



The Rise and Rise of Video Games Empires

The Death of Hardware and the Rise of Cloud



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The Rethink Difference—and Method

Rethink Technology Research has begun to pioneer a series of forecasts that focus on deep industry changes, we specialize in asking questions about when an industry starts and ends or goes into its next phase, and when it is going through a major contraction. Forecasters are pretty poor at forecasting market decline and yet many technology markets are on the verge of inevitable decline.

Major contractions appear in an industry, usually at a time when disruptive innovation occurs, and this can come during a period of uncertainty or technology transition, such as the industry shift from analog to digital which heralded Apple's arrival in consumer electronics, or when a particular player changes the rules with a new class of product.

One trigger for disruptive innovation is when something comes along that is half as good, but costs a tenth of the price, and this is the case when tablets are used for TV viewing, making it a killer app, increasing witnessed in the US and Western Europe. Other things which have changed the rules inside a technology sector include the introduction of touch screens to handsets, the arrival of the CMOS RF tuners in TV sets, set tops and DOCSIS modems. Another similar event on the near horizon (which have already dealt with in a report) is the emergence of WiFi as a key driving force for the cellular market.

At these points in technology history, there are structural changes in the sector eco-system and new market leaders emerge. The old rules no longer apply and some leaders fall by the wayside. Famous brand names disappear or at

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least go into reverse, while new names flourish. One of the problems of trying to forecast during these periods is that the old methods of plotting the existing dots in a linear fashion, and extending them, no longer works. All we can hope to do is to describe the future market shape and point to those who will lead it, and put in some rough numbers to plot the order of magnitude of the changes. It is important to scope out the level of decline in the existing market. This can give market players the right clues to what is going on and help them survive. It is not a good idea to spend on marketing when R&D needs your dollars. One of the worst feelings in the world for an executive trying to plan a business is to continue to invest in the past, when the future is beckoning urgently.

Disruption forecasting will be with us for a while, as Rethink has identified at least 6 major hurdles in the way of linear market progression, in the TV, pay TV, broadband, broadcast and cellular sectors, not to mention the Internet of Things. Things are not going to be normal in these markets for some time, which is why executives have stopped buying conventional market studies. The best thing affected players can do is to try and picture the shape of the market in the future and position themselves with the right product lines and the right cash reserves, and a cost structure for survival, and to reset the expectations of their shareholders around the new truths that dictate the new normal.

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Video Games: A brief history

Video games have evolved from the experimental hijinks of academics with access to exorbitantly expensive computers in universities, to the highly personal ubiquitous games found today on smartphones. Since the first video games on oscilloscopes in the 50s, the gaming experience has moved in line with hardware costs, becoming a very accessible industry – worth tens of billions of dollars, and growing every year.

In the early days of video games, public arcades meant that hundreds of people could play for the cost of a few coins on a machine that would cost the equivalent of several months' worth of the average household wage. Multiple machines meant that gamers had an entire library to choose from, and it was in the industry's interest to keep updating the arcades with the newest titles. The public setting also allowed a competitive edge to evolve, with players competing to leave their high score on the home screen for all to see.

But as the cost of computing power decreased the distribution model shifted to a more personal experience, on dedicated gaming machinery which is end user owned. This gave rise to the consoles of the 80s that have persisted to the present day, as well as video games on PCs.

These pre-broadband consoles moved from the gladiatorial and high score focused games (perfect for the public arena) into story-driven and narrative video games, with the Super Mario and Zelda Series being perhaps the most notable examples of this period in video game history, before consoles utilized home broadband connections.

While Microsoft's Xbox and Sony's PlayStation 2 had a few titles near the end of their lives that could allow gamers to play against other players in online arenas, it was the following generation of the Xbox 360 and the PlayStation 3 that really embraced online multiplayer. In a similar time frame, around 2006, social media websites began adopting browser-based Flash games as significant page view generators, and as smartphones emerged into mass market devices, these sorts of Flash games migrated across from PC web browsers to smart phone apps.

It was only when smartphone hardware had caught up with PCs and older generation consoles that gaming could become a prominent

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experience on mobile – years ahead of the old Tetris and Snake games that were found on handsets such as the Nokia 3310.

Games on mobile phones were initially only meant to kill time, as they couldn't be the engaging experience of arcades or consoles due to the constraints of the input mechanisms (keypads vs. joysticks and buttons), or immersion (large screens, substantial sound systems, mechanical feedback). The restrictions of internal storage also meant that a mobile game couldn't rely on being story-driven to engage the player, as a lengthy narrative arc would chew up too much storage space.

And strangely, this trend has continued despite rapid improvements in the gaming capabilities of mobile hardware in recent years. The flagship handsets of today are more powerful than the Xbox 360 and PS3, but mobile has not taken off as a 'serious' gaming platform – a realm still dominated by the consoles and PCs. This is largely due to the constraints put on a handset by its battery life, as processor-intensive tasks like gaming will drain a battery very quickly. This results in mobile users treating mobile gaming as a 'killing time' task for queues or commutes rather than a 'sit down' experience such as consoles.

But despite this, mobile gaming's revenues are on the up across the board, despite being a fairly radical departure from the other video game industry business models. Games of the Nokia 3310 era were bundled on the phone by the manufacturer, not quite as an after-thought, but definitely not a key feature or unique selling point. In fact, adding games to the phone once bought was quite difficult on most feature phones, largely based around SMS deals and subsequent data download links. Some networks slowly embraced games via their own web portals, with downloads possible on the later models, but again these were comparatively exorbitant compared to the mobile games of today.

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New Approaches: The Freemium Model and the rise of Mobile gaming

This is because in the smartphone and app store era, most games on handsets are offered for free and hope to convince players to spend small amounts of cash in game on virtual bonuses. These micro-transactions are a core part of the Freemium business model, which hopes to entice gamers through the door with no upfront charge and then make a few dollars here and there as players are subjected to the increasing difficulty or longer waiting times to replenish either abilities or lives/credits ('cool downs') that are inherently built into the games to encourage micro-transactions.

The Freemium approach has also been found on console and PC gaming, especially in the world of 'free-to-play' (F2P) massively multiplayer online games (MMOs) which are frequently criticized as being 'pay-to-win' (P2W) rather than F2P thanks to the advantages given to players who use micro-transactions to purchase better in-game items and abilities.

The other approach to game design is to charge nothing for the game but to insert advertising into the experience, usually in the form of banner ads at the bottom of the screen (conveniently near to key buttons to encourage accidental click-throughs, some would say) or to put adverts on loading screens. Viral sensation Flappy Bird cost nothing for gamers to download but was so popular that the single hobbyist developer was reportedly making tens of thousands of dollars each month in ad revenue before he pulled the game from the app stores due to the overwhelming response.

iPhones with the app installed were selling for thousands of dollars after the app was no longer available, and really it all got a bit weird. Flappy Bird is now set to return as an Amazon Fire TV app, which is something of a win for Amazon in terms of exclusivity but perhaps a little late given that viral sensations have incredibly short shelf lives.

Nonetheless, mobile gaming is currently a huge market. Figures from a CyberZ report on mobile gaming in Japan, China, South Korea, Taiwan and Hong Kong showed 2013 revenue doubled in a year to reach \$8.9 billion, with the report forecasting 2014 revenues at \$12.1 billion and 2017 at \$21.1 billion – all this on games that are designed to be addictive and encourage micro-transactions to re-

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ceive that fix. There's a reason why Candy Crush requires you to beg your Facebook friends for credits or why Farmville tries to get players to post activity or requests to their public profiles. In the Freemium model, the player is not the customer, for they are not paying. Instead, they are almost entirely a product for advertisers.

But it's a business model that shows no real signs of slowing. Strategy Analytics reports that global video game spending will grow 10% to \$62 billion in 2014. The new consoles will drive disk sales up 16% to \$25.5 billion, online gaming will grow 7% to \$19.4 billion, and mobile games will increase 6% to \$17.3 billion. While online and mobile gaming have increased in market share, disk-based game sales have fallen from 68% of all revenue five years ago to 41% of the market.

So a predicted global worth of \$17.3 billion for mobile games that predominantly are Freemium models shows the scale of the mobile market that accounts for 28% of the total. Strategy Analytics notes that mobile gaming is more popular in Asia, and that console and PC spending in Europe and America is roughly twice that of Asia. The report notes the growth in mobile gamers, with the number growing 14% in 2014 to 1.7 billion and crossing the 2 billion mark in 2016.

That's a huge number, and means that each mobile gamer in 2014 is worth around \$10 to the gaming industry each year – predominantly on the back of micro-transactions and advertising given that paid downloads are vastly outnumbered in app store downloads by free versions of paid games or completely free games.

Eric Smith of the firm says 'while there are some structural concerns around the over-supply of cheap to free games – particularly on smartphones and tablets – the games industry remains in rude health. Humans have always played games, it's up to the industry to provide the outlets which best match contemporary habits. Given the breadth of innovation set to hit the market over the next few years - whether Oculus Rift VR, Steamboxes or the lively Android-based micro-console scene, there has never been a better time to love playing video games.'

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Threats to the industry: Imitation, Stagnation, Hardware Agnosticism

There are a few issues with Smith's optimism, or at least in the examples he gives. Mobile gaming, as we've discussed earlier is not typically viewed by its participants as serious gaming. Sure, it's fun and often addictive, but it isn't sit down marathon gaming for entire Sundays - like the binge-viewing equivalent to Netflix. Until mobile games start innovating instead of endlessly imitating, they aren't particularly exciting and can't be thought of as the future of gaming even though they are collectively a big earner for the industry.

As such, the main issue with Smith's outlook is that he cites concerns with the issue of oversupply of freemium games, while remaining optimistic about the 'breadth of innovation set to hit the market over the next few years.' We're sorry for using Flappy Bird as a constant example, but in the wake of its emergence and subsequent disappearance, the Android and iOS app stores were flooded with thousands of imitations hoping for downloads - shamelessly ripping off what was objectively a lag-filled, repetitive, and most importantly, completely free game. The app stores boast about having over a million apps, but never publish figures that show what percentage of apps are imitations or flagrant copies of more popular programs.

Smith is almost certainly aware of the issue, being only a few words away from saying it explicitly, but one of the reasons why mobile gaming remains a low margin experience for developers and a time-killing activity for gamers is that there are so many free to download mobile games on the market that gamers don't have to pay a penny to kill time for a few minutes each day. It's simply a matter of downloading the next app when you get tired of your current one. There's almost no customer loyalty to brands, and most games submitted to the stores never turn a profit. Many are never even downloaded.

But there is another issue in Smith's closing statement, and that is his optimism, which appears to be industry-wide, that new hardware will spur the industry to new heights. We aren't as confident that devices like Oculus Rift will dramatically boost revenue simply due to the fact that it's expensive. While photorealistic virtual reality headsets will no doubt enjoy more success than Nintendo's forays into the field with its 1995 Virtual Boy, which cost \$180 and was discontinued after 9 months, they are still a gaming accessory - and ac-

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cessories never sell as well as the fundamentally required hardware and disks. Gamers, and often their parents, want to spend as little as possible to receive the core experience. It's hard to justify a \$400 VR headset when the console costs the same amount. The Rift project has just been acquired by Facebook for \$2 billion, but there is still no product launch date some 5 years into serious development. It may be technologically impressive, but it's hard to see it being a mass market device.

Similarly, Smith points to Steamboxes, the DIY or OEM way to get a PC in the living room running the Steam operating system. Steam is the largest games portal and distribution service in the world and lets users download a client through which they can buy and launch games. Steam provides the DRM and automatic download and update managers, and users are able to play their Steam purchases from any computer they log in from.

The official Steamboxes were due to launch this year but were postponed until 2015 at the earliest. OEM launches are going ahead this year, as planned. But the Steambox concept is also a strange one given that it is a PC in a console form factor - which begs the questions; if you want a console-sized box to play games on why not just buy a console, and if you want a PC in the living room why not just put your PC in the living room? The answer is that Steam has a much greater library of games than consoles, but that's a fact that doesn't seem to be deterring the sales of the Xbox One or PS4 currently.

But Smith is right in saying 'there has never been a better time to love playing video games,' as access to games in general has never been easier. Every mobile device has the ability to play some very compelling and enjoyable games if you can wade through the torrent of titles vying for your attention in the app stores, and the PC and console game developing incumbents are being shaken up by crowdfunded ventures and a resurgence in the popularity of low-budget independent developer games.

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Recent events: DLC, Micro-transactions, Gamer resentment

In the earlier chapters, we looked at how video gaming has evolved from its origins to the present day. Now we'll look at what the \$62 billion industry comprises, before looking at where it seems to be heading and the most likely changes in the pipeline.

Video gaming has never been so pervasive. Every web browser, every smartphone, all the games consoles, even set tops - these are all the devices that a consumer can use to play games today, and it's a list that is likely only to keep growing.

And the types of games played are incredibly varied, ranging from colorful Tetris imitations, to increasingly photo-realistic sports simulators and first person shooters - the former more prevalent in web browsers and mobile devices, with the hardware-intensive latter found on the likes of consoles and PCs.

The most obvious difference between the two flavors is the business model, with the more casual games embracing the freemium approach, while the consoles and PCs stick more closely to the traditional business model of selling the platform and the individual games to the consumer for an upfront fee.

But that's not to say that there aren't paid-for games on the mobile side of things. On the contrary, developers frequently offer an advert-free version of a game for a small fee, and the micro-transaction model of paying small sums for exclusive items or character 'skins' (clothes, hair colors, etc.) shows no sign of going away.

Micro-transactions have also been embraced by the larger publishing houses in the consoles and PC spheres, with the likes of Electronic Arts and Activision frequently supplementing their titles with additional downloadable content (DLC, formerly referred to as Expansions). For a fee, these DLC packs add new levels, weapons and abilities to the game, which are crucially not available to gamers who still pay the full retail price at launch. In order to have access to every feature of a flagship game at launch, a gamer may have to pay the standard \$60 for the game itself and anywhere between \$5-60 for the DLC.

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In recent years, the gaming media and public have become increasingly hostile to the practice of selling 'zero day' DLC and pre-order exclusives for games - which flies in the face of the traditional approach of releasing a game and sometimes following it up after a year or two with one or two DLC expansions to extend the life of the game, or else with a full-blown sequel, pending financial success.

Due to this practice, the business model for the largest console and PC game publishers has created a market for games from independent developers, often financed through crowdfunding websites. Prior to the advent of crowdfunding's popularity, it was much harder for an indie-dev to publish a game without the support of one of the major players. Now, indie games are frequently in the top ten lists of bestselling PC games, while slowly gaining entry into the console markets. Arguably the biggest indie game of the last decade is the phenomenon Minecraft - which many non-gamers are familiar with. This is a title that successfully transitioned from PC to consoles.

These indie games often fill niches that their backers feel are not being served by the larger developers - largely due to the huge amount of money invested in the development of each iteration of 'Call of Duty' or 'Battlefield,' with advertising budgets frequently eclipsing the development costs. The tens and sometimes hundreds of millions of dollars spent per title seems to encourage conservatism at the expense of innovation. A game like Minecraft - colorful, child friendly, non-linear in terms of its gameplay, open ended, a gigantic 'sandbox' for you to play in - would not have come from the big players in the industry due to their conservatism, and Minecraft has gone on to become one of the bestselling titles in history, while the likes of Call of Duty have become the butt of many jokes and the targets of a lot of resentment due to their increasingly unfriendly pricing tactics of micro-transactions and DLC.

And so it's a strange circumstance that in the more serious flavor of video gaming that a crowdfunded game project presents the fact that you actually have to pay for it as a selling point - such is the level of resentment for what freemium games have done to what was a vibrant industry that is now stagnating under the weight of free to play, day-one and pre-order DLC, and wave after wave of franchise installments at the expense of new titles coming to market. But the same argument can be made about the overwhelming selection of games in the mobile app stores. Gaming feels increasingly like a game of finding a needle in a haystack.

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Static gaming vs. Mobile gaming

The video gaming industry as a whole is roughly split into two distinct strands - mobile gaming and what we'll term static gaming. As our naming scheme suggests, mobile gaming is gaming on the go, on devices that let you play regardless of location. This predominantly incorporates offline games played from local storage on the device, but could also include purely cloud-based gaming using an internet connection (more on that later) as well as traditional games with an online element.

Static gaming is the opposite of mobile. This term will be used to describe gaming that takes place on hardware that can't easily be moved around in a daily routine i.e. consoles, desktop PCs, set tops, smart TVs. As we saw earlier, static gaming has the longer history, as mobile gaming has only really taken off after improvements in hardware brought the experience up from the likes of Snake and Tetris to games that can offer a console-like experience.

Traditionally, the console and PC experiences have been much more technically complex than their mobile counterparts, but the newer entrants into the static gaming ecosystem (low-computational power smart TVs and set tops) have warped the view that static games are guaranteed to be more visually impressive and immersive experiences than mobile gaming. You can now play Angry Birds on a smartphone, Apple TV, Roku, TiVo, Xfinity X1 - the list goes on.

Amazon's new Fire TV net top appears to be selling itself as a genuine alternative to a console, with the backing of an Amazon-owned gaming studio that is developing exclusive games for the platform, as well as its \$970 million purchase of Twitch.tv - a web site where viewers can watch others play games and participate in live chats. Although we doubt that the net top is going to steal market share from the established players, the gaming element could be the difference between the purchase of an Apple TV or the Fire TV.

New consoles and subscription services; - A Netflix for games?

But despite the ubiquity of smartphones and the improved mobile gaming experience, the latest generation of consoles appear to be performing well in the market - with Sony the clear winner in the early stages of the latest console war.

Sony has just announced that its PS4 has sold 10 million units worldwide, jumping from 7 million sold in April. It's also rolling out version 2.0 of the console's firmware which will introduce the Share Play feature, which allows a user to invite a friend to join their game online even if the friend does not own their own copy of the game - otherwise known as cloud gaming.

The requirement to use this service is only that the friend is a PlayStation Plus subscriber - Sony's \$10 monthly subscription for online gaming on the PS4, which includes access to a changing selection of games each month and cloud storage features. There are still a number of unknowns regarding other restrictions, including whether only digital purchases will count or if physical discs will be included too, but this service moves gaming from the home into the cloud.

This is actually a very similar mechanism to one that Microsoft intended to introduce with its own next gen console, the Xbox One. However, a bungled launch announcement process, combined with the decision to bypass physical disc sales in favor of digital distribution of game licenses tied to individual user accounts, meant that the Xbox One's game-sharing functionality was pulled before it ever arrived.

In its original vision, a user would have been able to share their library of games with friends and family members on the condition that the console would phone home to an authentication server daily. If the connection couldn't be made, the games would be unplayable to the user. In the prerelease news cycle, the gaming press focused more on the need to phone home or face being locked out of the console than the new ability to share one game with many friends. Combined with Microsoft's ill-advised decision to premier the console to the world as a media center for the living room in-

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stead of as a primarily gaming focused machine led many journalists to suggest that Microsoft had lost its way. In comparison to the straightforward PlayStation 4, the Xbox One with its all-seeing Kinect eye that could follow users was a step too far. Consequently, Xbox One sales have rapidly fallen behind Sony's machine.

This has led Microsoft to scrap the mandatory bundling of a Kinect with the Xbox, and to slash the price of the console by \$100 to bring it in line with the PS4. Initially declaring that the Kinect was integral to the Xbox One experience, this backpedalling has led many stock market analysts to float the idea that Microsoft will eventually offload the Xbox decision - an idea that they believe is given credence due to new CEO Satya Nadella's regime change, which also saw Microsoft axe its Xbox Entertainment Studios which was established to produce video exclusive content for the platform. Every revision Microsoft has made to the Xbox One has been to refocus it towards purely video gaming, a priority Sony never really deviated from. Microsoft somewhat bungled reinventing the wheel.

Microsoft's new console is only shifting 60,000 units a week - half the amount that Sony sells. So while the number of PS4s in the wild is now upwards of 10 million, Microsoft still won't release up to date sales figures. We know it has shipped upwards of 5 million units to retailers as of April, and has also just secured a distribution deal with the Chinese government which allows 5 million of the consoles into the country at a price tag of \$600. Whether this can help the console leapfrog the PS4 remains to be seen, but it seems that a conservative estimate puts the number of Xbox One's in consumer homes at around 5 million.

Microsoft has also to counter the fact that flagship titles available on both consoles routinely perform at higher frame rates and resolutions on the PS4 thanks to its more powerful hardware. Poor sales and lower performance could be the thin wedge-end of a developer exodus to Sony in the long run - especially as upgrading the hardware design would most likely compromise the performance of previous games that have been coded to run on the exact hardware quirks of the console. This makes it very tricky for Microsoft to simply upgrade the platform's performance without endangering its existing content library.

The Emerging Model: Cloud-based, hardware agnostic, subscription service

But this generation of consoles could well be the last of their breed – despite new rumors of a 2015 hardware refresh; and embarrassing admission of incompetence or defeat depending on which camp you listen to. Their business model has depended on selling a console, often at a loss against the Bill of Materials costs and making profits over the life of the console, through software (game) sales. Cutting out the hardware would drastically improve margins, and moving to a cloud gaming and streaming model would allow the companies to provide much less expensive hardware, if any at all, and perhaps even move to a subscription model such as Netflix - or the cloud gaming brands OnLive and Gaikai both recently acquired by Sony.

All that is really needed for this Share Play experience is a solid internet connection, a game controller pad and a screen. But this model of monthly subscriptions to play games via the cloud is one that could prove the death knell for consoles. Both OnLive and Gaikai functionality is available in smart TVs, and the local processing requirement for this kind of system is much cheaper to integrate than something like a console or PC - that is to say, that this approach could make video gaming a screen/hardware agnostic experience.

The rapid improvement in the potential quality and performance of mobile gaming has come about because mobile hardware has improved rapidly over the course of the last few years. Future advances in cloud computing and streaming could easily put the mobile gaming experience on par with static versions. The basic premise of cloud gaming is that the physical and graphical computational processing is performed in the cloud before being sent to the mobile device - thus removing the hardware constraints and requirements from the device and moving them almost entirely into the cloud.

The benefits of these platforms are, however, entirely dependent on the quality and latency of the internet connection between the cloud and the end user device. Given the well-documented trouble that Netflix has had providing its customers with a reliable stream for its content, cloud gaming as a viable mass market product is currently hindered by the bandwidth and latency requirements, and apparently the whims of the ISPs too. These requirements could also

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prove a bottleneck on cellular connections or even through WiFi connections on public networks.

If it can provide a satisfactory experience, cloud gaming is poised to be revolutionary for the entire industry. Both the cloud-gaming services have received favorable reviews, with only occasional problems with latency and frame rates. Graphical quality was limited to a 720p resolution, with some of the faster paced games suffering from poor video compression. But if the technology and internet connection improves, could this model signal the demise of hardware and the rise of the cloud gaming experience?

Gaming's influence: eSports and spectatorship, Amazon buying Twitch.tv

Above, we looked at the evolution of video games from their origins to the present day, before discussing whether cloud gaming could replace gaming hardware in the near future. While the technology for cloud gaming exists today, the biggest roadblock is the quality of the internet connection between cloud server and end device. Now, we look at shifts in the future market, before looking at the technologies and products that have not or have only just made it to market.

In the past few years, video gaming has become an increasingly digital-first affair. Evidence of this shift towards digital distribution can be found in a DFC Intelligence report, which found that 92% of PC game sales in 2013 were digital downloads, meaning only 8% were purchased as physical discs. In 2010, NPD estimated that downloads accounted for 48% of PC game sales, and the growth to 92% will be on the back of improvements in internet download speeds as well as the general growth of the online platforms like Steam, EA's Origin, and smaller outlets such as Good Old Games and GameFly.

This is radically different from consoles, which have yet to embrace a digital distribution platform like Steam largely due to Sony and Microsoft's complex relationships with the developers that create games for their hardware platforms. On console games, physical sales still dwarf digital downloads at something like a ratio of 80:20 for the flagship titles – with EA saying that “full game downloads” account for only 10-15% of its sales. And this year, there was something of a quiet revolution in the static gaming market, as PC game sales surpassed console game sales for the first time. This is being

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attributed to the popularity of freemium and free to play games such as DotA 2 (Defense of the Ancients II) and League of Legends. The level of micro-transactions in these games is enough to support a live video gaming tournament that was broadcast on ESPN. The International is run by Valve, the company behind the Steam platform and DotA 2, and the 2014 event had a prize pot of \$10.93 million, with teams of players competing for the grand prize of \$5 million.

An audience of fans watched the contest on Twitch, Amazon's recent \$1 billion purchase, and also on ESPN2 and ESPN3. Valve claims that the event had 20 million unique viewers during the entire playoff process, with a maximum peak viewership of 2 million – not including the 11,000 fans that attended the final in Seattle's KeyArena. ESPN said "viewing figures exceeded expectations across the board," and the Xbox was the leading viewing platform (notably a console on which the game cannot be played, but one that is usually hooked up a large TV in the home).

The International was such a success for ESPN that it said it planned to increase its eSports (video game contests competing for cash prizes) in the future. The official line is that the company has not committed to any future coverage, but the Daily Dot cites sources close to the company that contradicts the party line. While ESPN3 is an online service, the ESPN2 coverage of The International comprised a documentary on the cable channel. eSports are on the up, with the New York Times dedicating front page coverage of the International last Sunday.

In that article, the paper cites data from SuperData Research that says 70 million people watch eSports globally, and notes that South Korea (an early adopter of competitive spectator gaming largely thanks to the quality of its broadband infrastructure) has a dedicated TV channel for eSports.

This year's League of Legends World Championship is on track to sell out a 45,000 seat stadium in Seoul, with last year's final drawing 32 million unique viewers and a peak concurrent audience of 8.5 million viewers – around four times that of the International.

Activision, the publisher of flagship console title Call of Duty, has also sponsored a \$1 million tournament for its first person shooter. Coverage of that was also hosted on ESPN's online service, but the aforementioned Daily Dot sources suggest that the licensing process was far more complex than coverage of the International.

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The shift from a one-off fee to an ongoing payment relationship

These audience figures are a lucrative option for marketers to attack. This shift to mass spectatorship that supplements and sometimes surpasses actual playing is another way in which the video game business model is shifting. Micro-transactions, downloadable content and the advertising revenues all represent the move towards a multi-year consumer/product relationship, with many potential transactions to prolong the product lifecycle as opposed to the old model of a one-off up-front fee.

But the transition from the one-off payment model to one with lower but more frequent transactions has begun to incorporate a monthly subscription flavor. Both Microsoft and Sony have begun charging a monthly fee for their online services, effectively extending their revenue streams by multiple years (potentially) beyond the initial purchase price. Microsoft was charging a monthly fee in the previous generation of consoles, but now EA has become the first non-manufacturer to move into the monthly model on what appears to be an experimental basis.

The 'EA Access' subscription has come out of beta on the Xbox One and now offers subscribers unlimited access to 'The Vault' of EA titles, which initially includes 4 games with promises of future expansion. It costs \$5 per month or \$30 a year, and requires users to download the games to the Xbox's hard drive. The subscription also includes a 10% discount on all EA digital downloads, and up to 5 days' early access to upcoming titles – effectively allowing subscribers to trial a game before committing to the full purchase price.

And this is because while the 4 launch titles are fairly new, it is extremely unlikely that in these early stages the subscription model will replace the model of buying a game at launch. EA still makes the majority of its revenue on these launch titles, so the two-time winner of the 'Worst Company in America' award won't be shooting itself in the foot to push the subscription model at the expense of its margins.

But the service is very similar to SVoD platforms – essentially a Netflix for games. You pay a lot less than buying the cost of the library, but then enjoy unlimited access to a library of content that lags a lit-

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tle (and occasionally a lot) behind the release cycle– hindered only by the bandwidth and download restrictions of your ISP.

And this model could solve the biggest gripe with DLC – that of feeling like you’re being nickel and dimed after purchasing a \$60 game for additional content, which 5 years ago would have been included in the game as standard.

Suddenly, DLC purchases for one of these Vault games are comparatively affordable, especially since EA will likely only add games to its Vault after they have gone through the traditional product cycle and been purchased by those willing to pay the sticker price. This means that consumers who wait a year will have access to games at a fraction of their launch price.

Of course, the other flavor of strictly digital distribution is cloud gaming, which renders the game’s content in the cloud and streams it to a player’s device – removing the need for powerful and expensive gaming hardware at the user-end. We looked at this model above, but it’s worth noting that the answer to EA Access and its Vault on the PlayStation platform is actually a lot more expansive. So while EA currently has no subscription model for the PS4, given the depth of the Sony model, you can appreciate why EA is in no rush to take Sony on.

What will happen to Games consoles?

Why supplemental subscriptions are key to the console platform

Sony's subscription service is called PlayStation Now, and costs \$9 per month. Additional content can be accessed by additional payments, but Sony promises 100 games including some of its flagship titles. While still in a public beta and currently only available on the PS4, the service will make a library of titles available on the PS4, PS3, PlayStation Vita handheld, Smart TVs, tablets and smartphones – eventually including non-Sony devices.

This subscription is in addition to the PlayStation Plus subscription that is required for the online features of the PS4. A Plus membership costs \$50 per year in an annual membership payment, or \$54 per year in quarterly installments, or \$120 in monthly installments. This model means that over the course of a 6 year product lifetime, Sony could make \$300 per user on a PS4 that sells for \$400 just for the Plus membership. Adding on the \$108 per year that a PlayStation Now membership would add means that every console user who purchases and uses a PS4 for 6 years with both a Now and Plus membership is worth \$1,348 to the company ($400 + [6 \times 50] + [6 \times 108]$). However, numerous teardowns have shown that the BOM of the PS4 comes in at around \$381.

This means that Sony makes a small loss on each console after R&D, distribution and advertising are factored in, so we should ignore the \$400 figure and instead focus on the subscription revenues. This means that for every gamer Sony can entice into the Now platform for the entire 6 year product lifecycle it is worth \$948 – revenues that simply didn't exist on earlier generations of consoles.

The \$948 figure also doesn't include the revenue generated by the sales of additional Sony hardware (controllers, webcams, keyboards, remote controls) or the cut that Sony will receive from the sales of games on its platform. Essentially, this time around, because the loss incurred on selling each console is negligible now and likely to fall, Sony will be making profits as soon as the buyer subscribes to one of its services or begins buying its games.

Cumulatively, the maximum potential worth of each 6-year gamer to Sony under this subscription method is likely north of \$1,200. Back-

The Rise and Rise of Video Games Empires

of-the-napkin calculations of a conservative estimate of a \$700-per-console 6-year worth, using the 10 million units sold so far, gives a total revenue of \$7 billion, or \$1.16 billion annually on average. If the sales replicate those of the PS3 (80 million), that figure climbs to \$56 billion, or \$9.3 billion per year over the 6 year period.

To put this in perspective, Sony's 2013 annual report listed gaming sales as \$6.7 billion and operating income of \$16 million. This was at the end of the PS3's lifecycle, and really before the PS4's, but in a subscription based model, there's no reason for the revenues to tail off near the end of the lifecycle – because in a hardware agnostic platform, there is no end of lifecycle.

‘When the Consoles Die, What Comes Next?’ – the landscape of the post-console world

Ben Cousins, in a report and presentation given at GDC 2012 called ‘When the Consoles Die, What Comes Next?’ estimates that Sony lost \$4 billion on the PS3 platform, with Microsoft losing around \$3 billion on the Xbox 360. Cousins said this was due to selling the consoles at substantial losses (\$300 per PS3 thanks to the high cost of the Cell processor and associated chips) but this time around, thanks to the simpler design (which some still criticize as being underpowered) both consoles will probably not incur any significant loss per console sold. This means the subscription models are exponentially much more lucrative.

Which is important for an industry in which major players have seen their share price plummet in the wake of the 2008 financial crisis. As pointed out by Cousins, between 2008-2012, while the NASDAQ's total worth rose 25%, EA lost 61.77% of its share price by, Activision was down 33.34%, Sony lost 46.42%, and Nintendo lost 71.28% – with the global gaming retail industry sales dropping 20% of its value in that time.

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Cousins summed it up by saying the Old World of gaming is “large but shrinking fast,” with investors not showing confidence in large traditional publishers, Sony and Microsoft showing losses on their console divisions over the past decade, Nintendo in disarray, retail sales dropping year on year since 2009. The traditional gaming sector is losing out to the rise of mobile, which was deftly illustrated when Cousins observed that Call of Duty: Black Ops, the biggest selling console and PC game at the time had sold 25 million copies, while Angry Birds had been downloaded 500 million times.

So moving to a subscription model could provide a lifeline for an industry that operates at much lower volumes than mobile. This is of course the best-case scenario, as it remains to be seen what percentage of users opt for the subscription model, given that in the current pricing scheme a Now and a Plus membership would cost around \$14 a month.

Without the Now subscription, Sony has still squeezed an additional \$300 over six years for the Plus membership that it wouldn't have seen with the PS3, and if Sony were able to make its library completely screen agnostic, it wouldn't have to add in the hardware costs – further improving its margins, especially if it can successfully market the benefit to the consumer's wallet made by not having to spend \$400 on a console.

And while freemium mobile gaming's rise has been swift, dwarfing traditional static gaming, there are signs that this Wild West of flagrant copyright infringement and underhand (and some might say anti-consumer) practices will shortly be more tightly regulated. Both Apple and Amazon have been successfully sued by parents for purchases made by their children in-game, and are adapting their app store rules to prevent further litigation.

New markets: Children's gaming, Oculus and Samsung's Virtual Reality

And speaking of children, there are also moves towards dedicated consoles and platforms aimed at children. There's the LeapFrog LeapTV, which is an Android console with a locked down ecosystem geared directly at the children of parents who want to ensure no unauthorized payments and downloads can be made – and want to avoid the major consoles for those very reasons.

Then there's the approach taken by the Skylanders franchise, owned by Activision, which has taken the decision to include an iOS and Android release of the latest 'Skylanders Trap Team' title at the same time as the console releases. Skylanders is a hugely popular game among children, with sales since 2011 of \$2 billion, mostly due to its tactic of selling physical toy action figures that can be added to the video game – allowing kids to play as their favorite Skylanders character once they plug the toy into the Portal of Power NFC adapter that is bundled into the game.

With an ecosystem such as this, the total cost of ownership is: 1 full price game (\$60), as many action figures as your children can squeeze out of you (\$10-17 each, 175 to collect), and 1 Portal of Power, with a Bluetooth controller for the mobile versions. Thankfully you get something of a discount when you buy the \$75 starter pack. And then you need to throw in the cost of the tablet or console on which the game will be played.

So the LeapFrog approach could be adopted to divert revenue associated with children from the major consoles, and at least one major games franchise has now opted to treat tablets as equals to consoles and PCs.

Virtual reality is also raising its head again, as Facebook's \$2 billion acquisition of Oculus VR creeps ever closer to realizing a photorealistic virtual reality experience that could be plugged into static gaming platforms. In partnership with Oculus, Samsung has just released its Gear VR headset, which is essentially a headband with buttons, which holds the Galaxy Note 4 in front of a user's eye to replicate the experience provided by systems like Oculus' Rift.

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This approach could easily be applied to other smartphones and is perhaps more exciting than its static equivalents, because it could be used outdoors – in environments potentially mapped by a technology like Google’s Project Tango. You only need to imagine an Augmented Reality laser-tag experience to get a little excited about hardware like the Gear VR.

We’ve covered both the Rift and the Gear VR in previous editions of Faultline, and with technologies such as Leap Motion – a hand and object tracking system that eliminates the jarring disconnect experienced by having to use a controller to interact with a VR world – we are not very far away from a stunningly immersive VR experience, that thanks to the power of cloud computing, could be easily playable on a smartphone.

Which explains why large companies are moving into the gaming industry. The aforementioned Facebook buy augmented its already massive browser gaming ecosystem, although it’s unlikely that we’ll ever see a Farmville VR release. Amazon bought into Twitch for just shy of \$1 billion, and released a net top Fire TV with a heavy gaming focus and a dedicated development studio to support it.

In Conclusion

So ultimately, gaming seems destined to become a hardware agnostic experience, with many separate and distinct elements that are divided more by the genre of game than by the platform on which they are played. That is to say, gaming is only a few steps away from becoming a universal experience that can be enjoyed and monetized on any platform and hardware.

This ubiquity presents great synergies and savings for developers, publishers and advertisers, as well as a market full of products that can be sold to the emerging, and frankly massive, volume of mobile gamers looking for an ever-increasingly exciting experience.

Now they just have to solve the I/O divide inherent in gaming on a touchscreen vs. using a keyboard and mouse or controller ...

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Rethink Technology Research Ltd, 19 The Hundred,
Romsey, Hampshire, SO451 8GD

Tel: +44 (0)7734 037414
CEO: Peter White peter@rethinkresearch.biz
Director of Research: Caroline Gabriel

Sales contact details

John Constant Tel; +44(0)1794 521411
Email: john@rethinkresearch.biz

Report Author: Alex Davies, who also edits the RIoT publication alex@rethinkresearch.biz