *The Video Game Industry: Formation, Present State, and Future*, volume 24 of *Routledge studies in innovation, organization, and technology*, Routledge.
- ZOTT, C. & AMIT, R. (2002): "Measuring the performance implications of business model design: evidence from emerging growth public firms", Working paper 2002/13/ENT/SM, INSEAD, Fontainebleau, France.