

North America
TMT Internet

31 October 2010

Interactive Entertainment

Extending Game Play to the Masses... beyond the console



Deutsche Bank



FITT Research

Fundamental, Industry, Thematic, Thought Leading

Deutsche Bank's Research Product Committee has deemed this work F.I.T.T. for investors seeking differentiated ideas. The Interactive Entertainment and Internet segments are converging, shifting the landscape of the traditional video game market. Digital, social and mobile gaming are emerging as the next major drivers of the interactive gaming space in the US over the next several years. The social and massively multi-player segments should also offer an attractive opportunity for monetization of virtual goods, one of the fastest-growing segments in the space.

Fundamental: Growth Driven by Penetration of the Long Tail

Industry: We see Nearly a \$30bn US Market Opportunity by 2014

Thematic: Digital, Social and Mobile are Key Emerging Themes

Thought Leading: Adoption, Engagement, and Monetization Phases

We Favor Activision Blizzard for Digital Position and Google for its Android Platform for Mobile Gaming



Jeetil Patel

Research Analyst
(+1) 415 617-4223
jeetil.patel@db.com

Herman Leung

Research Analyst
(+1) 415 617-3246
herman.leung@db.com

Matt Chesler, CFA

Research Analyst
(+1) 212 250-6170
matthew.chesler@db.com

Deutsche Bank Securities Inc.

All prices are those current at the end of the previous trading session unless otherwise indicated. Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies. Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MICA(P) 007/05/2010



31 October 2010

Interactive Entertainment

Extending Game Play to the Masses... beyond the console

Jeetil Patel
Research Analyst
(+1) 415 617-4223
jeetil.patel@db.com

Herman Leung
Research Analyst
(+1) 415 617-3246
herman.leung@db.com

Matt Chesler, CFA
Research Analyst
(+1) 212 250-6170
matthew.chesler@db.com

Fundamental, Industry, Thematic, Thought Leading

Deutsche Bank's Research Product Committee has deemed this work F.I.T.T. for investors seeking differentiated ideas. The Interactive Entertainment and Internet segments are converging, shifting the landscape of the traditional video game market. Digital, social and mobile gaming are emerging as the next major drivers of the interactive gaming space in the US over the next several years. The social and massively multi-player segments should also offer an attractive opportunity for monetization of virtual goods, one of the fastest-growing segments in the space.

Fundamental: Growth Driven by Penetration of the Long Tail

The interactive entertainment industry is headed towards higher penetration of the general population, no longer only for hardcore gamers. User demographics are widening to both a younger audience and broadening to include the women's demographic, especially in the social and casual game segments. The Nintendo Wii helped reinvigorate interest in casual, easy-to-learn games, and Facebook now enables a large web of connected users to collide in social gaming (i.e. Farmville).

Industry: We see Nearly a \$30bn US Market Opportunity by 2014

Our research of the size of the opportunity in the interactive space reveals a market much larger than we originally expected. In total, we expect the US gaming market to reach \$29.8bn by 2014, up from \$17.8bn in 2009, representing a five-year projected CAGR of 11%. While sales of traditional video game software is likely to decline 6% during this time period, the emergence of online gaming, online PC gaming, mobile, and social gaming should more than offset the decline.

Thematic: Digital, Social and Mobile are Key Emerging Themes

Media consumption of video games is now eating into the time of traditional media channels. Users' engagement on connected consoles such as the Xbox and PS3 is growing in popularity, offering publishers a new and higher-margin revenue stream through digital content without supply-chain challenges. Facebook also provides opportunities for game developers to monetize its 500m users, and gaming is among the most popular activities on the site. We think the industry is evolving from a product-based gaming experience to a services-based experience through purchases of virtual goods. Mobile should also drive adoption via growth of the iPhone (Apple) and Android (Google) platforms.

Thought Leading: Adoption, Engagement, and Monetization Phases

As we migrate through the phases of the digital gaming industry, we believe we are near the end of the adoption phase for many of these sectors and entering a phase of higher engagement. We believe growing engagement will likely lead to more creative ways for monetization in the industry over the next several years.

We Favor Activision Blizzard for Digital Position and Google for its Android Platform for Mobile Gaming

We continue to favor Activision Blizzard for its positioning in the digital gaming space through its high-quality franchises. Its Call of Duty franchise dominates digital game play on the connected console, while its Blizzard franchises (World of Warcraft, StarCraft, and Diablo) offer high engagement in the MMO (massively multi-player online) segment. For Google, the Android OS is becoming a vital platform for mobile gaming in the future, especially with rapid expansion of apps and games developers supporting the development.

Deutsche Bank Securities Inc.

All prices are those current at the end of the previous trading session unless otherwise indicated. Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies. Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MICA(P) 007/05/2010

FITT Research

Top picks		
Activision-Blizzard (ATVI.OQ),USD11.47		Buy
Electronic Arts (ERTS.OQ),USD15.85		Sell
Google (GOOG.OQ),USD612.99		Buy

Companies featured			
Activision-Blizzard (ATVI.OQ),USD11.47			Buy
	2009A	2010E	2011E
EPS (USD)	0.69	0.75	0.80
P/E (x)	16.2	15.3	14.4
EV/EBITDA (x)	7.8	8.3	7.4
Electronic Arts (ERTS.OQ),USD15.85			Sell
	2010A	2011E	2012E
EPS (USD)	0.44	0.45	0.45
P/E (x)	43.1	35.1	35.1
EV/EBITDA (x)	10.9	7.7	8.3
THQ (THQI.OQ),USD4.00			Hold
	2010A	2011E	2012E
EPS (USD)	0.19	-0.08	-
P/E (x)	31.5	-	-
EV/EBITDA (x)	3.5	1.3	-

Table of Contents

Executive Summary.....	3
Sizing gaming across console and new media.....	6
Console Software: Declines on the Horizon.....	9
The Connected Console: Billions of Game Play Hours.....	17
MMOs: The Virtual World.....	21
Gaming across Social Media.....	28
Casual gaming on the Internet.....	44
Mobile: Gaming Anywhere.....	47
Net Takeaways.....	56
Appendix A – Company Profiles: Social/Casual Gaming.....	57
Appendix B – Company Profiles: MMO Operators.....	74
Appendix C – Company Profiles: Enabling Platforms.....	80
Glossary of Terms.....	87
Activision-Blizzard.....	88
Electronic Arts.....	89
THQ.....	90
Google.....	91

Executive Summary

Gaming beyond the Console – Social, Mobile, Casual, MMO

The interactive entertainment industry, in its historical construct, has changed immensely in a very short period of time. We believe that the industry is becoming much more fragmented in terms of media and devices, larger in terms of audience reach and demographics, and style of gameplay expanding from hardcore games catering to the most serious fans to casual, bite-sized interactive content catering to the masses. Just like electronic retailing and paid search benefiting from the development of the long tail (a concept explored by Chris Anderson in his 2006 book, *"The Long Tail: Why the Future of Business Is Selling Less of More"*), the interactive entertainment industry is increasingly becoming the "head" in gaming, whereas a very long tail of content and audience fragmentation is developing, thanks to casual Internet based games, hundreds of thousands of games proliferating on smartphones, passive games in social media (Facebook) and MMO games that cater to both hardcore gamers and mass consumers alike.

From our coverage of Interactive Entertainment and Internet E-commerce and Media, we offer a unique perspective on both the video gaming world and the online e-commerce/media worlds, as they collide in a socially-connected game play. Our research comes from detailed discussions with industry executives in the social, casual, and traditional gaming companies. In addition, we combine research from Deutsche Bank's wireless, hardware, and media teams in the US and globally, as well as other industry-specific third-party research. We think convergence among these sectors should lead to more competition among the current leaders in their respective spaces, whether it is Google in search advertising, Facebook in social networking or Apple in mobile; we believe the market is clearly headed for more competition.

The gaming segment is evolving away from the traditional video game console-oriented gaming to a socially connected gaming world. Traditional video gaming is a \$10bn industry, but it declined 10% in 2009, 5% in 2010, and 9% in 2011, mainly because consumer consumption is changing. With the emergence of social networking sites and improved mobile computing power, the future of gaming will likely be reliant on ubiquitous delivery of content across different platforms. Whether mobile, desktop or on social sites, consumer demand will be shaped by entertainment access anytime, anywhere. Economics are also more favorable in the social, digital, and casual spaces, as development costs run substantially less than for traditional, studio-published games.

Valuation

Interactive entertainment valuations are based primarily on earnings growth in our universe of US video game companies. Projections for earnings on these companies are based on quality of the games, position of the company in the emerging digital, social and mobile segments and execution of the business. Valuation for Internet companies is also based on earnings growth and market positioning. We are not changing estimates to our models at this time, but may do so on follow-on reports.

Risks

Risks associated to the interactive entertainment/Internet industries include: macro economic factors such as consumer spending, broadband penetration and government regulations. Specific to the interactive entertainment industry are digital entertainment adoption, virtual currency adoption, growth of social networks/gaming, payment fraud and ability to monetize consistently for digital formats. New forms of media or entertainment options could also impact gaming consumption as well. For Internet companies, risks include adoption of Internet services, potential cannibalization of mobile and consumption of alternative media channels.

Key Emerging Themes in Gaming's Next Generation

Figure 1: Secular Consumer Shifting in the Gaming Segment

Segment	At-Risk Segments	Share Gainers
Social	Casual gaming, board games	Facebook, Zynga
Connected Console	Traditional gaming publishers	Xbox Live (Microsoft), Call of Duty (Activision)
MMO	Traditional gaming publishers	World of Warcraft (Activision)
Mobile	Handheld	iPhone, iPad, iTouch (Apple), Android (Google)
Casual	Board games, general gaming	Popcap, WildTangent
Payments	Traditional credit cards	Facebook Credits, Trialpay, Playspan, Boku

Source: Deutsche Bank Estimates

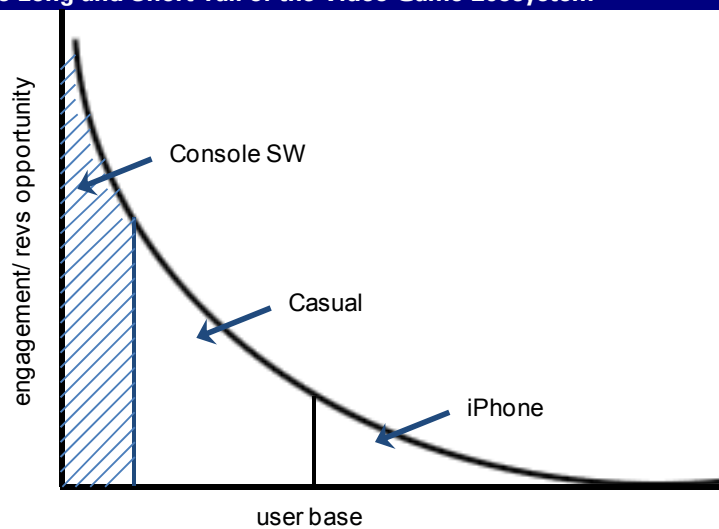
From our research, we came away with the following key themes, which we think will shape a large part of the future of gaming.

- **Social Games: Fastest-Growing Segment, Farming Virtual Dollars into Real Cash:** With the emergence of Facebook, social gaming has become one of the most popular categories, as evident by its 500m users. In terms of the estimated 77m social gamers in the US, we think the social monetization opportunity is very real, especially if only an estimated 3-4% of users are paying, compared to 15-20% for Asia-based models. Furthermore, the roll-out of Facebook Credits, a standardized virtual currency platform, should have a major effect on the virtual economy, offering higher propensity for users to make in-game purchases over time. As such, we believe this is a large opportunity with the fastest growth trajectory over the next five years in the interactive video gaming space.
- **The Connected Console: Digital Content Revolution:** Game play has extended beyond the traditional console with the emergence of faster broadband and consoles that connect online. Subscription services such as Xbox Live have seen members grow 10x in less than five years to 25m subscribers. Publishers are benefiting from this, offering extended digital content for its published games and seeing high user engagement. For example, Call of Duty Modern Warfare 2 (Activision) has logged 1.75bn hours of game play in just six months on Xbox Live and has sold more than 20m of incremental pieces of content on highly favorable margins. We expect to see more traditional publishers evolving into pushing less traditional retail product and migrating to digital, eliminating supply-chain challenges and, more importantly, cost as a result. Publishers need to evolve into digital or they risk falling out of consumer relevance.
- **Massively Multi-player Online Games (MMO): Evolving from Asia Models:** The attractive aspects of MMO (massively multi-player online) games include the social connection among gamers and the conservation of their high engagement in a continuously evolving virtual world. Many are familiar with World of Warcraft, Activision Blizzard's popular MMO that has over 12m subscribers. Monthly subscriptions currently dominate the monetization opportunity, but we think the larger opportunity could evolve as the form of virtual goods, similar to the Asia model (see: Tencent). Additionally, casual MMOs such as Habbo Hotel are commanding a massive 185m global audience with strong user engagement, but monetizing only a small portion of users. Over time, the MMO market should grow to over \$4bn in the US, representing a 23% five-year CAGR.
- **Mobile Games: An Apple a Day Keeps the Traditional Handhelds Away:** Since the launch of the iPhone, traditional handheld gaming devices such as the Sony PSP and Nintendo DS have been losing share. The overall growth of smart phones enables casual game play to occur on a phone rather than a dedicated handheld device; hence revenue share is lost to several Apple devices (iPhone, iTouch, iPad). Downloading games is seamless and the Apple app store offers a wide selection at much lower prices compared to handheld software. Even developers are now migrating away from the

traditional development and towards mobile, especially with much lower development costs. Over time, we also believe the Google Android platform is likely to become meaningful as it continues to grow its installed base (a run rate of 200,000 activations daily) as another viable channel for gaming distribution.

- Casual Games: The New Daytime TV Show?** Gaming is not only for average hardcore gamers anymore, but also targets an older female demographic. Examples in this segment would include games like Bejeweled or Tetris, games with low barriers to play. Casual gaming shares a lot of similar demographics as daytime television, offering a highly attractive audience for advertisers. Game play is generally simple, lasting five to 20 minutes at a stretch. Payback in this segment for publishers is also high, given the low development costs. The outlook for this segment is attractive, estimated to be \$675m in the US, or \$2.7bn globally (CGA). More recently, casual gaming companies have enabled social features on their games and are launching on Facebook, migrating some of the growth trajectory in the social gaming space.

Figure 2: The Long and Short Tail of the Video Game Ecosystem



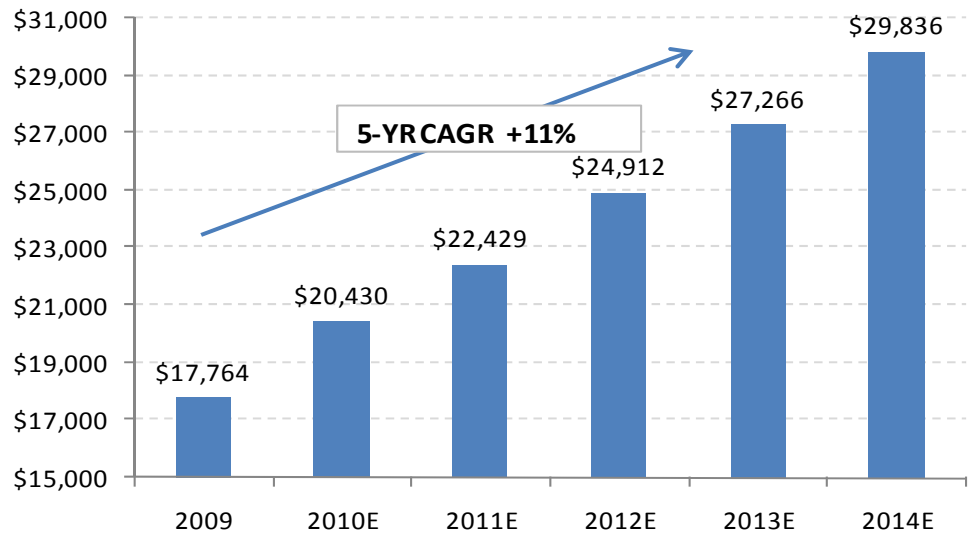
Source: Deutsche Bank

Sizing gaming across console and new media

How Big is the Opportunity?

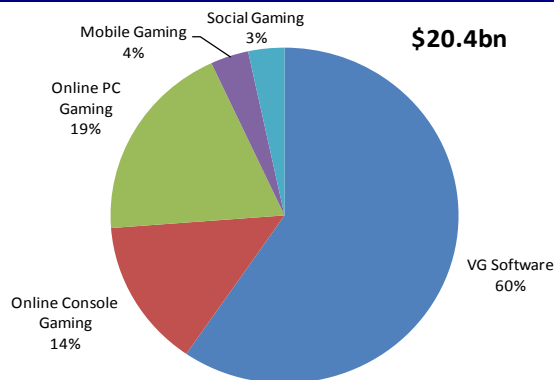
According to our estimates based on inputs from leading market research firms and our conversations with industry executives, the US gaming market was valued at ~\$17.7bn in 2009 and should grow at a healthy CAGR of 11% to reach \$29.8bn by 2014, indicating the increasing relevance of video games as an entertainment medium. Much of this growth is led by emerging formats targeting the long tail of gamers, while traditional packaged goods sales should decline, according to our estimates.

Figure 3: US Video Game Market (2009-2014E) – (\$ in millions)



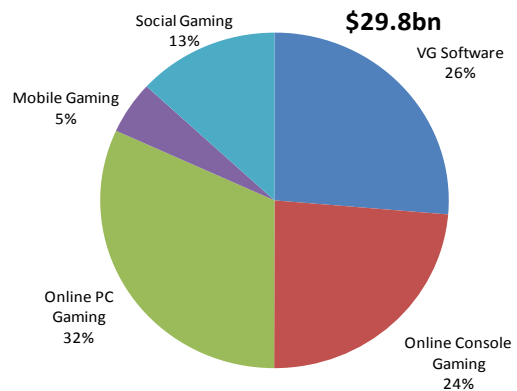
Source: NPD, IDC, eMarketer, and Deutsche Bank Estimates

Figure 4: US VG Market: Breakdown by Segment (2009)



Source: Deutsche Bank, eMarketer, IDC, NPD

Figure 5: US VG Market: Breakdown by Segment (2014E)

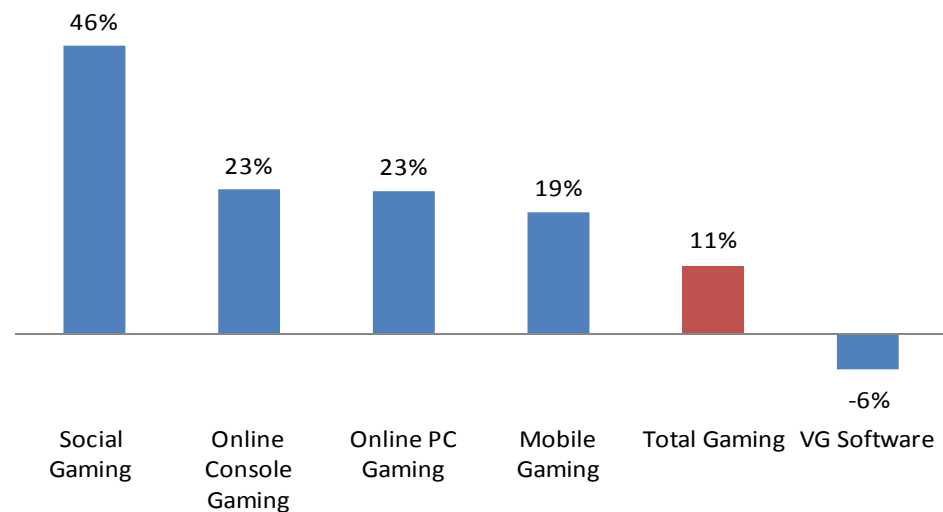


Source: Deutsche Bank, eMarketer, IDC, NPD

Currently, packaged goods sales represent the largest segment of the gaming market in the US and account for roughly two-thirds of dollar sales. However, as gaming continues to shift online and continues to attract the masses over time, we believe the relevance of packaged goods software sales should decline. While we forecast the overall industry to grow at low double-digit growth rates over the next few years, we expect packaged goods sales to decline 6% over the next five years. As such, we expect the share of packaged goods sales in the overall video games mix to decline to about one-fourth, down from two-thirds currently.

Online console gaming is likely to grow at a healthy rate, and, we expect it to account for almost a fourth of the market (vs. ~14% currently) over the next five years. We believe social games have the strongest growth potential and we forecast this segment to account for 13% of video game spending in the US over the next five years, despite starting from a very small base (in 2009).

Figure 6: US Video Game Market: Growth Rates by Segment (CAGR 2009-2014E)



Source: Deutsche Bank, eMarketer, IDC, NPD

With growth of social networking sites and online gaming, it should be no surprise that we expect the social gaming segment to grow faster than other gaming segments. Over the next five years, the CAGR of social games from 2009 to 2014 should grow 46%, compared to the total gaming market with 11% growth during the same period. We also expect traditional gaming to decline 6% throughout this period, while digital console gaming and PC gaming are likely to grow 23% from 2009 to 2014. Mobile gaming should also grow faster than the overall gaming growth rate and is driven by the strong adoption rate of smart phones globally.

Figure 7: US Interactive Entertainment Market Size and Forecasts 2009A-2014E (\$ in millions)

	2009A	2010E	2011E	2012E	2013E	2014E	5-YR CAGR	Source Actual	Source Forecast
PC Software Games	\$658	\$663	\$673	\$680	\$687	\$694	1%	NPD	Deutsche Bank
Y-o-y Change	-6%	1%	1%	1%	1%	1%			
Video Games	\$9,916	\$9,349	\$8,448	\$8,028	\$7,586	\$7,165	-6%	NPD	Deutsche Bank
Y-o-y Change	-10%	-6%	-10%	-5%	-6%	-6%			
US Video Game Software	\$10,574	\$10,013	\$9,121	\$8,708	\$8,273	\$7,859	-6%	NPD	Deutsche Bank
Y-o-y Change	-10%	-5%	-9%	-5%	-5%	-5%			
Subscription	\$852	\$1,067	\$1,098	\$1,264	\$1,441	\$1,629	14%	IDC 2008-2012	Deutsche Bank 2013-2014
Y-o-y Change	42%	25%	3%	15%	14%	13%			
Game-Related DLC	\$1,646	\$2,584	\$3,131	\$3,670	\$4,330	\$5,153	26%	IDC 20'08-2012	Deutsche Bank 2013-2014
Y-o-y Change	131%	57%	21%	17%	18%	19%			
Advertising	\$37	\$85	\$125	\$168	\$219	\$284	50%	IDC 2008-2012	Deutsche Bank 2013-2014
Y-o-y Change	29%	126%	48%	34%	30%	30%			
Online Gaming Console	\$2,536	\$3,735	\$4,354	\$5,102	\$5,990	\$7,066	23%		
Y-o-y Change	89%	47%	17%	17%	17%	18%			
	2009	2010E	2011E	2012E	2013E	2014E			
MMO & Casual Subscription	\$1,479	\$1,968	\$2,585	\$3,218	\$3,733	\$4,211	23%	IDC	IDC
Y-o-y Change	12%	25%	20%	20%	18%	18%			
Premium Full Game & Add-On Download	\$910	\$1,348	\$1,935	\$2,274	\$2,474	\$2,583	23%	IDC	IDC
Y-o-y Change	50%	45%	50%	51%	53%	55%			
Advertising & Micro-transactions	\$1,042	\$1,136	\$1,500	\$1,873	\$2,275	\$2,698	21%	IDC	IDC
Y-o-y Change	25%	20%	15%	10%	8%	8%			
Online PC Gaming	\$3,431	\$4,451	\$6,021	\$7,365	\$8,482	\$9,492	23%	IDC	IDC
Y-o-y Change	4%	30%	35%	22%	15%	12%			
	2009	2010E	2011E	2012E	2013E	2014E			
Paid	\$592	\$793	\$952	\$1,067	\$1,229	\$1,328	18%	eMarketer	eMarketer
Y-o-y Change		34%	20%	12%	15%	8%			
Ad-Supported	\$36	\$56	\$76	\$107	\$148	\$186	39%	eMarketer	eMarketer
Y-o-y Change		56%	37%	40%	38%	26%			
US Mobile Gaming	\$628	\$849	\$1,029	\$1,174	\$1,377	\$1,514	19%	eMarketer	eMarketer
Y-o-y Change		35%	21%	14%	17%	10%			
US Social Gaming	\$596	\$1,382	\$1,904	\$2,563	\$3,145	\$3,905	46%	Deutsche Bank	Deutsche Bank
Y-o-y Change		132%	38%	35%	23%	24%			
Total US Gaming Market Size	\$17,764	\$20,430	\$22,429	\$24,912	\$27,266	\$29,836	11%		
Y-o-y Change	9%	15%	10%	11%	9%	9%			

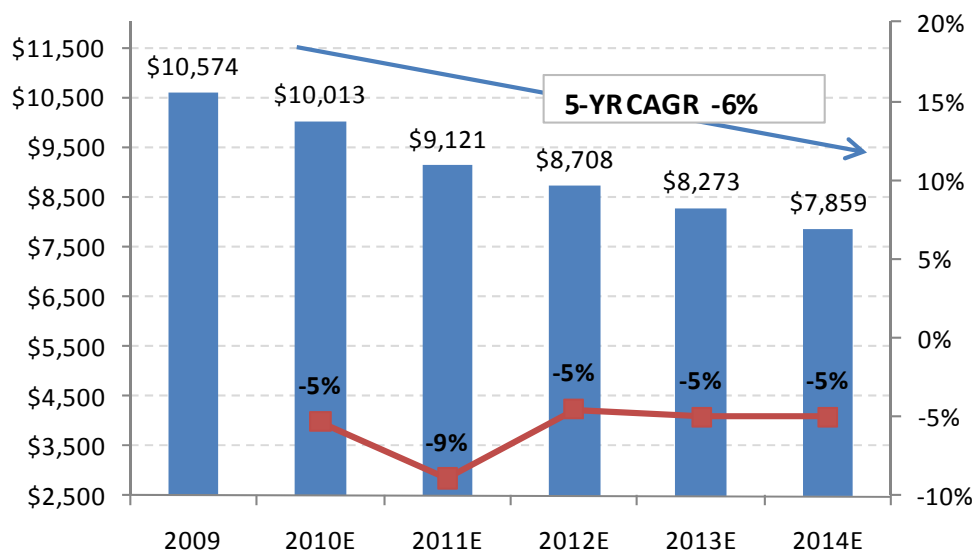
Source: Deutsche Bank, eMarketer, IDC, NPD

Console Software: Declines on the Horizon

Industry to Decline 6% through 2014

From an overall market perspective, we expect the video game software market to decline 5% in 2010, an improvement from the 10% decline in 2009. Our forecast over the next five years calls for a 6% CAGR decline from 2009A to 2014E, or a decline from \$10.6bn in industry sales in 2009 to an estimated \$7.9bn in sales for the industry by 2014E. While we still expect growth from the 256-bit (next-gen) software category in 2010, which includes the Nintendo Wii, Sony PS3, and Microsoft Xbox 360 platforms, we model a drop of 78% y-o-y in 2010 for the 128-bit platform to \$94m (down from \$438m in 2009). This decline would represent slightly higher levels of decline than its previous generation console software (the 32/64-bit), which declined 60% y-o-y in both 2002 and 2003.

Figure 8: US Video Game Software Sell-Through – 2009A-2014E (\$ in millions)



Source: NPD, Deutsche Bank Estimates

Specifically, our industry forecasts model a decline of 5% in 2010 to \$10.0bn and a decline of 9% in 2011 to \$9.1bn. Again, we highlighted above the decline in the early gen systems of nearly 80%, and we expect this to accelerate over time. Even with the upcoming introduction of the 3DS handheld device, we expect this category to decline 21% in 2010 to \$1.5bn in sales as the DS/PSP handheld units near their maturity stage in the cycle while casual cell phone gaming proliferates (see: iPhone, iPod, iPad). Pricing declines in consoles are also likely over time (up to 25% cut), but incremental price cuts on hardware systems could alter our forecasts, as a larger installed base should drive higher software sales.

From a software pricing standpoint, we continue to believe triple A quality titles should be able to sustain pricing over a longer period of time, while the longer tail could be at risk to lower overall pricing. Pricing could also be lowered for games as the digital portion of the games becomes a higher and more important component of monetization.

Do Not Forget About the Hardware: The Current 256-bit Generation Console Cycle

In our report, we focus mainly on video game software, but a clear driver of software sales rely on the hardware-installed base. The hardware space has evolved significantly from the early Atari products in the 1980s. Processing speeds have improved with each generation of the console since then, improving graphics and game play experience for users. Among the first generations we tracked were the 32/64-bit console systems, which included the Dreamcast, Nintendo 64, Playstation, and the Sega Saturn. The installed base for this first generation cycle started in 1995 and reached a US-installed base of 50m units six years later in 2001. Following this, the 128-bit console systems were introduced in 2001 with the GameCube, PS2, and Xbox. Again, after six years the installed base reached 67m units before growth peaked in 2007.

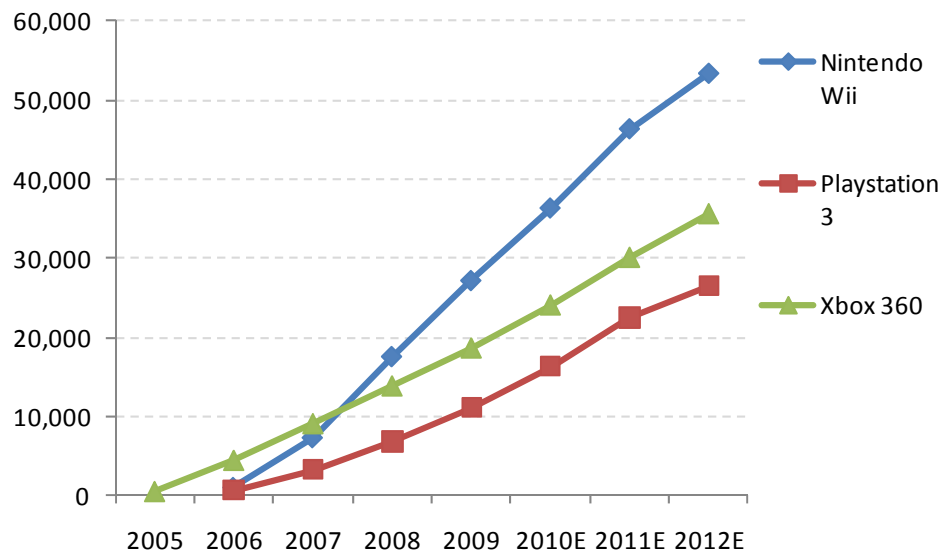
Figure 9: Previous Three Generations of Video Games and Console Representation

Generation	1995 - 2001	2001 - 2006	2006 -
Processing Speed	32-bit / 64-bit	128-bit	256-bit
Consoles	<i>Dreamcast</i> <i>Nintendo 64</i> <i>Playstation</i> <i>Sega Saturn</i>	<i>GameCube</i> <i>Playstation 2</i> <i>Xbox</i>	<i>Nintendo Wii</i> <i>Playstation 3</i> <i>Xbox 360</i>

Source: Deutsche Bank

The latest generation of video game processors now runs on 256-bit on the following current gen of console systems: Sony PS3, Nintendo Wii, and Microsoft Xbox360. The Xbox360 launched in 2005, while the other platforms launched in 2006. This generation of games provided more advanced technology in both processing speed and data storage, driving improved graphics and audio quality. Developers are creating more advanced games on the 256-bit consoles and receiving a nice premium on average selling prices per unit in return for the next-gen systems. More importantly, these consoles also have an ability to connect online and bring the game experience to a multi-player mode, driving higher engagement for the product and offering digital download monetization opportunities for publishers.

Figure 10: Current-gen (256-bit) Hardware-Installed Base (2005-2012E) (in 000s)



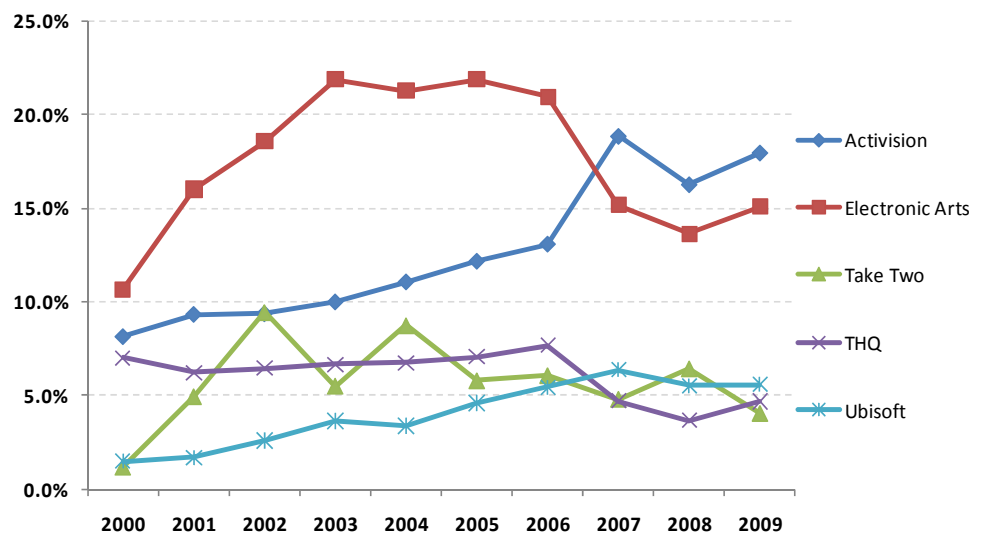
Source: Deutsche Bank Estimates, NPD

However, these console systems are also more expensive than previous generations and price cuts have come much later than previous cycles, as hardware manufacturers try to keep up pricing in an effort to recoup the high console development costs. More recently, price cuts have made their way to the platform, and the installed base has been ramping nicely. As such, rather than a typical six-year cycle, we argue that this could be a more extended cycle given the slower timing of price cuts and game development still lagging the true capabilities of the 256-bit processor. From an estimates standpoint, we model an installed base of 57m consoles by the end of 2009 to over 115m consoles by the end of 2012.

Market Share Analysis: Activision on the Rise

As we look at US video game sell-through on software dollar share, Activision has clearly been gaining market share against Electronic Arts over the past nine years. After hitting its peak market share of close to 22% in 2003 and 2005, Electronic Arts' market share diminished to 15% in 2009, including the benefit of its distribution titles, including Left 4 Dead and Rock Band. Meanwhile, Activision's positioning has been on a solid rise from 8% in 2000 to 12% in 2005 and 18% in 2009. While Call of Duty has clearly added to its market share in the 2009 period, we note that Activision's other franchises, such as Guitar Hero and Tony Hawk, have also continued to perform well and to contribute to share gains over the past several years.

Figure 11: US Publisher Market Share 2000A-2009A



Source: NPD, Deutsche Bank Estimates.

After reaching a market share of ~6.5% in 2007, THQ's inability to compete with quality titles negatively affected market share in 2008 and 2009, down to ~5% of late. Take-Two's market share trend has been clearly driven by its Grand Theft Auto series, in parallel with the fading of this franchise's sales, which fell to 4% in 2009 (vs. 9% in 2004). Ubisoft has done well in the US in the past few years, growing from a less than 2% share in 2000 to almost 6% in the 2007-2009 timeframe.

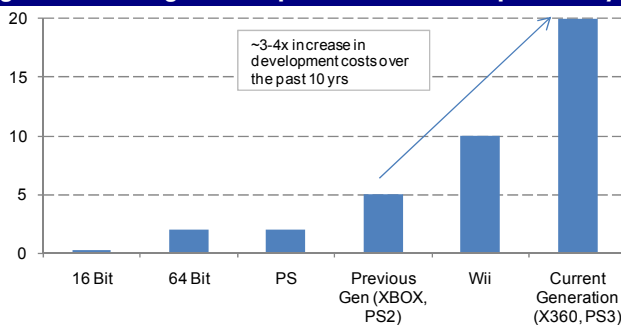
Pain Points with Current Generation Cycle

Development costs for current-generation consoles are 3-4x those of previous generation consoles

Rising Costs of Development

The cost of game development over the past few years has increased, driven by the increasing complexity of devices, sophisticated game play, and complex graphics. Development costs for current-generation consoles (such as Xbox 360 and PlayStation 3) are 3-4x those of previous generation consoles (such as the Xbox and PlayStation), driven by both longer development times and deployment of greater resources (both technology and developers). While top titles for previous generation consoles could be developed for \$3-7m, the development costs of current-generation titles range between \$17m and \$20m. Publishers are spending more time developing games in a bid to ensure high quality, and development time for top AAA-rated titles varies from 18 months to 24 months, compared to ~12 months some years ago. Development team sizes (modelers, animators, and other artists) have simultaneously increased to over 150-plus, compared to 50-100 for previous generation titles.

Figure 12: Average Development Costs for Top Titles by Generation



Generation	Avg. Development Costs
16-bit	\$50k - \$400k
64-bit	\$1m - \$3m
PS	\$0.8m - \$2m
Previous Gen (Xbox, PS2)	\$3m - \$7m
Wii	\$8m - \$12m
Next Generation (X360, PS3)	\$17m - \$22m
Multiple Next-Gen Platforms	\$20m-\$30m

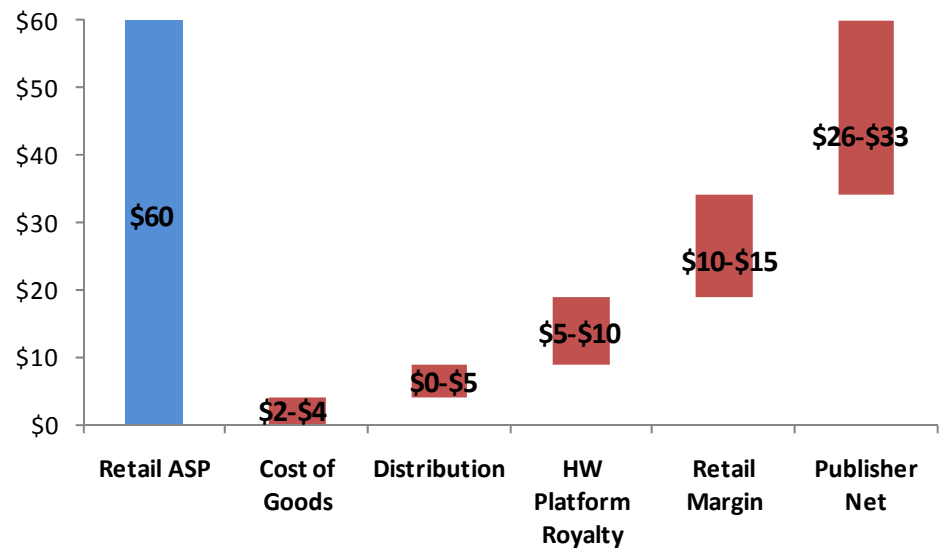
Source: Deutsche Bank Estimates

The increasingly sophisticated and engaging game play and more detailed graphics are the key drivers for this increase in development costs. Hence, developing games for consoles such as the Wii (which do not support very detailed graphics) are usually lower than those for consoles such as the PlayStation 3.

Bar of Profitability for Each Title Rising Significantly

The high costs of development raise the stakes (vs. profitability) for the top titles. To ensure high sell-through, publishers rely on large marketing campaigns, with budgets almost equal to double the development cost. The sunk costs in terms of development and marketing substantially raise the risk of titles achieving profitability. Publishers clearly need to sell more units than in years past, especially since the price of packaged video games has only modestly increased in the past 5-10 years.

Figure 13: Video Game Software Unit Economics Breakdown by Segment



Source: Deutsche Bank

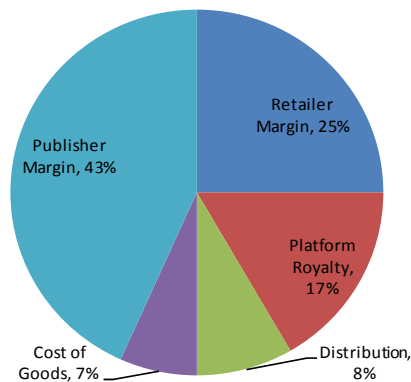
Our industry checks suggest that game publishers keep ~40-45% of the retail price of top rates titles, with the remaining split between others in the channel, including retailers and platform manufacturers (Microsoft, Sony, Nintendo).

Figure 14: Video Game Software Unit Economics Breakdown by Dollar Economics

	Low	High
Retail ASP	\$50.00	\$60.00
Less: Retail margin	\$10.00	\$15.00
= Wholesale cost	\$40.00	\$45.00
Less: Hardware royalty	\$5.00	\$10.00
Less: Distribution	\$0.00	\$5.00
Less: Cost of Goods	\$2.00	\$4.00
= Net Publisher margin	\$33.00	\$26.00

Source: Deutsche Bank Estimates

Figure 15: Percentage Take Rate of Video Game Ecosystem



Source: Deutsche Bank Estimates

Assuming ~\$15-20m in development expenses and an almost equal amount in marketing expenses, top titles likely break even at a sell-through of over a million units (higher for licensed IPs to reflect a 10-20% royalty), a feat that only a select few titles achieve. We

estimate that only a modest 5% of the titles released since 2001 have achieved a sell-through of over a million. Given the economics of the current console cycle, very few titles reach a high enough sell-through to be able meaningfully contribute to profitability.

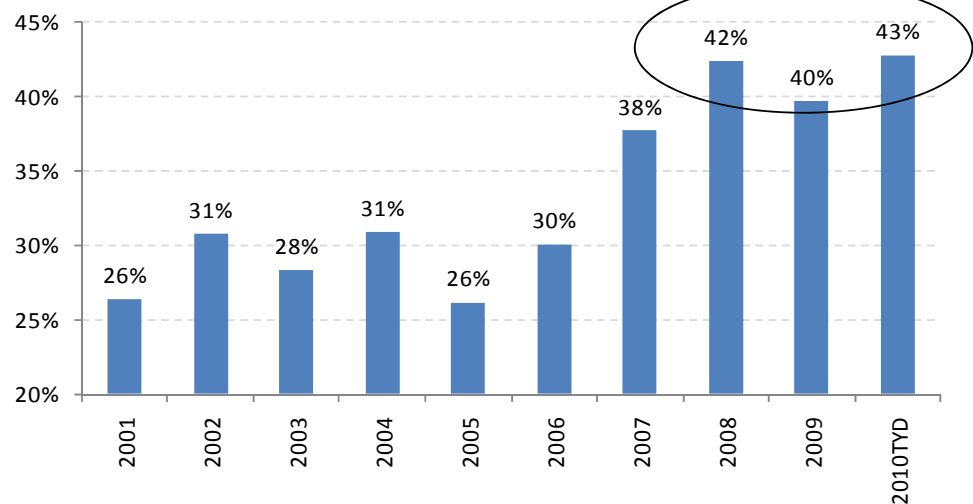
Given the current business trends, lower profitability has forced business models to evolve. Publishers are increasingly devoting greater resources behind a few titles that they believe are more likely to succeed in reaching the million-plus sell-through mark, leading to the evolution of a hit-driven dynamic. Further, they are exploring revenue sources beyond packaged goods sales. To increase engagement levels and drive ARPU, most publishers now offer additional downloadable content and are expanding into other business models such as online and casual games (discussed elsewhere in this report).

Evolution of the hits-driven business model

As the current-gen cycle continues to grow its install base, on the other end of the spectrum, publishers are trying to leverage the higher cost to develop current-gen games. On average, we estimate game development to cost about \$15m for current games and maybe more on a larger scale development with online capabilities. As such, publishers have evolved to push AAA titles through the pipeline, and we have seen sales mix of the top 25 titles become a much larger part of the business.

In the early 2000s, the top selling games were usually the Maddens and the Grand Theft Autos, Need for Speeds of the world. In 2007-2009 the peripheral businesses emerged, including the Nintendo Fit, Rock Band, and Guitar Hero, driving much higher ASPs. Call of Duty Modern Warfare 2 garnered the largest dollar share in 2009 but did not carry the same level of ASPs as the music genre did, hence lowering the mix slightly in 2009.

Figure 16: Sales Mix of Top 25 Titles – US Software Sell-Through Data 2001-2010 YTD



Source: Deutsche Bank, NPD

The top 25 titles have become a more important driver of overall sales in the past 10 years, most notably in the past three years. From 2000 to 2005, the top 25 titles only represented on average about 28% of the total sales mix. As the next generation of consoles has started to ramp, the mix has shifted most notably in the past few years, with the top 25 titles now accounting for 40%-plus on average. We believe this trend is due to publishers focusing on scale and eliminating less profitable titles. Also, publishers account for price protection, so they must also factor in retailers as well as marketing budgets behind each title. Simply put, profits are driven by scale in this business, so it is important to focus on launching high quality titles that will sell through the ecosystem.

Could Motion Controllers Extend the Current-Gen Cycle?

This upcoming holiday season will include a big push of motion-based controllers from the major console makers. Given the huge success of the Nintendo Wii introducing casual-oriented games to less traditional gamers (aka the "long tail"), hardware manufacturers have taken notice and are introducing their own hardware versions to target the mass market opportunity.

We think there is a good chance for at least 25% penetration, or 5m units or so, for the Kinect device

Sony launched its Playstation Move device that includes a motion-based "eye" and a controller as an add-on to the PS3 system. Games introduced should have a lower cost, but titles are still limited compared to the Nintendo Wii. Meanwhile, Microsoft is taking a different approach with no controllers for users, but rather a motion-based sensor device named the Kinect. The Xbox 360 has a pretty good install base, so we think there is a good chance for at least a 25% penetration, or 5m units or so, for the Kinect device. At introduction, game selection will be limited, but we believe that as adoption rises, there will be more publisher development to push for more titles on this platform. Development costs for these games are lower than for hardcore games, so margins are attractive, adding more publisher incentive to quickly develop games should the installed base continue to grow.

Figure 17: Comparison of Motion Devices for Console Systems

	Wii	Playstation Move	Microsoft Kinect
Controllers	Wireless - sync with console	Wireless - 360 tracking - software install required	No controller required
Console-Installed Base (US)	Wii	PS3	Xbox 360
	30m	13m	21m
Games Cost	\$50	\$40	\$50
Game Selection	Large	Limited	Limited
	(1,300+ titles)	(30+ titles)	(10+ titles)
System Cost	Wii Console + Game Bundle = \$199	Playstation Eye + Controller + Game Bundle = \$99.99	Kinect Sensor + Game Bundle = \$149.99

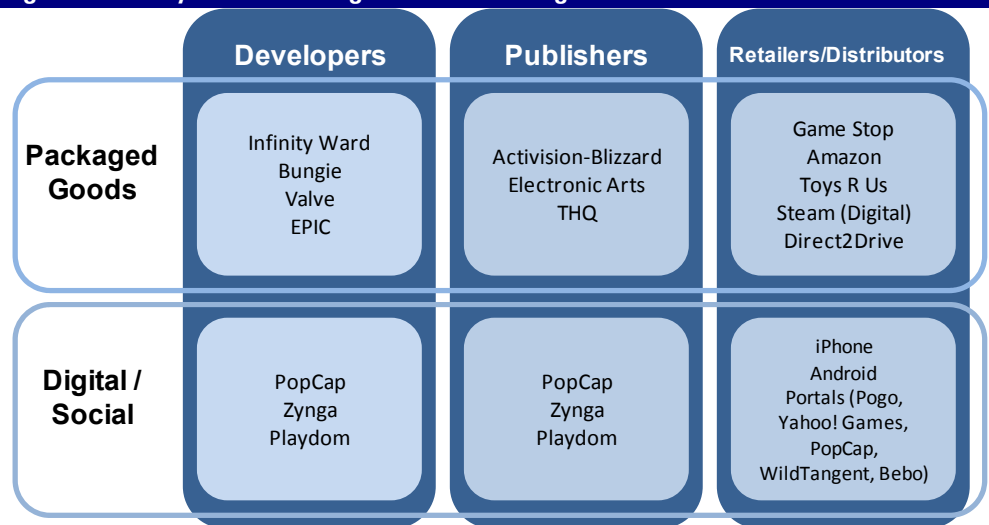
Source: Deutsche Bank, Online retail sites

Similar to the Wii, we think the introduction of new, differentiated game play on motion-based controllers will drive penetration into the general population. These new devices offer a differentiated game play that could draw a strong initial audience, but game development needs to continue to rise to keep users engaged. With the Kinect, there are a lot of new social and media capabilities built into this device, so that should offer an incrementally more connected and engaged audience.

Digital Distribution: The End of Traditional Retail Gaming?

The direct game download method has been gaining traction with users, especially with the proliferation of broadband speeds in the home and wireless speeds up to 4G for handsets. Impatient gamers will no longer have to travel to buy the game from the store, but instead can download the entire game directly to the desktop or smart phone, depending on the type of game. For packaged goods games, they tend to be much larger in size, so distribution is mainly carried out through retailers such as Amazon or Game Stop but digital players are also emerging on this end. Distribution of the more casual and social games is mainly directly on the website or on the cell phone network, given their smaller size.

Figure 18: Ecosystem of Packaged Goods and Digital/Social



Source: Deutsche Bank

On the packaged goods front, there are companies such as Steam and Direct2Drive that enable publishers to distribute games and other media online. These digital distribution companies provide game and application developers with a streamlined process to deliver content to its users, whether for a controlled pre-launch beta or for full publishing of a title. Steam is basically a digital distribution, DRM, and multi-player platform developed by Valve Corporation. The company also has community features, automated game updates, and an in-game communication functionality. Steam currently enables over 1,100 games and has surpassed 25m active user accounts. Direct2Drive is another distribution online game store that offers PC games owned by IGN Entertainment Group via direct download. This service also offers over 1,000 titles through relationships with more than 300 game publishers.

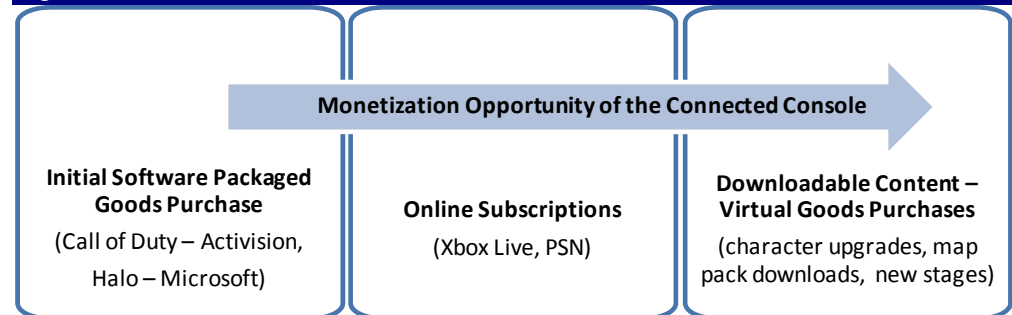
On the other hand, distribution for social and casual games such as Zynga, PopCap, and Playdom are all generally through portals and mobile phones. On the wireless front, consumers are downloading casual games through the iPhone App store or the Android App store for Google. Facebook remains the largest platform for social game distribution online, but there are several other portals offering casual and social distribution – including Pogo, Yahoo Games, and Bebo.

The Connected Console: Billions of Game Play Hours

Online Capabilities Open up New Monetization Opportunities

In the past, the online gaming segment was a key strategy that console makers envisioned in the 32-bit console era. Sega first made an attempt with its Dreamcast console in 1999, but its online capabilities were largely viewed as a failure given the lack of broadband adoption. With the Xbox, Microsoft's strategy was to make a big push into online gaming with its Xbox Live service, which was launched in 2002. Combined with the proliferation of broadband penetration and storage on the Xbox, the online service allowed video gamers to download content from the network, which generally includes features such as new levels, maps, and other expanded content. In 2006, Sony launched its own network, dubbed the Playstation Network or PSN, at the same time as the launch of its current-generation console, the PS3.

Figure 19: Monetization Funnel of the Connected Console



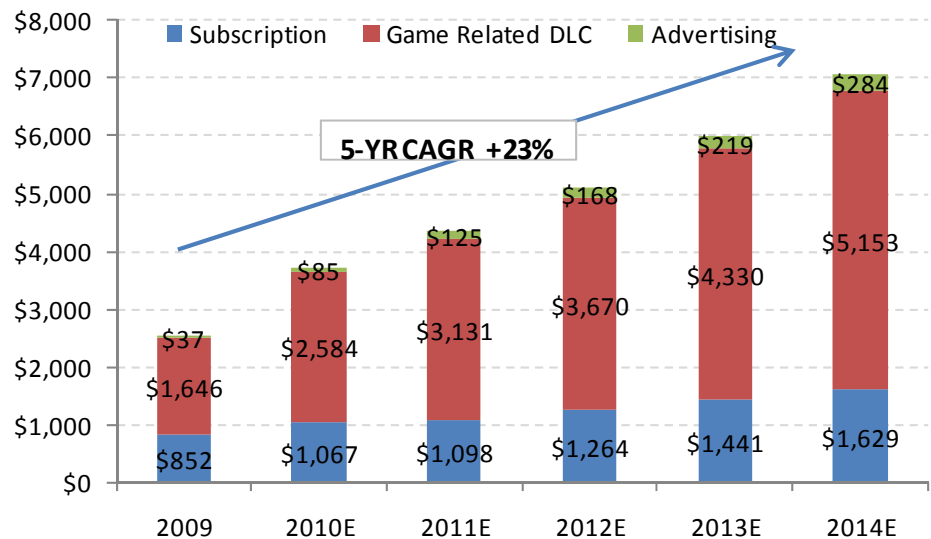
Source: Deutsche Bank

The monetization opportunity all begins after the purchase of a game, for example the Call of Duty Black Ops. A consumer would purchase a game for a retail price of \$60 and play the normal series of the game. With an online subscription service through Xbox Live, a user will pay another \$50 for an annual subscription to play multi-player features. After a few months, publishers could choose to introduce new content – in this example, extended map packages for users to play in multi-level modes. The cost of these packages range from \$10 to \$20 each on average. Think of it as an introduction of new levels of game play with these map pack extensions, generally on a revenue sharing arrangement with Microsoft (for Xbox Live) and Activision (for Call of Duty) in this example. It is a win-win situation for the hardware manufacturer and its online subscription service, and includes higher ARPU for each title unit sold for the publisher.

Market Opportunity for Online Console Gaming: \$7bn by 2014

Expanded content on consoles are driving high user engagement for online subscription services, game-related downloadable content, and to a smaller extent, advertising dollars. In total, the online console gaming market in North America is projected to grow from \$2.5bn in 2009 to over \$7bn by 2014, representing a 23% CAGR over the five-year period. The largest segment is the game-related DLC, which accounted for \$1.6bn in 2009 and is projected to grow to over \$5bn by 2014, driven by publishers expanding more of their title content, to be generated through this distribution method.

Figure 20: NA Online Console Gaming Market Size (2009A-2014E) (\$ in millions)



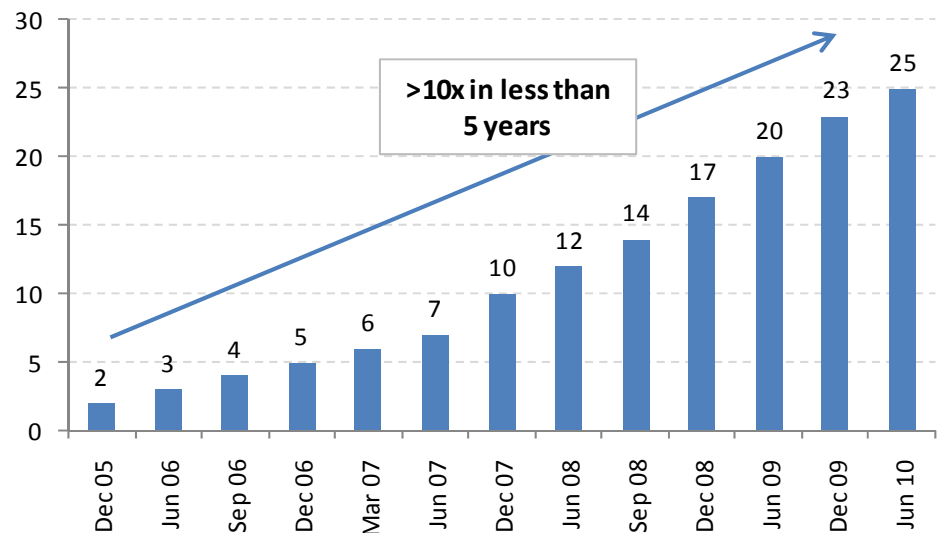
Source: IDC, Deutsche Bank Estimates

Online Gaming Subscription Services

Considering that most packaged video game software sales generally have a 30-day window to maximize sales, the appeal of a connected digital console becomes even more attractive for publishers to harvest longer-term cash flow dollars. It also helps that the adoption of a connected service is appealing to many consumers.

Xbox Live and the Playstation Network, which currently boast 25m and 50m registered users, respectively

The adoption of multi-player modes online for games has driven a large increase of membership registration and usage on console networks. Key beneficiaries of this trend are the Xbox Live and the Playstation Network, which currently boast 25m and 50m registered users, respectively. Despite having fewer subscribers, the Xbox Live service charges an annual fee for upgraded service (roughly half are paying Xbox Live subscribers while the 50m worldwide registered users on the Playstation network do not pay a fee currently; thus, the engagement levels are presumed to be much higher on the Xbox Live. Discussions with gamers typically favor Xbox Live for its ease to find friends and connect during game play. Features are also more seamless compared to the Playstation network.

Figure 21: Xbox Live Members (Dec 2005 – Jun 2010) – (in millions)

Source: Microsoft

Call of Duty Modern Warfare 2, which was launched in November 2009, already racked up 1.75bn hours of game play until April 2010

Members of Xbox Live have grown from 2m in Dec 2005 to 25m as of June 2010, more than 12x growth over the past few years. Engagement levels are very strong on the system, as the Call of Duty Modern Warfare 2 game, which launched in Nov 2009, has already racked up 1.75bn hours of game play until April 2010. In other words, the service racked up 1.75bn hours in about five months, and if we assume about 10m copies were sold on the Xbox Live during that period, it would be equivalent to about 175 hours of online game play for each copy sold – a conservative figure, as it assumes every person that bought a copy is playing online. Another example is Halo Reach, which sold 34m copies (excluding the recent version) with online game play racking up 2bn hours, assuming only 58 hours of online game play for this game.

With already a strong appeal of online games, publishers have introduced expanded content to drive a new “map pack” revolution. Basically, these map packs are extended content for the packaged goods games, further engaging users that are thirsting for additional levels or challenges on the game. The popularity of map packs has been driving more usage and dollars through the ecosystem for publishers and online subscription services. Map packs started with Microsoft’s hugely popular Halo 3 game, for which 25% of its online players paid another \$15 for expanded content through Xbox Live.

After this success, Activision’s Call of Duty Modern Warfare 2 game also debuted three map packs for \$15 on Xbox Live and demand surged to all-time high levels. On the day of the introduction, Xbox Live saw purchase item calls grow substantially on its system through which users redeemed over 1bn points. It was 3x the best day Xbox Live had ever had, with 10x growth for calls to purchase.

Publishers are recognizing the opportunity with all this game play and want to keep users engaged. Map packs have obviously gained massive traction in recent years, especially with the recent success of Activision’s key franchise title, as life-to-date map packs for the Call of Duty franchise surpassed 20m units at the end of June 2010. Margins are probably in the 80-90% level for these games and are a very profitable endeavor for both the online subscription service and the publisher.

Figure 22: Online Service Subscription Comparison List

	Xbox Live	PlayStation Network	WiiWare
Launch Date	Nov 2002	May 2006	Mar 2008
Basic Service	Xbox Live Silver - Free	PSN - Free	Free
Premium Services	Xbox Live Gold - \$50/year	PSN Plus - \$50/year, \$18/ 3-mo	Paid game downloads (\$5-\$15)
Major Consoles Supported	Xbox, Xbox 360	PS3	Wii
User base & Engagement Levels	Highest among the three, higher installed base, content	Lower installed base of the PS3 affects user base	Lowest among the three
Game Variety	Large number of games, original content (Halo)	Least number of games	Largest number of games, but restricted to a few genres
Free Game Demos	Allowed	Allowed	Not Allowed
Integration with other media	Large number of tie-ups including Netflix, ESPN, Sky Sports, Zune market place	Tie-up with Netflix; lags Xbox Live in providing access to other media	Only Netflix (recently launched)
Social Media Integration	Provides access to Facebook and Twitter	Provides access to Facebook and Twitter	No integration with social networks

Source: Deutsche Bank, Company sites

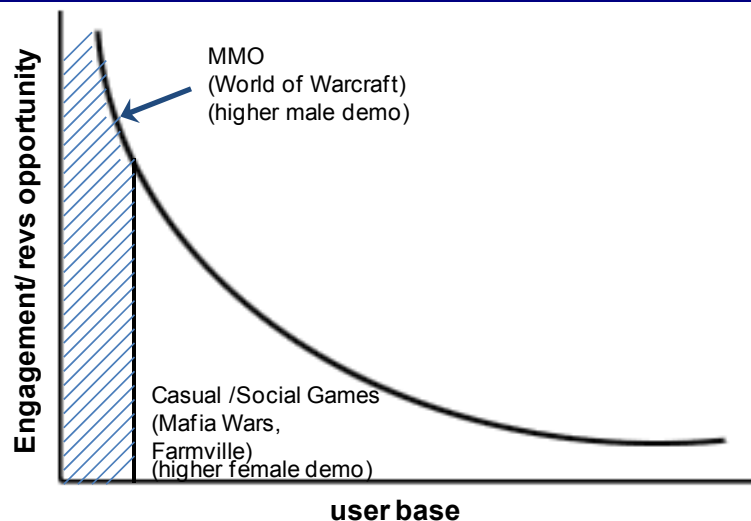
With the explosion of digital content distribution and publishers recognizing economic opportunity, we think digital services reflect a very substantial opportunity. The popularity of map packs and virtual goods have proven that digital can be a viable channel on its own. Publishers should be prepared for unbelievable demand on the content front from the Xbox Live subscriber base alone. More importantly, digital does not have the same supply chain challenges as traditional packaged software and could maximize publisher profit dollars.

MMOs: The Virtual World

The Social and Highly Engaging Aspects of MMO

In the world of video games, the consumer game play ability has expanded beyond traditional video game consoles. Computing power continues to proliferate and boost video graphic card performance; the PC continues to command a significant amount of game play, especially in the world of MMO-RPG (Massively Multi-player Online Role Playing Game). Basically, massively multi-player online games, or MMO for short, allow hundreds and thousands of gamers to play simultaneously. It is distinguished from single-player or small multi-player groups by the number of players, and by the game's persistent world, usually hosted by the game's publisher, which continues to exist and evolve while the player is away from the game. The most common genres for MMOs include role playing, first person shooter (FPS), and real-time strategy (RTS) games. While this type of game play has been around since the 90s, Blizzard's World of Warcraft has certainly brought MMOs into the public spotlight.

Figure 23: MMO on the Forefront of Engagement and Revenue Opportunity



Source: Deutsche Bank

The online MMORPG market is a very profitable business, especially with its scale and wide-reaching consumer appeal. On the World of Warcraft alone we model revenues of nearly \$2bn with a highly engaged audience. This estimate also includes growth of the buying and trading of virtual goods within these communities. Activision-Blizzard's World of Warcraft dominates, with over 12m subscribers in this market, though an additional market exists for free-to-play MMOs that are generally supported by advertising and purchases of in-game items. This free-to-play model is particularly common in Korean MMOs such as MapleStory, while Guild Wars only requires the initial purchase of the game to play.

The typical MMO gamer is similar to a PC gamer as there is a lot of overlap and is generally skewed towards male users, while the casual and social games skew higher towards female users. MMOs are also viewed more as a service provider rather than just pure product models. We think this model tends to be more sustainable in the longer term as some MMOs are still making money 15 years after their entry into the market. The value to a user is measured in years, rather than unit sales in the first few months. The recent challenges for MMO service providers occur when trying to expand outside of the domestic market. There have been some localization challenges, in particular in China, where homegrown players are

avored and content restrictions are heavily regulated. Players cannot enter China alone but instead need to partner with local companies. For example, Activision's World of Warcraft partnered with China's Netease.

The beauty of the economic model in these virtual worlds is its scale opportunity in its system. Development costs generally make up the bulk of these game play systems, with servers and bandwidth cost making up the rest.

Figure 24: Game Characteristics – MMOs vs. Core Games

	MMOs	Core Console Games
Target Audience	Younger males	Younger males, slightly higher mix of females
# of Players	1,000+	1-20
Persistent World	Yes	No
Popular Genres	Largely role playing	Shooter, Role playing, Simulation
Play time	30min - 2 hrs/ session; over 20hrs a week	30min - 2 hrs per session
Reason for playing	Adrenaline rush and social interactions	Adrenaline rush
Distribution Channels	Largely PCs	Consoles, hi-spec PCs
Pricing	Monthly subscriptions	Upfront purchase
Development Costs	Est. \$50m-\$100m	\$5m-\$40m
Game Promotion	Viral	Marketing campaigns

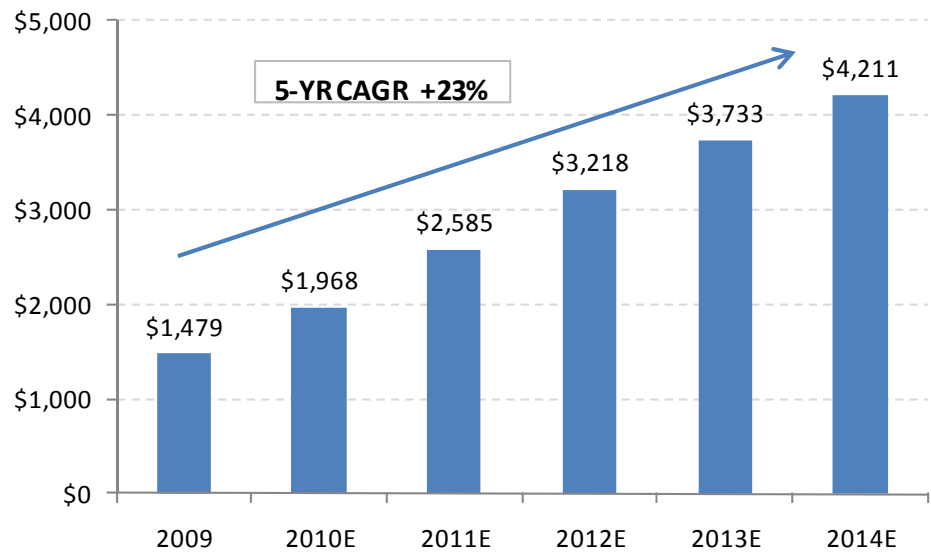
Source: Deutsche Bank Estimates

MMO Market Size and Growth

According to IDC and Deutsche Bank estimates, the US MMO and casual gaming subscription market was worth ~\$1.5bn in 2009 and is likely to grow at a CAGR of over 23% to reach ~\$4.2bn by 2014. Market growth is driven by multiple factors, including the following:

- **Increased broadband and PC penetration**, coupled with the rapidly falling costs of PCs and specifically of video graphics performance, would drive more users to play MMOs with complex and extensive game play.
- **Larger number of MMOs**: To buck the weakness in console packaged goods, many large video game publishers are introducing new MMOs and investing in expanding existing MMOs. MMOs are slowly expanding beyond their core genre of role-playing games to other genres (including simulations/arcade games), a trend that would help attract new users and expand the demographic profile of MMO gamers to wider audiences.
- **Higher monetization**: We believe the ramp in the monetization models would be the strongest growth driver for the MMO market over the next few years. We are particularly optimistic on the growth potential for micro-transactions, led by an improvement in payment methods. As people grow more comfortable with virtual currencies and with the ramp in payment methods such as pre-paid cards (especially in developing countries), we expect a solid increase in the number of micro-transactions and the usage of virtual currency.

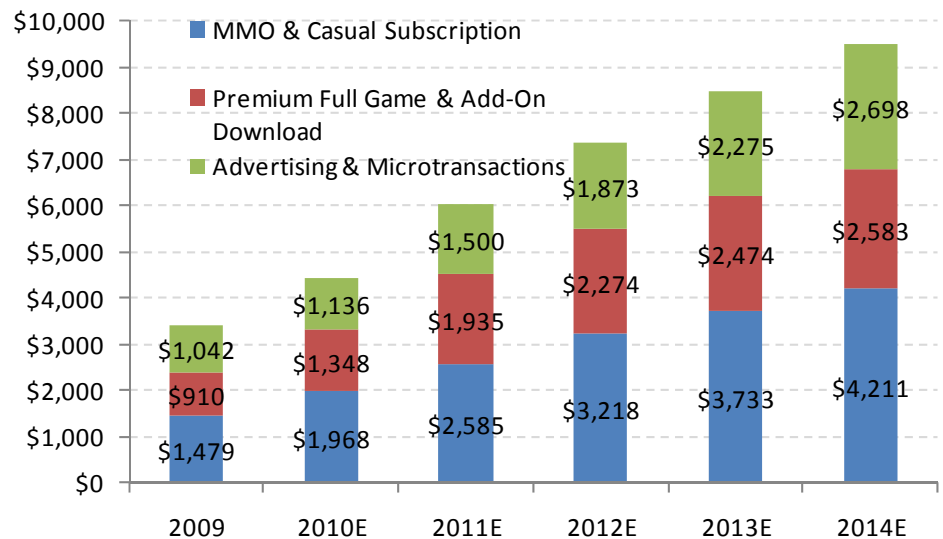
Figure 25: US MMO and Casual Subscription Market Size (2009-2014E) (\$ in millions)



Source: IDC and Deutsche Bank Estimates

As such, revenues from micro-transactions and subscriptions are likely to grow at a slightly faster pace than revenues from direct software downloads. Note that as games become more dependent on revenues from micro-transactions, the initial upfront cost to play a game fall, eliminating the barrier to attract large audiences.

Figure 26: US Online PC Gaming Market Segment Breakout (\$ in millions)



Source: IDC, Deutsche Bank Estimates

To show the relative size of the MMO subscription market relative to total US online PC gaming, the chart above shows that MMO is actually one of the largest components. The advertising and micro-transactions segment is the next largest, which is likely to grow from \$1bn in 2009 to \$2.7bn by 2014, representing a CAGR of 21% over the five-year period. The smallest segment in the PC gaming segment breakout is the premium full game and add-on download segment. Although the smallest segment, it should grow from \$910m in 2009 to \$2.6bn by 2014, representing a CAGR of 23% over that time period.

Social and entertainment dynamics drive MMO popularity

The popularity of MMOs are its social features (which often is lost on developers at times), ongoing dynamic game play, and entertainment value. These communities are based on teamwork and incorporate many social interactions among fictitious characters during game play. Because of its dynamic nature, the mythical world continuously evolves even when the player is not present, which simulates ongoing game play. Lastly, at an average cost of \$15 per month, the average gamer plays about an hour a day, or equivalent to \$0.50 an hour, a solid value for an hour's worth of entertainment, compared to an average \$10 cost for a movie ticket.

The average gamer plays about an hour a day, or equivalent to \$0.50 an hour, a solid value for an hour's worth of entertainment

These worlds can come in many shapes and forms, and the World of Warcraft clearly leads this space with 12m subscribers globally. There are also subscribers to the free program on RuneScape, which boasts 15m accounts with an estimated 1.2m subscribers. Meanwhile, in the free MMO RPG games, MapleStory and Guild Wars lead with an estimated 5m subscribers each, and many of these free communities have been testing with monetization via micro-payments, pay-to-play features, and buying/selling virtual goods in its marketplace.

The Story of a Horse: Engagement Drives Monetization

Downloadable content did not always have strong reception from Xbox Live users. For example, when new downloadable content for the game Elder Scrolls IV: Oblivion was first introduced, users complained that Xbox Live started to charge users for an extra item for the game called "horse armor". In the game play, horses helped the player travel faster and across locations, but would often die in game play battles, hence the introduction of "horse armor" as protection during battle, thus prolonging game play. At first there was massive objection against having to pay extra for digital services and that they were getting ripped off. However, since the introduction of the "horse armor" in 2006, subscribers have purchased hundreds and thousands of this expanded digital content. Sales of horse armors are actually selling more today than they did in 2006. So, the lesson learned from this experience is that consumers will still buy digital goods and value in-game items, but developing the value of the digital good is based on the level of user engagement with the game.

MMO Monetization Models

Based on their monetization model, MMOs can primarily be divided into subscription-based and free-to-play. While subscription-based games primarily rely on a monthly subscription for a large proportion of their revenues, free-to-play games are monetized using virtual goods. While most MMOs are traditionally subscription based, the trend of late has been towards using hybrid monetization models that involve subscriptions, virtual goods/micro-transactions, pay-to-play features, and to a smaller extent, advertising.

- **Subscriptions:** Subscription-based plans vary largely across regions. While monthly subscriptions are popular in North America and Europe, hour-based access is more popular in Asia (particularly Korea and China), where a large number of gamers play in game rooms and cyber cafes. Monthly subscriptions mostly range from \$10 to \$15. At an average weekly usage of 20-plus hours, this translates into one of the lowest per hour entertainment costs, thereby indicating the solid value for money of MMOs. Hourly access rates vary across countries. While in some countries, simple hour-based access plans are popular, in others (such as China) cyber cafes/game rooms charge by the hour for both the game and the use of a PC.
- **Micro-transactions and pay-to-play features:** Similar to social games, most MMOs feature virtual economies in which fictitious characters co-exist. It is possible to purchase virtual goods that enhance the player's capabilities and improve the game play. Further, some games might feature unlocking new levels and digital content such as maps. These items can be accumulated through game play or by using virtual currency. It is

these virtual currencies that link the virtual economies in the MMOs to the real world, as virtual currency can be bought by paying real currency. For example, in the World of Warcraft, its virtual currency to buy items within the world is called gold. Within this world, gold can be used to upgrade the character with offensive and defensive mechanisms. For an average player, it would take about an hour to generate about 50-100 gold. So gamers who want to upgrade their character immediately can purchase gold online through other players and websites, which sells for about \$1-\$3 per 100 gold. Clearly, with millions of users playing MMOs, the use of micro-transactions to enhance and extend game play is a huge revenue opportunity for publishers.

Figure 27: Comparison of Subscription-Based MMOs and Free-to-Play / Credits

SUBSCRIPTION-BASED

Title	Release	Subscribers (1)	Monthly Fee (2)	Description
World of Warcraft	2004	12,000,000	\$14.99	Blizzard franchise with strong engaged user base
Aion	2009	3,500,000	\$15.00	NC Soft title, developed in Korea, fantasy genre game, recently Westernized
RuneScape	2001	1,200,000	\$5.95	Jagex developed game, popular free MMORPG with 15m accounts
Lineage II	2003	1,000,000	\$7.50	NC Soft title, developed in Korea
Final Fantasy XI	2002	500,000	\$12.95	Square enix game, popular in Japan
Dofus	2005	500,000	\$7.00	Ankama Games, pay-to-play games, new version in beta test (Wakfu)
Warhammer Online	2008	300,000	\$14.99	Electronic Arts game, developed by Mythic, 800k users in Sept 2008
EVE Online	2003	245,000	\$14.95	Science fiction game developed by CCP games (Iceland)

FREE MMORPG

Title	Release	Subscribers (1)	Monthly Fee (2)	Description
Habbo	2000	185,000,000	Free/Credits	Social networking website targeting teens, interacts in virtual hotel
MapleStory	2005	5,000,000	Free/Credits	Developed by WizNet, uses micro-transactions for virtual currency
Guild Wars	2005	5,000,000	Free/Credits	NC Soft title, created by senior Blizzard developers
Knight Online	2004	4,250,000	Free/Credits	Mgame developed game (Korea), requires SSN to register, some pay features
Second Life	2003	1,761,927	Free/Credits	Developed by LindenLab, the virtual world has own economy using virtual dollars
Hattrick	1997	934,000	Free/Credits	Online browser-based soccer game (Sweden), pay-to-play features

Source: Deutsche Bank Estimates, 1) Based on industry publications, company websites, press releases and Deutsche Bank estimates, for Habbo using registered user, 2) Monthly fees vary by region, or hourly access card rates (popular in Asia)

Teenage Social Powerhouse Profile: Habbo

Owned and operated by Sulake Corporation, Habbo could be the world's largest virtual community for teenagers. On the above chart, Habbo clearly stands out as one of the larger, if not the largest, free-to-play MMOs with customers in over 150 countries. With 185m registered users worldwide as of Sept 2010, this site drives 1.7bn impressions monthly, with its community 90% comprised of teenagers (13-18 years old).

Entering the Habbo world is free for users, but access to premium services requires Habbo Credits, which is the virtual world's currency. These credits are used to pay, for example, virtual furniture and elements for the homepage. The core of the Habbo experience is the virtual world or "virtual hotel", Habbo Hotel. There are currently over 120 million user-generated rooms in the different Habbo communities. User-generated content dominates the Habbo Hotel world and is filled with different kinds of ongoing events, competitions, quests, and other happenings, most of them created by the users themselves. As such, engagement is very high on the site, with the average visit lasting 41 minutes per session.

Members have their own Habbo home pages where they can present their virtual life in Habbo. The personal pages are naturally highly customizable and can be used for sharing content, forming different kinds of groups, etc. Habbo Hotel can be accessed via the local Habbo sites and through the world's largest social networking site, Facebook, where all 11 of Habbo Hotel's language versions are also available. Through Facebook Connect, Habbo users around the world can easily find their Facebook friends in the virtual world and share their in-world experiences.

While the user metrics are certainly impressive, monetization presents a challenge to social networks targeted at such a young demographic. Again, given that mainly teens focus on the likes of Habbo Hotel, Club Penguin (Disney), and Zwinky (IACI), most teens do not have credit cards and must often rely on receiving permission from their parents. Hence, monetization through this model could be challenging, but still addressed. We believe one way to address this obstacle is through subscriptions, where transactions do not have to occur daily, but is rather comprised of an all-inclusive pass that allows users to access a level of premium services. Alternatively, maybe a points-based system that allows users to spend up to a certain point level each month, potentially with a “dashboard” for parents to monitor, could help such games overcome this challenge.

Dynamics different in Asia, but this may be where MMO market is headed

We believe the North American market will start to adopt the likes of the Asia-based model, which relies more on micro-transactions as a revenue model. Given the rapid growth and success of the MMO model in China, where the free-to-play market is popular and monetization rates are high, this attracted heavy competition.

There were more than 300 MMO launches in 2009 alone, and companies are now seeking new ways to differentiate. In China, companies in this space include: Changyou.com, Giant Interactive Group, NetEase.com, Perfect World, Shanda, Tencent, and The9 Limited (China internet covered by Deutsche Bank analyst Alan Hellawell). We estimate the average cost of an MMO to be about \$5-6m to develop in China, with 10,000 peak concurrent users as its breakeven point from an advertising/micro-transactions perspective.

In Korea, the leaders are Nexon, NHN, and NC Soft. Many industry observers consider Nexon to be the pioneer in virtual goods globally. It first developed an MMO in 1996 and several are still profitable 15 years later. Again, the view in Asia is that users are not monetized in months, but in years. On average, 20% of its users purchase virtual goods, and in 2009 alone, Nexon generated revenue of \$561m (+56% y-o-y), with half coming from overseas. Two of Nexon’s more popular games have over 200m registered users (Kart Rider, Dungeon & Fighter).

Obviously, the virtual currency market is at a much more developed stage in Asia. In China, Tencent’s QQ game portal is the largest casual gaming portal in the world with 100m active users on its platform. All of its games use the micro-transaction model. Nexon’s MapleStory in Korea also leverages micro-transactions/virtual currency for its MMO. Even large western publishers that used to license online titles to Asia-based gaming operators have adapted to the micro-transaction model to drive penetration in the Asia market.

In the longer term, we believe the opportunity of the micro-transaction model could further penetrate the US if we consider Asia a proxy. Considering that only less than 5% of users are purchasing virtual goods today, compared to Asia, which is closer to 20%, we believe the opportunity in the US is still in the early stages. As more streamlined platforms for virtual currency are rolled out, such as Facebook Credits, adoption and penetration of virtual currency should continue to proliferate and gain share in the US.

Select MMO Industry Players

Activision|Blizzard

Blizzard Entertainment, a division of Activision|Blizzard, is a pioneer in massively multi-player online games. It operates the largest multi-player virtual player platform – World of Warcraft, which has over 12m users. Other franchises operated by the company include StarCraft and Diablo. In addition, the company recently launched an online-gaming platform, Battle.net, across all its major titles, which allows for increased communication between players of different games. Key MMO titles: World of Warcraft, StarCraft, Diablo.

Jagex Games Studio (Privately Held)

Best known for its RuneScape MMO, which is the world's largest free-to-play MMO, Jagex also offers free-to-play casual games and games for iPhones. Other MMOs offered by the company include the War of Legends and the recently announced release of a new sci-fi MMO, Stellar Dawn, in 2011. The company also recently purchased a well-known multi-player game, Planetarion (PA), from Renegade Games. Jagex is headquartered in the UK and has over 350 employees. Key games: RuneScape, Stellar Dawn, War of Legends.

Square Enix (Covered by Deutsche Bank Japan Analyst Satoru Kikuchi)

Square Enix develops and publishes interactive entertainment content for distribution as packaged goods and online games. Its business model revolves around a 'polymorphic content' strategy that consists of leveraging IP by publishing it across hardware and media types. Its main IP is Final Fantasy, distributed as an MMO and packaged goods software. Other key titles include Dragon Quest, Tomb Raiders, and the Kingdom Hearts series. It recently partnered with Ankama to launch a free-to-play MMORPG, WAKFU, in North America. Key games: Final Fantasy, Dragon Quest, Tomb Raiders.

Nexon (Privately Held)

Nexon is a Korea-based developer of online casual games and MMOs. It released its first MMO (The Kingdom of the Winds) in 1995 and has since introduced a number of widely popular online games, including the world's first internet quiz game, QPlay, Crazy Arcade BnB, KartRider, and Dungeon Fighter Online. Its first US release, MapleStory, is one of the most popular free-to-play MMOs, with over 95m users worldwide and over 6m users in North America. Through its partnership with Nintendo, it has introduced MapleStory on the Nintendo DS. Key games: MapleStory, QPlay, KartRider.

Electronic Arts

Electronic Arts publishes and distributes MMOs through its Mythic Entertainment studio, which it acquired in mid-2006. Key MMO titles published by Mythic Entertainment include Warhammer Online, Dark Age of Camelot, and Ultima Online. In line with its new strategy of leveraging its core IPs across platforms, EA plans to release MMOs for some of its leading titles. Most recently, it released an MMO version of its racing/simulation titles, Need for Speed, and spent tens of millions of dollars in developing its upcoming Star Wars MMO scheduled to be released in 2011. Key games: Warhammer Online, Star Wars: The Old Republic, Dark Age of Camelot, Need for Speed.

Gaming across Social Media

Turning Virtual Credits into Real Dollars

Historically, casual games were primarily playable or downloadable from websites. However, of late, social networks such as Facebook and MySpace have become the most important distribution platforms for these games, giving rise to a new sub-category of social games. The avenue to interact with players/friends both during the game and after it largely differentiates social games from other internet-based casual games. The virality offered by social networks has especially helped to increase both the number of social gamers and their engagement. In the few years since they have been launched, social games have attained widespread popularity among broader audiences, with a recent NPD report indicating that over a fifth of the US population has played social games. Owing to their easy game play (simpler controls and rules), low upfront costs (most games are free-to-play), the relatively little time required to master, and the fewer hardware specs required, social games are attracting wider audiences beyond core gamers. NPD estimates that ~35% of social gamers did not play games prior to playing on social networks.

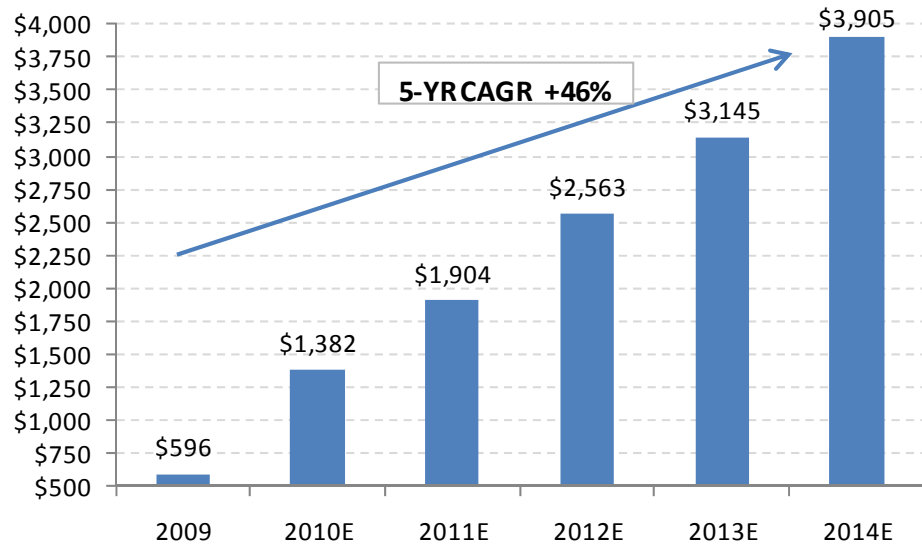
...recent NPD report indicates that over a fifth of the US population has played social games

Social Gaming Growing at 46% 5-YR CAGR, a \$4bn Market by 2014

Given the broad audience of social gaming, the market opportunity to gain share from traditional channels, such as board games and toys, is still in the early stages. The global toys and games market grew 3% in 2009 to reach a value of \$66.3bn, and by 2014, the market is forecast to reach \$84.9bn, according to Data Monitor. So, our estimate that the US social gaming market was worth ~\$600m in 2009 only represents a penetration rate of 1.8% of the US gaming market, assuming that 50% of the global market is represented in the US. We also expect the social gaming market to grow at a high CAGR of over 46%, reaching \$3.9bn by 2014.

Geographically, we believe the US currently represents over 50% of the global market. However, looking ahead, we expect other geographies (particularly Asia and Europe) to grow in importance. As such, our growth assumptions are driven by multiple factors, including the following:

- **Increase in users of social networking websites:** This would in turn be driven by an increase in internet users (especially in developing countries) and a favorable mix shift in media consumption towards social networking websites.
- **Increased penetration of social networking users playing games:** This would primarily be due to the viral nature of social games, the emergence of new genres, and possible improvements in the game play of social games.
- **Higher Monetization:** The emergence and ramp-up of newer monetization models such as micro-transactions and offer-based ads would further drive social gaming revenues.

Figure 28: US Social Gaming Market Size (2009-2014E)

Source: Deutsche Bank Estimates

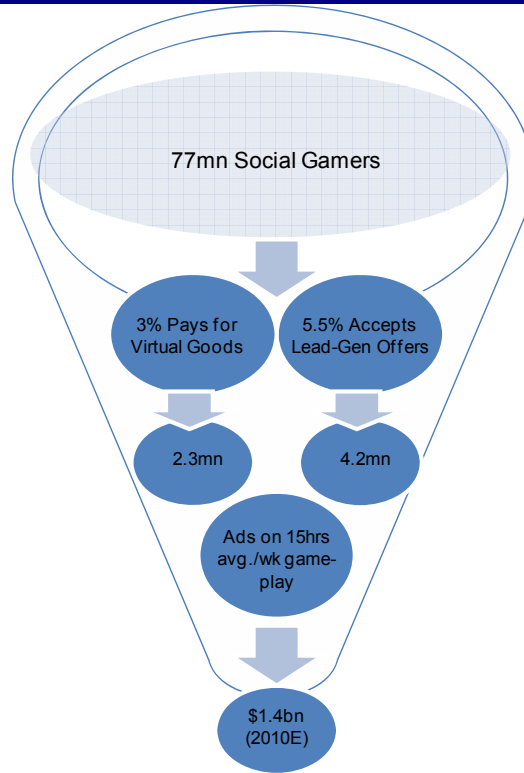
Specifically, we used the following assumptions in our estimates of the market size.

Figure 29: Assumptions for US Social Gaming Market Size

	2009	2014E	Comments
Social Gaming Users			
Internet Users	223m	264m	3% annual growth
Penetration of Casual Social Networks	65%	83%	
Social networking users playing games	38%	51%	Driven by new games, viral marketing
Micro-transactions			
Users purchasing virtual goods	2.0%	5.0%	Evolution of payment methods to help
Monthly ARPPU	\$22	\$35	
Offer-based ads			
Users accepting offer based ads	5.0%	7.25%	Better offers, wider range of marketers
Revenue per ad	\$2.75	\$3.70	Higher ROI of offers to help
Traditional Ads			
Hours per user per week	5	10	
Revenue per Ad	\$0.20	\$0.24	Alternative ad formats to affect growth

Source: Deutsche Bank Estimates, company data

Figure 30: Conversion Funnel of Social Gamers Example

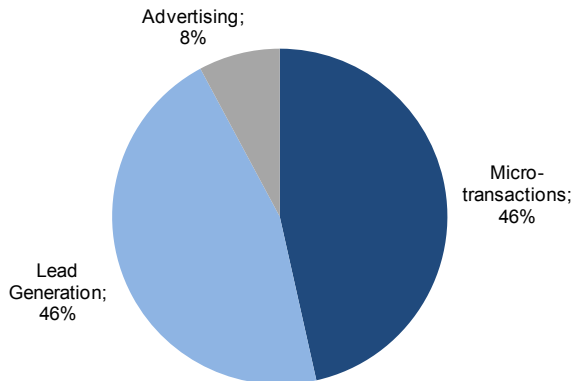


Source: Deutsche Bank Estimates, comScore

Virtual Goods are the Important Monetization Model

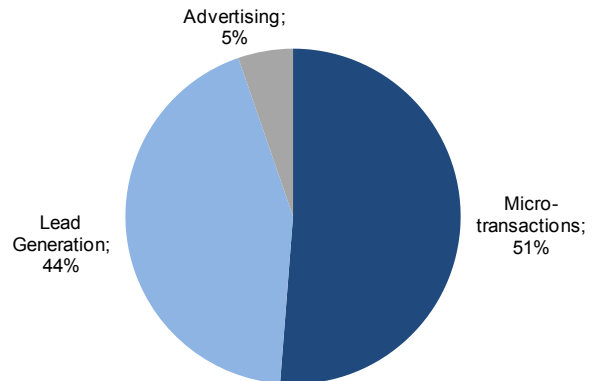
Our analysis of the market size of social games suggests that the sale of virtual goods is the most important revenue source for social gaming companies. Despite a very small percentage of users buying virtual goods, the revenue contribution to the total mix is significant primarily due to higher ARPUs. We estimate an average paying user may be spending up to \$30 on virtual goods per month, significantly higher than the possible revenues generated by marketing offers (lead generation) or advertisements. As such, our analysis suggests that social gaming companies currently generate ~46% of their total revenues from the sale of virtual goods. The virtual goods market is an amazing business opportunity for all players in the ecosystem. Users enjoy these virtual goods as a service, and we believe that if publishers stick to providing a great experience for users, the virtual dollars will follow.

Figure 31: Revenue Mix of Social Games (2009)



Source: Deutsche Bank Estimates, company data

Figure 32: Revenue Mix of Social Games (2013E)



Source: Deutsche Bank Estimates

Micro-transactions and Offer-based Ads Increasing in Importance for Monetization

The evolution of virtual goods and innovative offer-based ads is rapidly changing the monetization landscape of social games, a trend that we expect to gain pace in coming years. Offer-based ads are increasing in popularity with both publishers and marketers as the ads enable the conversion of users that are not willing to directly pay for a game; yet, the ads offer marketers a high ROI, which is easily measurable, given the transaction-oriented nature of the offers. Further, we believe the usage of virtual currency (which enables micro-transactions) should increase over the next few years as friction related to payment methods is reduced. Specifically, we are encouraged by the recent trend of key publishers that is moving towards unified virtual currencies. A common virtual currency (such as the recently introduced Facebook Credits) can be used across applications/games and would help increase the adoption of virtual currencies by making micro-transactions easier, in our opinion.

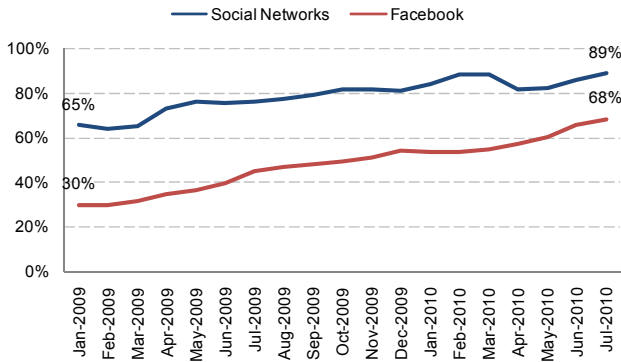
...the usage of virtual currency should increase over the next few years as friction related to payment methods is reduced

Further, the evolution of mobile payment platforms (which should be aided by unified virtual currencies) and the wider availability of pre-paid cards should help drive penetration levels for the purchase of virtual goods. We remain excited about the evolution of this space given the entry of large players including Facebook (with Facebook Credits) and Google (with its recent \$70m acquisition of Jambool, a payment services provider for social games).

Benefiting from Growth of Social Networks

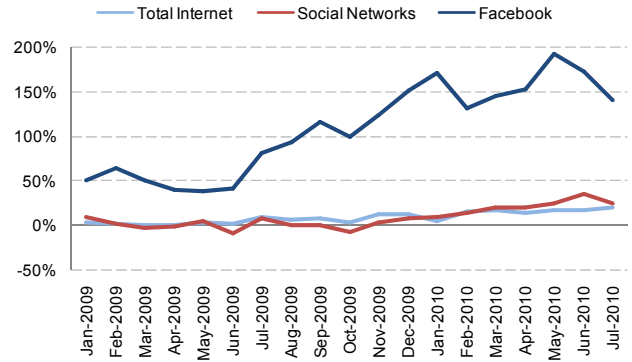
The strong growth in the number of social gaming users is primarily being driven by the increasing penetration of social networks. Over the past couple of years, the reach and scale of social networks have expanded exponentially and today social networks represent one of the largest categories in terms of time spent online. As such, ~90% of all internet users visit social networking sites in the US, up from ~65% in January 2009.

Figure 33: Social Network – Digital Media Penetration



Source: Deutsche Bank, comScore

Figure 34: Social Networks – Page View Growth (y-o-y)

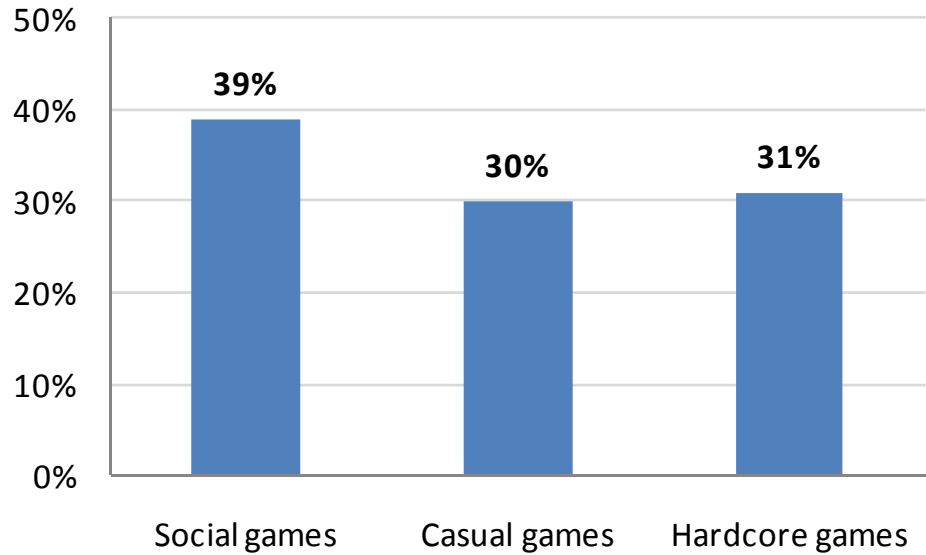


Source: Deutsche Bank, comScore

Positive traffic trends for social networks have been driven by strong growth for Facebook, which is the most popular platform for social games. Both growth in page views and time spent for Facebook have outpaced growth at other social networks and the broader internet. With positive growth trends for social networks and particularly Facebook likely to continue over the next few years, we believe social games would stand to be the biggest beneficiaries.

Taking Share from Other Genres; Facebook is Where Social Gamers Play

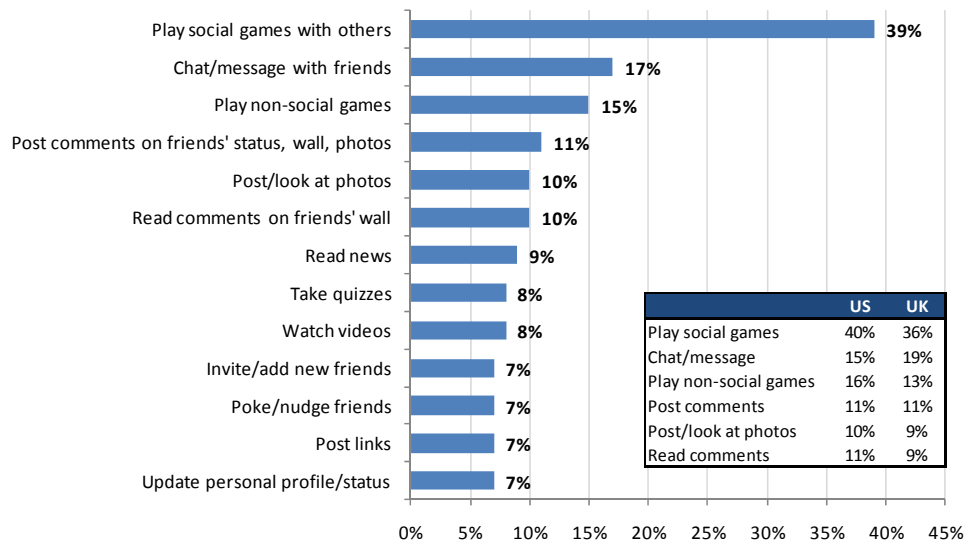
Figure 35: Social Games Lead Game Play Genres – US



Source: ISG/Popcap n=1202

From a time spent standpoint, the percentage of time spent on social activities for gamers that play casual and hardcore games actually outpaces both categories. Social games represent 39% of total game play time, while casual games and hardcore games represent only 30% and 31% of total time, respectively. We believe the social element adds a lot more engagement compared to casual and hardcore games, leading to the much higher percentage depicted in recent casual gaming research.

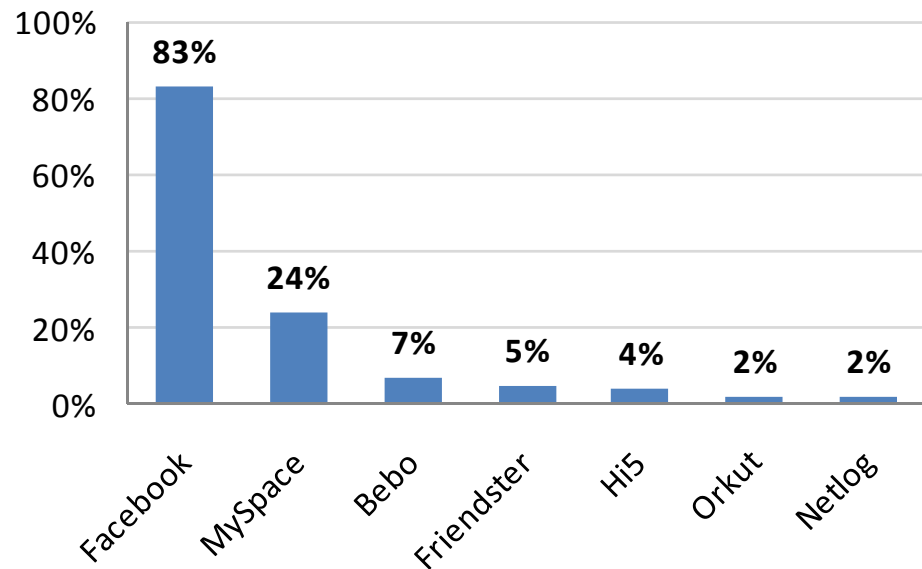
Figure 36: Popular Social Networking Activities



Source: ISG/Popcap n=1202

With the popularity of social networking, social gaming tops the charts in terms of activities that Facebook and MySpace users engage in while on the site. The average social gamer spends more than half of his/her total time playing games, both social and casual. In fact, 39% of users spend their time playing social games, followed by chatting and messaging with friends, accounting for 17% of total time spent. Non-social games, which are mostly casual-type games, account for the third most time spent on social networking sites, or 15% of the total. To highlight the difference between US and UK gamers, US gamers tend to spend more time playing social games (40% vs. 36%) and less time chatting/messaging (15% vs. 19%) when compared to consumers across the pond.

Figure 37: Primary Social Networking Sites Where Gamers Play



Source: ISG/Popcap n=1202

It is no surprise that the primary social sites gamers play are on Facebook, which account for 83% of the surveyed data. According to respondents, Facebook is the dominant site where gamers play, followed by MySpace at 24% and Bebo at 7%, and four others that account for 5% or less each of where gamers play.

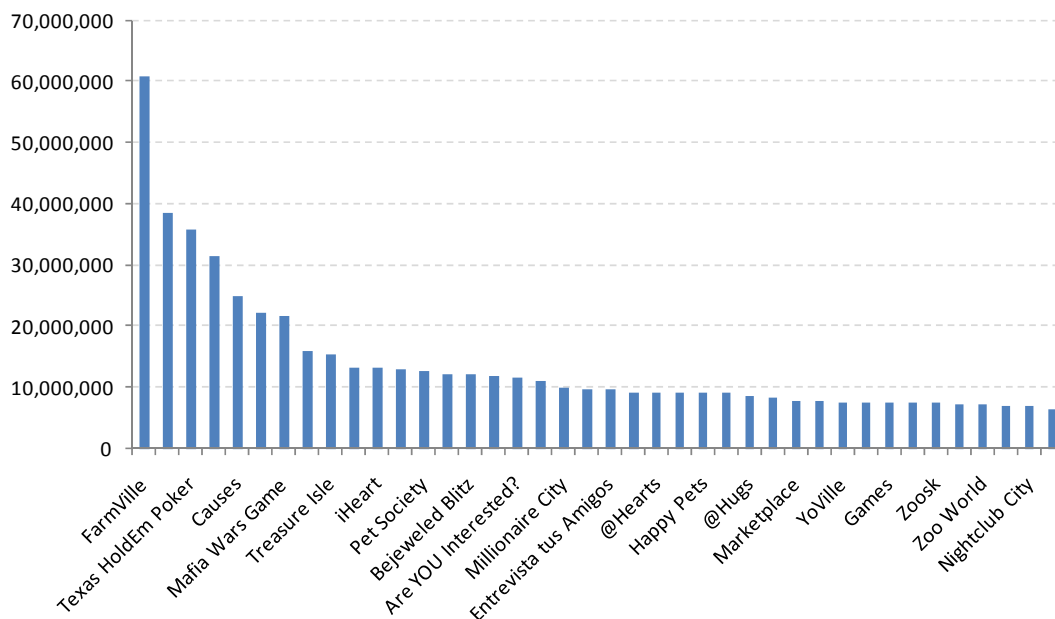
Figure 38: Social Gaming Application Metrics Snapshot (as of 9/30/10)

Rank	Application	Monthly Active Users (MAU)
1	FarmVille	62,105,639
2	Phrases	36,283,306
3	Texas Hold'em Poker	35,522,911
4	FrontierVille	31,284,826
5	Causes	22,230,039
6	Café World	21,926,035
7	Mafia Wars Game	21,286,908
8	Treasure Isle	15,612,641
9	Quiz Planet	14,461,956
10	MindJolt Games	13,906,164
11	Pet Society	13,141,826
12	iHeart	13,072,671
13	Happy Aquarium	12,748,113
14	PetVille	12,598,766
15	Bejeweled Blitz	12,363,727
16	Music	10,750,738
17	Give Hearts	10,711,543
18	City of Wonder	10,584,234
19	Restaurant City	10,134,091
20	Entrevista tus Amigos	9,663,408

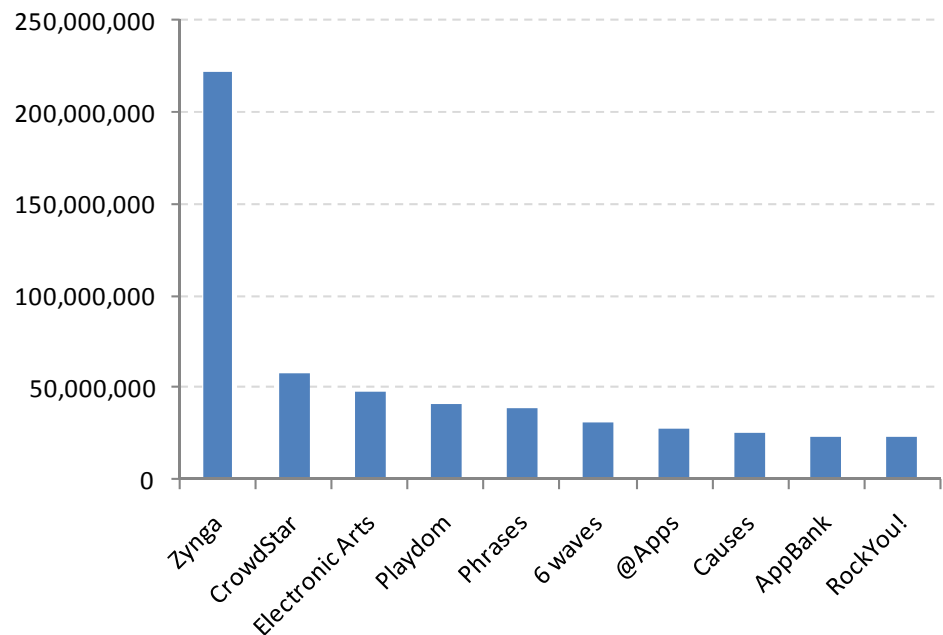
Source: Appdata

From an application standpoint, the most popular game, as tracked by Appdata, is the FarmVille gaming app, with the highest monthly active users at 62m. Zynga, one of the top developers on the social gaming platform, dominates the monthly active user leader board with six of the top 10 games (Farmville, Texas Hold'em, FrontierVille, Café World, Mafia Wars, and Treasure Isle).

Figure 39: Application Monthly Active Users – FarmVille Tops at Over 60m



Source: Appdata. Data as of 10/11/10

Figure 40: Monthly Active Users (MAU) By Developer – Top 10

Source: Appdata. As of 10/11/10

Given the relative technological ease of creating an application, the marketplace is highly fragmented, with hundreds of developers. However, within the top 10 developers, Zynga commands a dominating position, accounting for over 40% of the MAUs represented by the top 10 developers. Clearly, its popular applications such as FarmVille and Texas Hold'em Poker continue to attract a large number of users. Most other app developers create applications that target only specific genres/user segments and hence have relatively low MAUs. As such, these developers have not been able to launch applications that have mass appeal and thus there is a sharp drop in MAUs beyond Zynga.

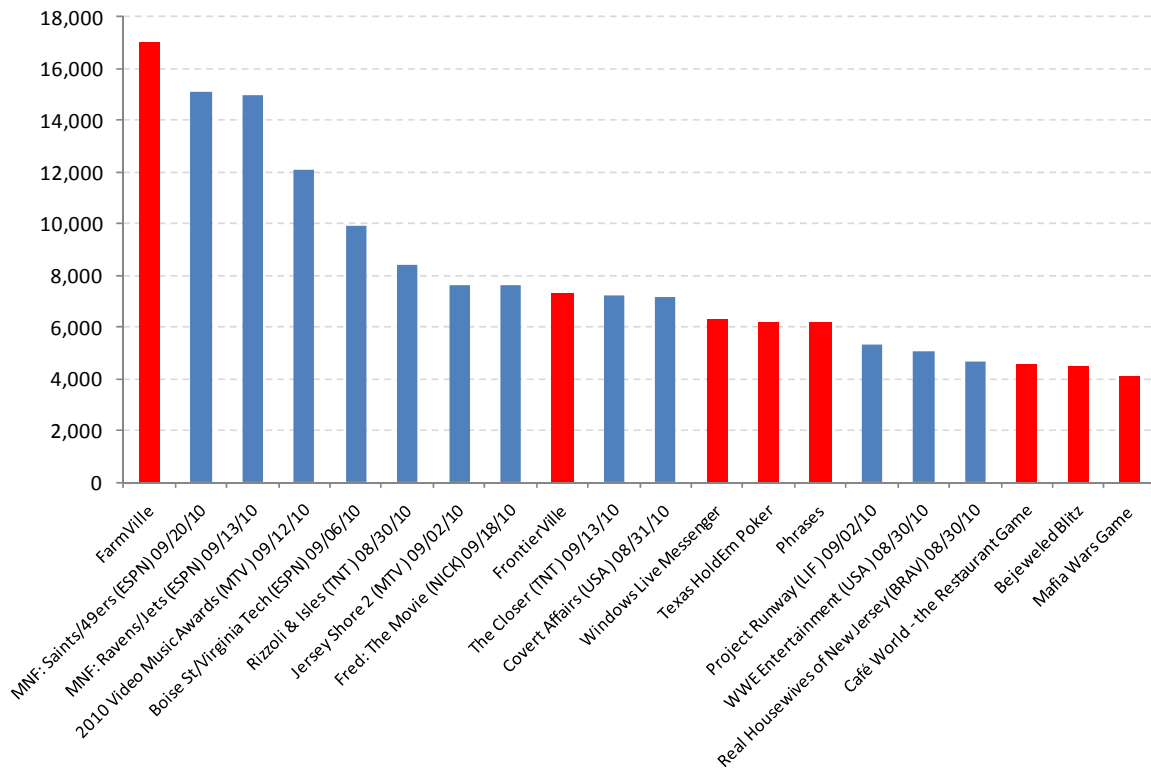
Figure 41: Top 10 App Developers and Popular Apps

Rank	Developer	MAU	No. of Apps	MAU/App	Popular Apps
1	Zynga	221,551,370	52	4,260,603	<i>Texas Hold'em Poker, Pirates: Rule the Caribbean!, Blackjack, Triumph, Duels</i>
2	CrowdStar	58,062,086	19	3,055,899	<i>Quiz Planet, Social Game Studio, World War II, Restaurant Life (BETA), Happy Island</i>
3	Electronic Arts	47,339,779	35	1,352,565	<i>Madden NFL 08, Pogo Games Fanatic, Bowling Buddies, Who Has the Biggest Brain?</i>
4	Playdom	41,183,643	38	1,083,780	<i>Knighthood, (Lil) Green Patch, Sorority Life, Youtopia, WSOP Poker</i>
5	Phrases	38,555,367	1	38,555,367	<i>Phrases</i>
6	6 waves	30,637,146	140	218,837	<i>Ultimate Slot Machines, Mario Gifts</i>
7	@Apps	27,192,107	3	9,064,036	<i>@Hearts, @Hugs, @Smiles</i>
8	Causes	24,957,975	1	24,957,975	<i>Causes</i>
9	AppBank	23,643,331	5	4,728,666	<i>Friend Hug, Kiss Kiss, Send Flowers, AppBank, Sexy Name Decoder</i>
10	RockYou!	23,603,447	20	1,180,172	<i>Horoscopes, Photos and Slideshows, Hug Me, Chuck Norris, Likeness</i>

Source: AppData

The popularity of Zynga's applications is also evident in the average MAU/App statistic. Among all game developers, Zynga's applications are by far the most popular. The other social networking applications that command mass appeal include the word game Phrases and the donation application Causes.

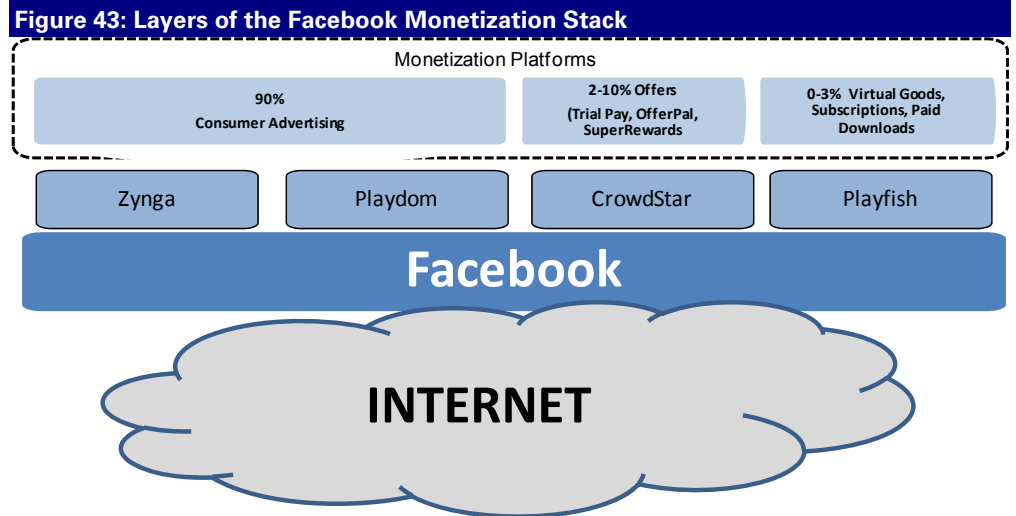
Figure 42: Social Games Users vs. Cable Show Viewership (in 000s)



Source: Nielsen, Demo Persons 2+, AppData DAU as of 10/14/10

We also compared media consumption between social games and television. Daily active users on Zynga’s Farmville actually exceeded all cable shows measured in August and Sept of 2010. Farmville’s 17m users beat out popular cable shows such as Monday Night Football with about 14-15m users. Other games such as FrontierVille also attracted over 7m daily active users, more than cable viewership of the Project Runway episode on 9/2/10, which attracted 5.3m viewers. Figure 42 clearly suggests that social games are becoming a larger part of media consumption on a daily basis, especially if usage is growing to levels compared to some of the most popular television shows today.

Monetization of Social Games



Source: Deutsche Bank Estimates

Social game publishers use varying business models to monetize games. While casual games are traditionally monetized using display advertising (CPM based) and paid downloads/subscriptions, social games are predominantly monetized using micro-transactions and offer based advertising (CPA based).

Figure 44: Social/Casual Games – Monetization Models

	% Users Monetized	Avg. Rates
Paid Access/Downloads	Less than 1%	\$5 - \$30 per game
Subscriptions	Very few	\$5 - \$10 per month
Virtual Goods	0.5% - 3%	Monthly ARPU \$3 - \$10
Offer based Ads	2% - 10%	\$1 - \$3 per lead
Advertisements	90% - 98%	CPM \$0.20 - \$0.30; CPC \$0.10 - \$0.25

Source: Deutsche Bank

- Virtual Goods/Micro-transactions:** Goods that enhance the player’s capabilities or improve game play are sold as virtual goods in casual games. Examples of such goods include high performance weapons in shooter games. These goods are purchased using virtual currency (which in turn is bought by paying real currency), offered either by game publishers or increasingly by social networking sites (such as Facebook Credits). Such micro-transactions are favored as consumers are often more likely to make a series of smaller purchases rather than a single large purchase. The percentage of users purchasing virtual goods (conversion rate) is very low. As per our conversations with industry participants, only 0.5-3% of active playing customers purchase virtual goods. Further monetization using virtual goods is heavily skewed towards IPs with large and heavily engaged user bases and as a result, social games enjoy the highest spend on virtual goods.
- Offer based Ads/Lead Generation:** Most casual games offer users the opportunity to earn virtual currency (or directly virtual goods) by signing up for offers from sponsors such as movie rental, insurance, and credit card companies. A typical offer would include the chance to earn virtual currency in exchange for signing-up for a free one-month subscription from NetFlix. In the recent past, there has been a lot of controversy involving gaming companies (including large ones such as Zynga) using unethical lead generation practices and as a result, many platforms (including social networking sites such as Facebook) have placed restrictions on the kind of offers distributed through their platforms. However, lead generation continues to remain a significant source of

revenues for casual gaming companies largely because it enables the monetization of users who are not willing to directly pay for the game or virtual good. Such offer-based ads have attractive economics, and a marketer would typically pay a game publisher \$1-3 per lead generation, with significantly higher rates in case of transaction-based offers (such as by mortgage/insurance companies). Our conversations with industry participants further suggest that ~2-10% of the active users are monetized using lead generation offers.

- **CPM- and CPC-based Advertisements:** A vast majority (~90% to 99%) of the casual gaming audience does not directly pay for gaming content (downloads, micro-transactions or offer-based ads) and hence advertisements remain the only way to monetize this large proportion of active users. Typical ad formats include display ads, in-game ads, and CPC-based ads. Ads rates are usually higher than other forms of online media (especially for ads placed before games or in between levels) as advertisers can reach a more targeted and attentive audience. CPMs generally vary between \$0.20 and \$0.30, while CPC rates trend at \$0.10-0.25. As in the case of the internet media domain, some of the larger publishers directly sell their ad inventory to marketers, while the smaller players rely on ad networks to sell their ad inventory.

Virtual Monetization Platforms

Facebook's 500m active users represent an attractive opportunity for companies to enable monetization of its large audience. With 50% of its active members logging in every day, the site has an audience that is very engaged with and captivated by the content on the social networking site. Social games, where users spend a majority of their time on the social networking site, can especially offer attractive monetization opportunities.

Simply put, in many social games there is an option to purchase virtual currency to upgrade characters or move onto new levels. Industry estimates demonstrate that on average, 20 of the top 25 social games have virtual currency, which can account for a majority of revenues. Most of the time, users will not pay for the virtual currency, but rather rewarded with virtual currency by filling out a survey, purchasing a special retail offer or watching a video. This is where these virtual monetization platforms help manage the virtual currency economy. Consumers are rewarded with virtual currency for their attention.

Offerpal Media (TapJoy)

Offerpal Media (TapJoy) is a provider of virtual currency monetization for online games, virtual worlds, and social networks. Its payment platform allows consumers the opportunity to earn or buy virtual currency by completing targeted advertising offers or by purchasing it through direct global payment options. Since its launch in 2007, Offerpal has issued more than 1 trillion virtual points to over 225 million consumers across 2,000 publishers and 190 countries.

TrialPay

TrialPay enables merchants to monetize their audience by presenting online consumers with relevant promotions before, during, and after transactions. TrialPay's transactional marketing platform uses the efficiencies of the internet to pair online shoppers with ideal offers at every stage of the purchase process. Over the past four years, TrialPay has provided 60 million registered users with compelling payment and promotions options at more than 10,000 sites, including Facebook, Gap, AVG, and Playfish. TrialPay holds key patents spanning alternative payment methods for products, services, and virtual goods sold online.

Super Rewards

Super Rewards is a virtual currency platform established in the summer of 2007 shortly after the Facebook platform launched. It was used primarily as an in-house tool and was officially launched to developers in December 2007. The Super Rewards platform can be deployed on any major social network, standalone website, mobile application, virtual world or MMO. Its average platform earnings rate is \$78 per 1,000 daily active unique users on your application. In July 2009, Super Rewards was acquired by Adknowledge.

Notable Social Games Industry Participants

Zynga (Privately Held)

Zynga is the largest publisher of social games, including top titles such as FarmVille and Mafia Wars. It distributes its games on a range of platforms including the iPhone and social networking sites such as Facebook, MySpace, and Friendster. It was founded in 2007 by Mark Pincus and is headquartered in California, USA. It is the largest third-party developer on Facebook with over 250m MAUs (per Appdata.com). The company's primary sources of revenue include the sale of virtual goods and offer-based ads. It has over 1,100 employees, and its investors include Kleiner Perkins Caufield & Beyers, Tiger Global Management, Union Square Ventures, and Digital Sky Technologies. Google recently invested over \$100m in Zynga. Key titles: FarmVille, Texas Hold'em Poker, Mafia Wars, Blackjack.

Playfish (Recently Acquired by Electronic Arts)

Founded in 2007, Playfish is one of the largest developers of social games that can be played on a range of platforms including Facebook, MySpace, the iPhone, and Android. The flagship titles of the company include *Who has the Biggest Brain?*, *Pet Society*, and *Restaurant City*. The initial investors in the company included Accel Partners and Index Ventures. Electronic Arts (EA) acquired the company in November 2009 for \$400m in cash and equity (including \$100m worth of performance-based payouts) and it now operates within EA Interactive (EA's division that focuses on web-based and wireless games). Key titles: *Pet Society*, *Restaurant City*, *Who Has the Biggest Brain?*, *Hotel City*, *Poker Rivals*.

Crowdstar (Privately Held)

Crowdstar develops social games primarily for the Facebook platform. Founded in 2008 and based in Burlingame, California, its flagship titles include *Happy Aquarium*, *Happy Island*, and *Quiz Planet*. It is ranked as the third-largest app developer by Appdata.com with ~52.2m MAU. Key titles: *Quiz Planet*, *Happy Aquarium*, *Happy Island*, *Happy Pets*, *Zoo Paradise*, *Hello City*.

Playdom (Acquired by Walt Disney)

Playdom was founded in 2008 and primarily develops games for the Facebook and MySpace platforms. It publishes the most popular game on MySpace, *Mobsters*, and its other key titles include *Market Street*, *Social City*, and *Sorority Life*. Playdom derives ~60% of its traffic from MySpace and the remaining 40% from Facebook. Over the past months, the company has increased localized content in its games (including launching a popular soccer game, *Bola*, for European audiences) and has announced plans to make its top titles in European languages such as French, German, Italian, and Spanish available. Playdom was recently acquired by Walt Disney for \$563m in cash and an additional \$200m of performance payouts. Prior to being acquired, Playdom was highly active on the M&A front with five acquisitions in 2010, including social game developer *Hive7* and MMORPG developer *Acclaim Games*. Key titles: *Market Street*, *Social City*, *Sorority Life*, *Bola*, *Wild Ones*.

RockYou (Privately Held)

Founded in 2006, RockYou (formerly NetPickle) started as a developer of application widgets (such as presentation slideshows) to customize and improve the aesthetics of web pages, personal websites, and profile pages on social networking websites and blogs. Since then it has evolved into a social advertising service, developing its own applications and games. The company primarily derives its revenues from ads served in/along its widgets and games. The company's most popular applications include *ZooWorld* (game), *Birthday Card* (social gifting), and *RockYou Live* (media sharing). RockYou's investors include Softbank, Lightspeed Venture Partners, and Sequoia Capital. Key titles: *Zoo World*, *Hero World*, *My Casino*, *RockYou Pets*.

Credits enable all users to buy credits from a single point of purchase and spend them on social games across the network

Will Facebook Credits Change the Social Gaming Economics?

Basically, Facebook Credits is a form of virtual currency that gamers can use to buy virtual goods in many games and applications on the Facebook platform. This program will enable all users to buy credits from a single point of purchase and spend them on social games across the network. Social users on the US platform have already shown a huge tendency to purchase virtual goods from games like Farmville and Mafia Wars, and even internationally, virtual goods are the primary source of monetization for other gaming platforms/communities

such as QQ in China (Tencent) and MapleStory in Korea (Nexon). A major difference is that now Facebook will take a 30% cut of revenues transacted through this platform, with the rest going to the publisher/developer, in line with the mobile apps world (i.e., iPhone, Android app marketplaces). Generally, industry experts have said that this will be much higher than the current rate developers pay, roughly 15% to the platform/distribution, while the developers keep the rest.

Despite lower economics for developers, Facebook Credits have already seen several publishers/developers use this system as its exclusive virtual currency platform on Facebook. Zynga, one of the largest developers, recently signed as the exclusive direct payment method for premium virtual currencies running on Facebook. Other companies such as Crowdstar, Playdom (Disney), and RockYou have similar arrangements. Developers have indicated that they believe in the long-term benefits of a streamlined virtual currency platform, but that this platform will likely experience some hardship in the short term, with lower economics and balancing the virtual currency worlds.

In summary, the benefits of the Facebook Credit platform include:

- **Familiar Payment Experience:** Users on Facebook typically play 2-4 games per month and a streamlined payment experience should improve user experience.
- **Unified Virtual Currency:** With a common platform, this currency can be used in more places, increasing long-term monetization.
- **Secure Place to Store Payment Information:** This provides more security for the user and can almost be comparable to the Amazon one-click platform in e-commerce.
- **New Ways to Pay and Earn:** Facebook is also testing out new ways for users to pay and earn credits on the system, including gift cards at retail outlets.

Thus, we believe this will be positive for the user experience at Facebook, where a user can spend credits on one platform for all games. The consolidation of different types of virtual currencies into one consistent platform will also enable more development time for the game rather than on several different types of virtual currency. We think the propensity for users to spend more on a common platform vs. the 30-plus various payment options currently should offer much better long-term benefits, offsetting near-term challenges.

Facebook Credits currently have over 200 games and applications enabled, 75-plus developers, and 22 of the 25 top social games. For developers, the benefits of Credits are clear: reduced payment friction for virtual goods, seamless integration with Facebook, users with stored payment methods, and most importantly, more payers.

Developer Adoption of Facebook Credits = Higher Monetization

Take the example of Arkadium, a casual game developer in NYC with 300-plus titles and five games on Facebook. The company has developed one game per month on Facebook since the beginning of the year and recently integrated with Facebook Credits API. Since integrating Credits in April for its Mahjong Dimension game, offering “game boosts” or an extra few seconds to finish a puzzle, the company has seen very impressive results with many user purchases. In addition, the company is implementing subscriptions on Credit for its Solitaire Heaven game, whereby subscribers could receive more than just the standard daily puzzle.

For Arkadium, the following lessons were learned while working with Credits:

- Important to price premium items in Credits only (conversion much higher)
- Set price anchors (understand what a good deal, bundle is)
- Keep content fresh (retire items, introduce new items)
- Make items valuable and consumable (address a pain point, advance game play)

Another example is with Digital Chocolate, a digital and social gaming company that works with 200 carriers worldwide with 1m SKUs per year. Digital Chocolate moved into social gaming about 1.5 years ago and has seen solid growth. The company also recently implemented Facebook Credits on its games and stated that key reasons for the move were: 1) the platform was through a trusted partner (Facebook); 2) Credits has a universal payment interface; 3) Credits provides a single point of contact; and 4) it allows the company to shift resources away from payments and towards core games. Upon implementation, Digital Chocolate saw superior revenue returns in the form of increased ARPPU (average revenue per paying user) and improved conversion.

Looking ahead for Facebook Credits, the strategy for growth and adoption should include growing the developer base, especially after Facebook spent the last six months building up the Facebook Credits infrastructure and reporting. Also, Facebook plans to add many more payment options and increase liquidity in the system. It plans to add more than 20 ways for users to pay for Facebook Credits in the next few months, with the recently announced partnership with PlaySpan, a provider of a global payments solution, enabling users to make in-app purchases using over 85 global payment methods in 180 countries.

Facebook Credits Could Extend and “Connect” Into E-commerce

Credits leveraged with Facebook Connect could offer a potential seamless one-click transaction that could mirror an Amazon experience

The credit platform could only be the beginning of one piece of the puzzle. We think this could also be leveraged with Facebook Connect, offering a potential seamless one-click transaction that could mirror an Amazon-like transaction and experience. By way of background, Facebook Connect is basically a set of code that extends the information on the social network beyond the Facebook website. Simply put, a user on Facebook will have their credentials stay with them when visiting sites that have the Connect API enabled. So, if Credits and Connect combine, this platform could become a strong payment platform, enabling seamless one-click transaction for e-commerce.

Figure 45: Illustration of E-Commerce Transaction Opportunity on Facebook

US Facebook Visitors (in millions, per comScore)	148				
% Members Purchase Gifts	5%				
No. of Gifts Per Year	2				
No. of Gifting Transactions Per Year (in millions)	14.8				
Cost Per Acquisition (CPA)	\$20	\$25	\$30	\$35	\$40
Net Revs to Facebook (in millions)	\$296	\$370	\$444	\$518	\$592

Source: Deutsche Bank Estimates, comScore

Thus, we think this platform could emerge into something more than just games. We think the Facebook Credits program could emerge into more of an e-commerce opportunity, especially given that only 3-5% of all social games are monetizable (per Zynga). To illustrate, for the 148m Facebook users in the US, the potential net revenue opportunity could be nearly \$600m per year in net revenues. Given that a lot of personal information, including birthdays, anniversaries, baby showers, bridal data, etc, are shared on the site among members, there is a viable gifting opportunity. In other words, this could be a solid e-commerce market opportunity for Facebook to monetize its large audience. Assuming that 5% of members purchase gifts twice a year, total transactions yielded to Facebook would be 14.8m.

For each of these transactions, if we assume a cost-per-acquisition bounty or commission for each to range from \$20 to \$40, this would yield Facebook net revenues of \$296-592m per year. These offers could range from purchasing flowers to online movie rental services, so the bounty could be highly variable. More importantly, Facebook Credits will have user and payment information already stored, offering the combination of Paypal's stored credit and Amazon's one-click experience. Credits will benefit like Paypal, enjoying the float of customer's cash in accounts, while its stored card experience will also offer a similar experience of Amazon's one-click e-commerce system.

Again, this only includes the opportunity within the US audience and does not include the other 350m worldwide users of Facebook. So, if Facebook leverages Credits as a potential payment platform for real goods, we think this could open up the opportunity to potentially monetize not only the US audience, but the global audience as well.

M&A Trends: Large Media/Internet Players Gobbling Up Social Gaming Companies

Given the increasing mix shift of media consumption towards social games and the strong growth potential of the social gaming segment, a number of large players ranging from traditional video game software publishers to media companies (both traditional and internet media) are increasingly adopting social gaming as a key part of their strategy. This is amply evident by large companies such as Facebook, Google, and Yahoo! announcing plans to increase focus on social gaming, the heightened pace of M&As in the space, and the rapidly increasing valuations. We would like to highlight the following as examples of the interest in this space.

Figure 46: Recent M&A Transactions in the Social Gaming Space (\$ in millions)

Acquirer	Target	Date	Purchase			Registered	Cost Per	Cost Per	
		Acquired	Price	Earn-out	All-In	MAU	Users	Active User	Reg. User
Electronic Arts	Playfish	11/9/09	\$308	\$100	\$408	60.0	150	\$6.80	\$2.72
Disney	Playdom	7/27/10	\$563	\$200	\$763	42.5	NA	\$17.96	NA
GameStop	Kongregate	7/27/10	\$50	\$0	\$50	10.0	NA	\$5.00	NA

Source: Deutsche Bank Estimates, Appdata for MAU (as of July 2010), Industry Reports

Google's aggressive plans in the social gaming space: In July 2010, Google invested in Zynga, the largest publisher of social games (with industry sources estimating the deal size to be between \$100m and \$200m). Leading industry participants indicate that this is a highly strategic deal and that Zynga would likely be a key participant of Google's new casual gaming platform, Google Games (which is likely to be launched by the end of the year). Further, an indication of Google's plans for a push in the social gaming space is its early August acquisition of Slide (a developer of social networking applications including games) and the mid-August acquisition of Jambool (which offers a platform to create virtual currencies, including in-application payments and virtual currency analytics). Clearly, for Google, the opportunity in social gaming lies not only in offering a platform for playing/distributing games but also in cross-selling other value-add services such as its Google Checkout payments service.

- **Disney's acquisition of Playdom:** In July 2010, Disney acquired Playdom for \$563m in cash and an additional \$200m in possible performance-based payouts.
- **GameStop's acquisition of Kongregate:** In July 2010, a brick and mortar video game retailer acquired Kongregate, a social gaming platform and community site for gamers.
- **Electronic Arts' acquisition of Playfish:** Electronic Arts acquired Playfish in November 2009 for \$300m in cash and equity, with additional performance-based payouts of up to \$100m. Further, EA has announced plans to launch social games based on some its key IPs.
- **DeNa's acquisition of Ngmoco:** In October 2010, Japan-based DeNa acquired Ngmoco for an estimated \$403m based on \$303m in stock and \$100m in earn-outs. Industry estimates put Ngmoco on an annual run rate of \$50m per year, implying an 8x multiple. Ngmoco develops smart phone games, producing titles such as We Rule and We Farm. The acquisition will enable DeNa to launch a western smart phone version of DeNa's social games network, Mobage, and create a unified open developer platform, allowing developers to use both Apple and Android devices.

As such, we are excited about the prospects for the social gaming space given these recent developments. We believe the entry of large players in this segment would lead to increased investments and should bode well for the sector in general. The possible launch of initiatives such as Google Games and the partnerships/deals such as those by Yahoo! and GameStop would help increase the reach of social games, making them easily accessible and more ubiquitous. The entry of large gaming and media companies should help create more and better content for social games, thereby increasing engagement levels and attracting new gamers. Lastly, initiatives such as Facebook Credits and Google's possible push in the virtual currency/in-application payments space might help resolve the key bottleneck of a lack of a reliable and widely accepted payment system for virtual currency and would likely help increase penetration levels for virtual currencies and increase conversion rates.

Casual gaming on the Internet

Casual Gaming 101: Targeting “Mom”

Targeted at mass audiences, casual games differ from traditional console-based games due to their easy game play and simple rules. They can be played in short bursts and require little time to learn or special skills to play and as a result, appeal to broader audiences, including women and the older demographic. According to the IGDA, 74% of all casual gamers are female players, generally the moms of the world, which is a great demographic for advertisers. Further broadening their appeal is that the games are usually free-to-play and require no upfront payments. The Casual Games Association estimates that worldwide, over 200m people play casual games. These games can be both single and multi-player and vary across genres with a skew towards non-violent arcade style games such as puzzles, card and board games, game shows, and trivia.

Unlike traditional hardcore games, casual games do not require sophisticated hardware to play and are distributed using ubiquitous direct-to-consumer publishing channels including websites, social networks, internet-connected consoles, and mobile phones. These low requirements to play have driven a strong base of users, which is great for advertisers, as mostly women with a higher income demographic play these games.

Figure 47: Game Characteristics – Casual vs. Hardcore Games

	Casual Games	Hard Core Games
Target Audience	Mostly women (Moms)	Largely younger males
Popular Genres	Non-violent, mostly arcade based	Shooter, Role playing, Simulation
Play time	Usually 5-20mins at a stretch	30min - 2 hrs at a stretch
Reason for playing	Fun and relaxation	Adrenaline rush
Game Play	Easy to learn, simple controls	Takes time to master
Distribution Channels	Websites, Social networks, consoles, mobile	Consoles, hi-spec PCs
Cost	Mostly free-to-play	\$30-\$60
Development Costs	~\$50K	Several million
Game Promotion	Viral	Large mktg campaigns

Source: Deutsche Bank, CGA Market report

74% of all casual gamers are female; generally these are the moms of the world

Comparing the casual gaming segment to hardcore games, the more popular games are mostly non-violent and arcade based, and play times are only about 5-20 minutes on average. This is not the hardcore gamer, who is generally a younger male playing Call of Duty on Xbox Live for two hours. Rather, the casual gamer generally plays to relax on gaming portals, social networks or mobile phones. The cost to develop casual games is also much lower, offering a fairly quick payback period for developers.

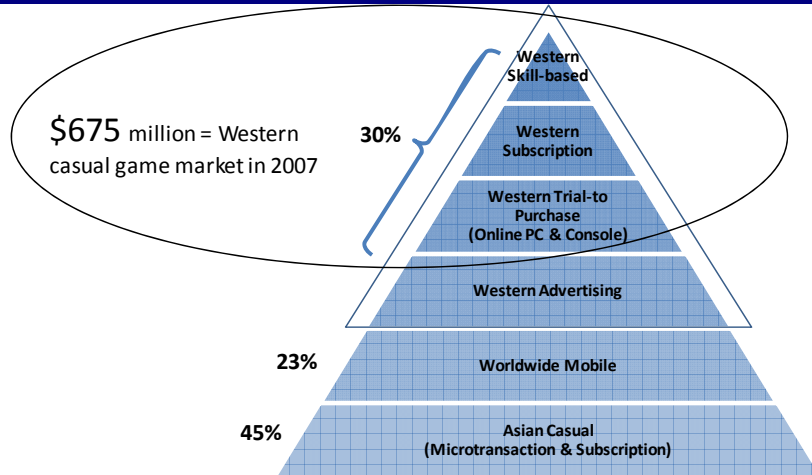
From a category standpoint, casual games are classified into seven genres of games, according to Big Fish Games and Gamezebo, and they include:

- **Puzzle Game:** Bejeweled, Collapse!, Luxor, Brain Teaser
- **Hidden Object Game:** Mystery Case Files, Mortimer Beckett, Hidden Expedition
- **Adventure Game:** Dream Chronicles, Aveyond, Nancy Drew
- **Strategy Game:** Diner Dash, Delicious, Cake Mania
- **Arcade & Action Game:** Plants vs. Zombies, Peggle, Feeding Frenzy
- **Word & Trivia Game:** Bookworm, Bookworm Adventures, Bonnie's Bookstore
- **Card, Board & Mahjong Game:** Slingo Quest, Lottso! Deluxe, Luxor Mahjong.

Market Opportunity for Casual is over \$2bn globally

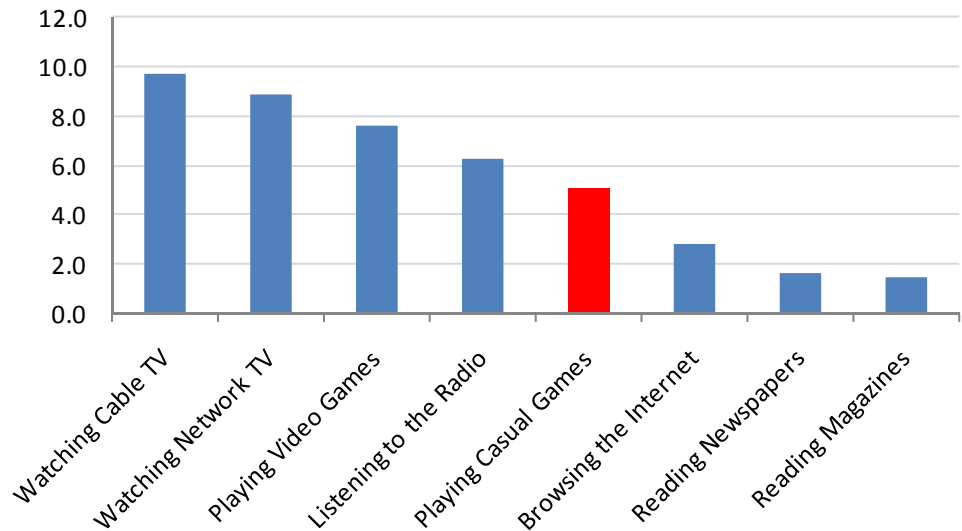
The casual gaming market opportunity shares some of the same market opportunity of social gaming and the casual subscription nature in the MMO arena. On a global basis, the market size was estimated to be \$2.25bn in 2007, according to the Casual Games Association (CGA). The US, or Western, market, which accounts for 30% of the total, is estimated to be a \$675m market, including Western skill-based, subscription, and trial-to-purchase games.

Figure 48: Casual Gaming Market Size – 2007



Source: CGA, Deutsche Bank Estimates

Figure 49: Preferred Casual Gamers Media Usage (in Hours per Week)



Source: Internet Gameasure 2007

For casual gamers, the media time spent from an hourly standpoint is about five hours per week. So how does this stack up to other categories? According to Interpret, casual gaming represents a more engaging activity than browsing the internet and reading newspapers and magazines. Again, this is a potential advertiser goldmine, as users are clearly engaged with the platform, as evident by the time spent on games. Furthermore, the casual gamer makes 2.7 online purchases weekly, more than the average gamer at 2.1, which offers a higher conversion for product-based ads in-game.

Monetization of Casual Games

Generally, casual games, especially those playable/downloadable from websites, and mobile games are monetized using paid accesses/downloads and subscriptions.

- **Paid Access/Downloads:** Many publishers offer trial versions of games with limited features and encourage users to purchase full versions, with price points typically varying between \$5 and \$30. Historically, this has been the primary monetization channel for PC, console downloadable, and mobile games and has the inherent advantage of offering users a chance to try the game before purchasing. However, conversion rates are very low with only about 1% of users trying free versions and paying for full versions. Conversion rates vary greatly across distribution platforms and are generally higher for online services offered by consoles (such as the Xbox Live Arcade and WiiWare) and mobile games.
- **Subscriptions:** Though subscriptions usually generate greater revenue per user, a very small proportion of casual games are monetized using subscriptions, given the low propensity of casual gamers to pay upfront for content. The most common variation for subscription plans includes a flat monthly fee to access all of the content of a website/game. An example of such a service is Pogo's ClubPogo subscription, which charges ~\$6 per month or \$40 per year for ad-free access to over 100 games. Another common variation includes receiving a free game every month and access to other incentives such as reduced pricing on other purchases for a monthly fee. Examples of such subscription plans include Big Fish Game's Game Club (~\$7 per month for one game) and Real Arcade's Game Pass (~\$7 per month for one game and ~\$20 per month for access to over 900 games).
- **Ad supported Games:** Given that the weekly time spent on games continues to grow but conversion rates remain at only 1% for paid downloads, 99% of the opportunity could be found in advertising. This generally comes in two forms: in-game advertising and around game. In-game advertising basically inserts advertising messages into games. In-game networks that provide this service include Double Fusion, IGN, and AdscapeMedia (Google). Around game ads refer to advertisements around the game windows, pre-rolls or post roll ads. Monetization of this could be on a display advertising on a CPM (cost per impression basis), which ranges from \$0.50 to \$15 (where ad networks keep 20-40%) or on a CPA (cost per action basis), which depends on an action a user needs to perform and payouts that vary based on the product.

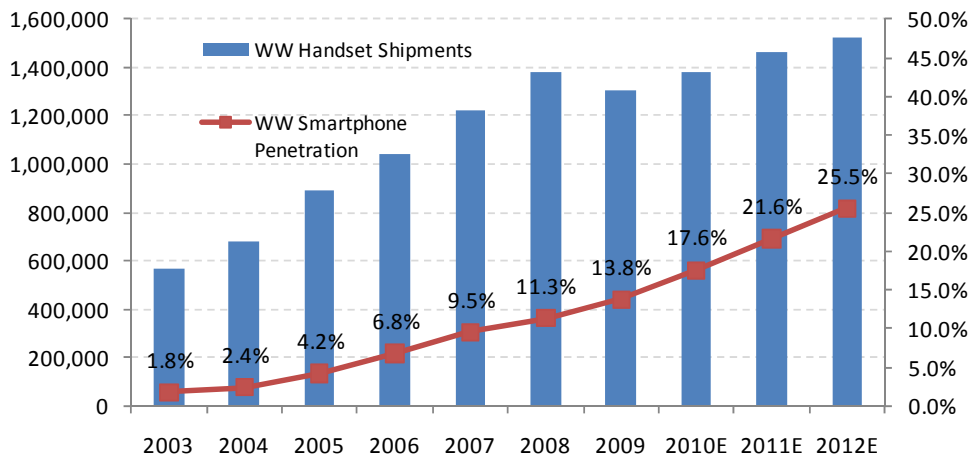
Mobile: Gaming Anywhere

Smart Phones are changing the Game

The cell phone has evolved massively over the past several years, especially in terms of access to online services. The functionality of the cell phone has significantly improved for downloading and browsing the internet, especially with the proliferation of smart phones. Advanced computing ability and connectivity are key variables of a smart phone compared to a basic mobile phone. These smart phones are basically handheld computers that allow users to install and run applications. In the early years of the smart phone (circa early 2000s), there were operating systems such as Symbian and Windows Mobile. In 2007, Apple launched its iPhone platform, which changed the game, enabling application downloads and superior user features. This was followed by Google’s open-source Android platform to help other handset manufacturers attain a viable cost-effective alternative to the iPhone, since Apple is a closed-end system.

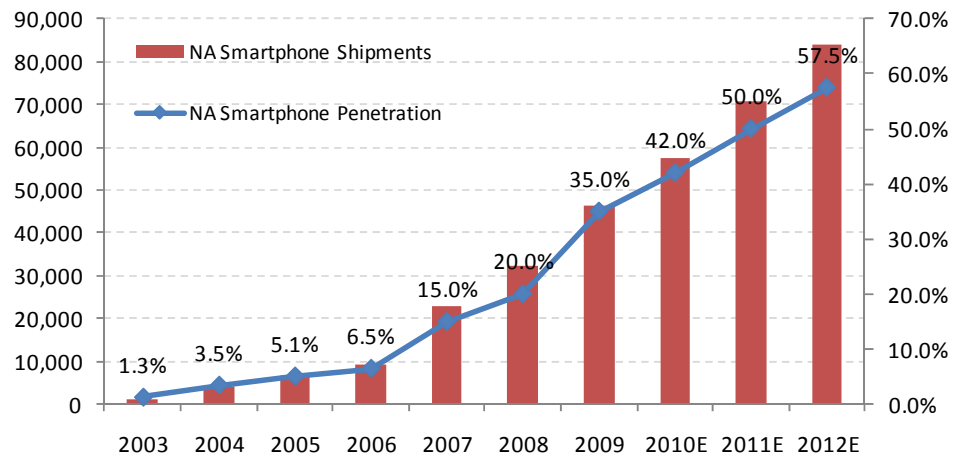
Smart phone penetration is on the rise globally, with penetration likely to grow from less than 2% in 2003 to over 25% by 2012. This year, of the 1.38bn phones that are likely to be shipped, smart phones represent only about 17.6% of the total, or 179m units (data from our Deutsche Bank smart phone model, per Deutsche Bank wireless analysts Brian Modoff and Jonathan Goldberg).

Figure 50: Worldwide Handset Shipments and Smart Phone Penetration (in 000s)



Source: Deutsche Bank Estimates

Figure 51: North American Handset Shipments and Smart Phone Penetration (in 000s)



Source: Deutsche Bank Estimates

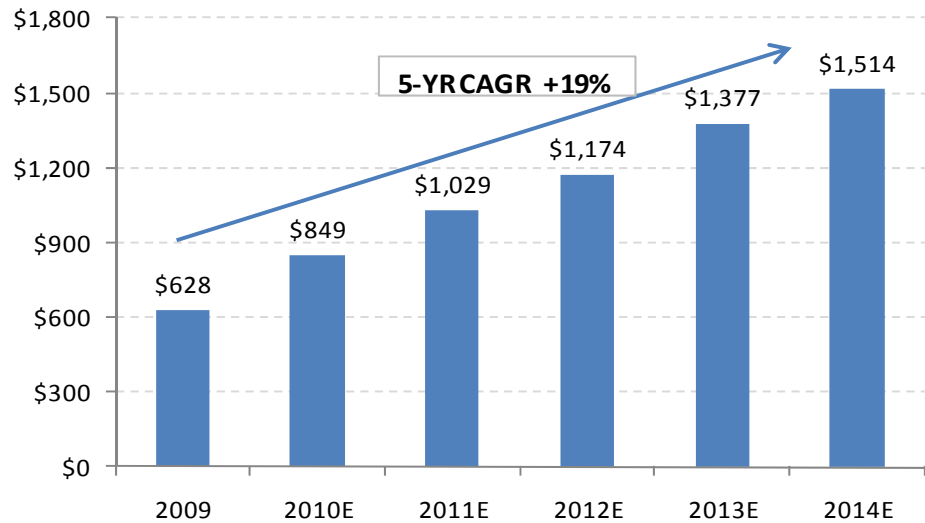
In North America, smart phone penetration is more than double the worldwide average in 2010. We expect smart phone penetration in North America to rise from 42% in 2010 to 57.5% by 2014. Clearly, the early adoption and availability of the iPhone in the US have driven much stronger penetration in North America.

Thus, with the rapid adoption of smart phones, casual gaming on the mobile platform is also gaining significant traction. It has driven adoption by more than a quarter of mobile subscribers and more than one in five members of the US population (eMarketer). The ease of game downloads on the iPhone underpins popularity of the Apple App store, and all the other players are now building an app store including Google, RIM, and even Amazon. We estimate that 70% of all application downloads are games on the phone. Most games are free today, but most have premium content to offer expanded features. With greater connectivity, these phones also provide easy access to the internet and help users socialize, a fast-growing feature on the phone as well. With proliferation of gaming on the iPhone, we think there are also several share losers in this process, and we think the handheld gaming segment is one that is at most risk.

Mobile Gaming Market Size: Nearly 95mn Gamers By 2014

eMarketer valued the mobile gaming market in the US in 2009 at \$628m. This market is likely to post a healthy CAGR of 19% to reach over \$1.5bn by 2014.

Figure 52: US Mobile Gaming Market Opportunity (\$ in millions)

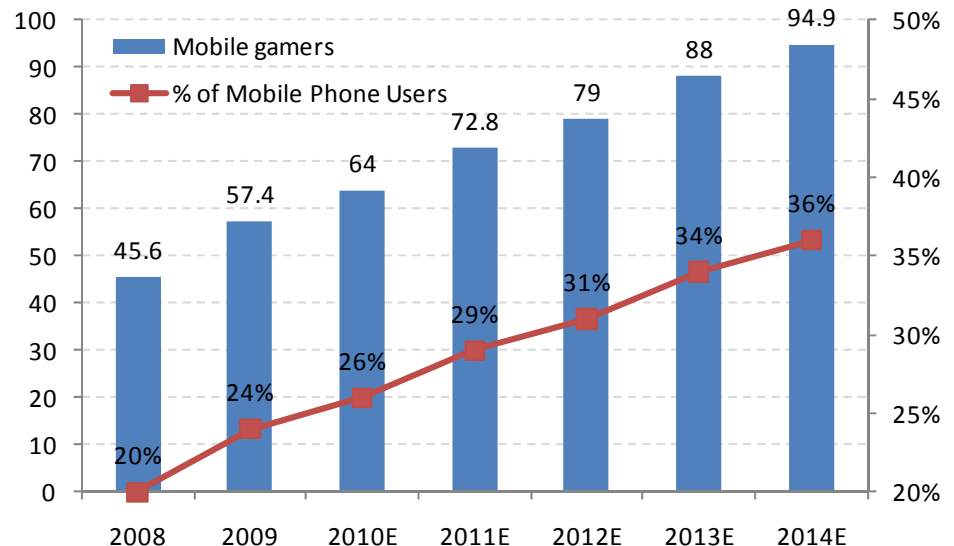


Source: eMarketer

There are multiple factors that collectively drive the high growth in the mobile gaming market, including:

- Increasing Number of Mobile Gamers:** Historically, mobile gaming has been limited to handheld consoles such as the Nintendo DS and Sony PSP. However, with the emergence of smart phones and tablets, the number of devices capable of supporting gaming has increased exponentially. Devices such as the iPhone, iPod Touch, and iPad have expanded the mobile gamer demographic into the long tail, beyond core-gamers. Clearly, the solid increase in mobile gamers is likely to power growth of the mobile gaming market.

Figure 53: US Mobile Gamers and Phone Penetration, 2008-2014E (in millions)



Source: eMarketer

- **Easier Distribution Enabled by App Stores:** While games on traditional handheld consoles had to be purchased in the physical form, games for smart phones and tablets can directly be downloaded from the internet. App stores (such as those run by Apple and Google) allow for easier downloads, thereby allowing seamless distribution. With new app stores from a number of leading companies likely to emerge in the next few years, the easier distribution of mobile games would help drive growth. Further, with improvements in payment mechanisms over the internet, we believe that popularity and purchase frequency of app stores would further increase.
- **Higher Monetization:** Contrary to desktops, mobile phones can be taken anywhere, representing a very attractive opportunity to advertisers. Further, the connected nature of smart phones enables micro-transactions to be conducted over a mobile device. Hence, the market opportunity for mobile games extends beyond paid downloads into hybrid business models based on advertising and virtual goods. A ramp-up in these monetization models would bode well for the mobile gaming market either in terms of higher monetization per game or in terms of driving lower upfront costs for games (and thereby driving usage).
- **Improved Content:** Given the increasing attractiveness of the mobile gaming space and the weakness in the traditional packaged goods segment, a number of large companies are launching games in the mobile space. Leading companies such as Electronic Arts have introduced their most popular IPs (Need for Speed and Madden) on smart phones. We believe the overall improvement in quality of content on mobile platforms should in turn power the flywheel of increased adoption of mobile gaming.

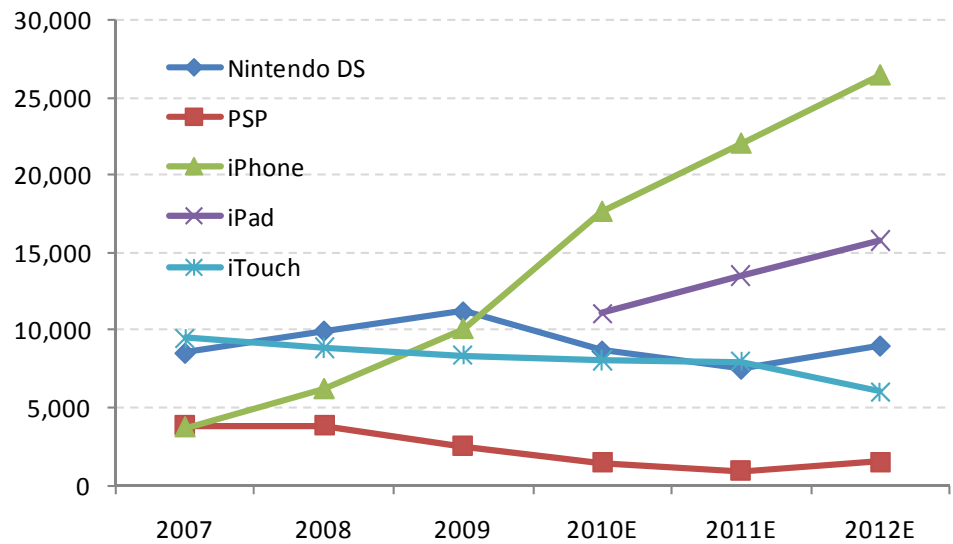
There is no question that we are migrating to a much more capable wireless world in which speeds will be faster and these smart phones will become even smarter. Contrary to the desktop, the mobile phone can be taken anywhere, which is a very attractive opportunity for advertisers, application developers, and game publishers.

Apple Devices Eating into share of Nintendo DS and Sony PSP

The introduction of mobile devices including the iPhone and related devices that have significant computing power and can hence support games, has greatly expanded the installed base for portable gaming devices. Such is their popularity that in 2010, unit shipments of the iPhone are likely to surpass those of the Nintendo DS and Sony PSP combined. Owing to the utility of devices such as the iPhone and iPad beyond gaming (Apple covered by Deutsche Bank hardware analyst Chris Whitmore), Apple devices are cannibalizing the sales of traditional portable gaming platforms. While unit shipment of devices from Apple has increased significantly since 2007, shipments of handheld gaming consoles have since been on a negative trajectory.

Ever since the introduction of the iPhone in 2007, this has been eating up the share of the traditional handheld devices like the Nintendo DS and the Sony PSP. While the iPod has been shipping out 8-10m units in the US consistently, the iPhone launch is what started to considerably eat up the traditional handheld share, indicated Figure 54. This year, Apple iPhone shipments in the US will surpass both the DS and PSP shipments combined, after only launching in 2007. Furthermore, the recent launch of the iPad should enable an even more enhanced experience with larger display and performance. As such, we expect continued declines on this front but think Nintendo's 3DS could stand a chance to lose a smaller share, assuming its 3D features offer differentiated game play and functionality.

Figure 54: US Portable Gaming Device Shipments, 2007A-2012E (in 000s)



Source: Deutsche Bank Estimates, NPD and Company Data

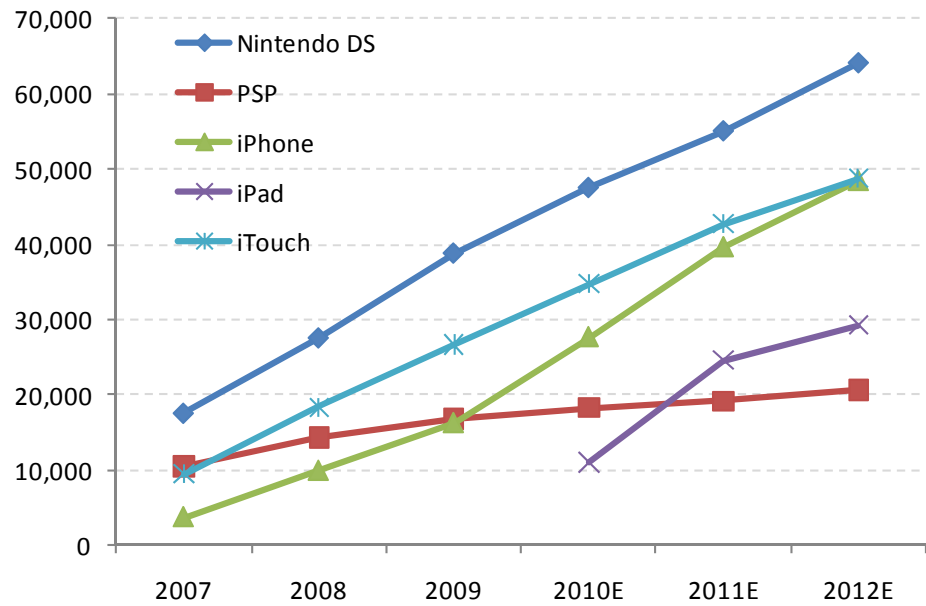
Figure 55: Global Apple iTouch, iPod, and iPhone Shipments, 2007A-2012E (in 000s)

	2007	2008	2009	2010E	2011E	2012E
US iTouch Shipments	9,486	8,864	8,384	8,048	7,952	6,032
% US	45%	40%	40%	40%	40%	40%
iTouch Shipments	21,080	22,160	20,960	20,120	19,880	15,080
% of iPod	40%	40%	40%	40%	40%	40%
Global iPod Shipments	52,700	55,400	52,400	50,300	49,700	37,700
US iPhone Shipments	3,700	6,165	10,040	17,600	22,000	26,400
% US	100%	45%	40%	40%	40%	40%
Global iPhone Shipments	3,700	13,700	25,100	44,000	55,000	66,000
US iPad Shipments				11,070	13,500	15,750
% US				90%	75%	75%
Global iPad Shipments				12,300	18,000	21,000

Source: Deutsche Bank Estimates, Company Data

From an installed-base front, devices from Apple (iPhone, iPod Touch, and iPad) are likely to surpass the installed base of traditional handheld consoles (NDS and PSP) in 2010. Even with a three-year head start, the DS still lags the collective Apple products that have grown so popular in just the past three years. This has enabled gaming to be much broader based, as devices are converging and there is no need for a separate handheld device the sole purpose of which is for gaming. The iTouch differs because users have the ability to download applications to not only play games, but also to apply them to other things such as hobbies or sports. In sum, the mobile gaming demographic is migrating to a converged world, and it appears that Apple is commanding a large lead.

Figure 56: US Portable Gaming Device Installed Base, 2007A-2012E (in 000s)

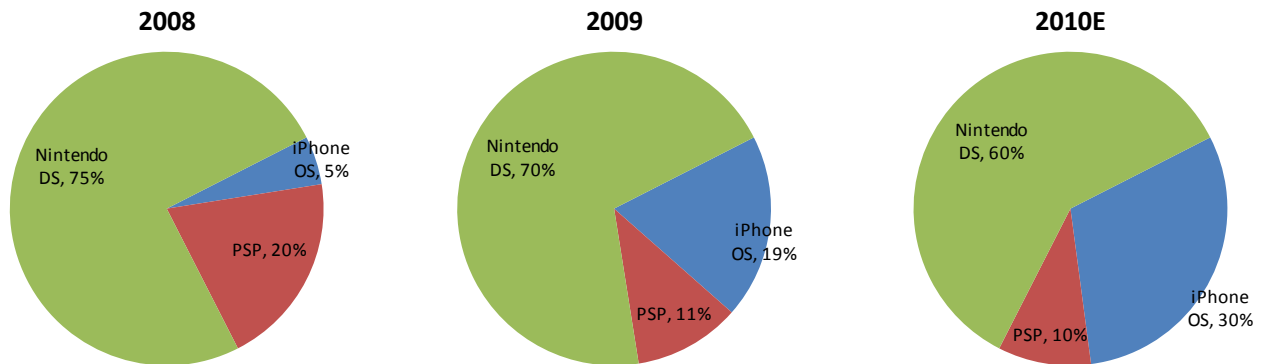


Source: Deutsche Bank Estimates, NPD

Installed Base Today, Monetization Tomorrow

As the installed based on portable devices shifts away from handheld consoles to smart phones, the dollar market share seems to follow a similar path. Among the three most popular mobile gaming devices, ~95% of the dollar market share was shared between the Nintendo DS and Sony PSP in 2008 (Flurry). However, this is fast changing and by 2010, their combined share is likely to decline to ~70% on our estimates. Meanwhile, the iPhone’s share should rise from a mere 5% in 2008 to 30% share by 2010.

Figure 57: US Portable Game by Revenue, 2008-2010E



Source: Flurry Analytics, Deutsche Bank Estimates

A major reason for this revenue shift comes down to pricing. Generally, the unit price of a game on handheld consoles are much higher than that of the iPhone (\$30-40 on NDS and PSP vs. ~\$0.99 on the iPhone), yet the iPhone is increasingly accounting for a greater share of the market, owing to the large number of users and the higher number of game players as a result of its appeal to larger and wider audiences. Given the surge in the number of iPhone

users, developers are crowding to release games on this important platform. Further, with substantially lower development costs for publishing games on the iPhone, developers are introducing a large number of games on this platform, thereby targeting the long tail of users. Thus, despite lower unit prices, the higher number of games sold is translating into a higher market share for the iPhone.

In addition, a recent developer survey indicated that the iPhone platform is gaining impressive mindshare. According to Game Developer Research, the number of developers working on mobile games increased to 25%, compared to 12% one year ago, and there are actually twice as many developers working on iPhone games compared to the traditional handheld consoles (Nintendo DS and Sony's PSP). This should come as a surprise considering Apple's low \$100 developer fee and SDK download that is much easier than publishing for the DS or the PSP. Also, traditional handheld devices are not releasing the same number of games/applications that the Apple app store has.

In sum, we think all this could represent continued share losses by traditional handheld games in the future, especially as few titles will be launched. Developers will gravitate towards platform for better market penetration, and once developers start leaving the traditional handheld console platform, games will become scarce and users generally follow.

Poker Drives Highest Engagement for Mobile Gaming

Given the large fragmentation in games, we compare four of the more popular segments in gaming: hardcore role-playing game (RPG), casual RPG, poker, and simulation games. On the comparison, poker dominates the session length with 5.3 minutes per session, while on average the other categories are in the two to three minute range per session.

Figure 58: Mobile Gaming Metrics by Genre

	Hardcore RPG	Casual RPG	Poker	Simulation
Session Length (in minutes)	2.3	2.1	5.3	2.6
Sessions Per Day	2.7	3.5	2.2	3
Engagement (Length x Sessions)	6.21	7.35	11.66	7.8
Daily Active Users (DAU)	45k	30k	150k	325k
Retention	14%	12%	7%	13%
% Active Users Purchasing	Limited	Limited	5.4%	1.5%

Source: Flurry Metrics Presentation

While poker commands a longer session length, the sessions per day for casual RPG and simulation games exceed three times per day. The poker and simulation categories share the highest number of daily active users (DAUs), along with a higher propensity to buy, despite lower retention rates (7% for poker).

Android Platform: A Mobile Alternative

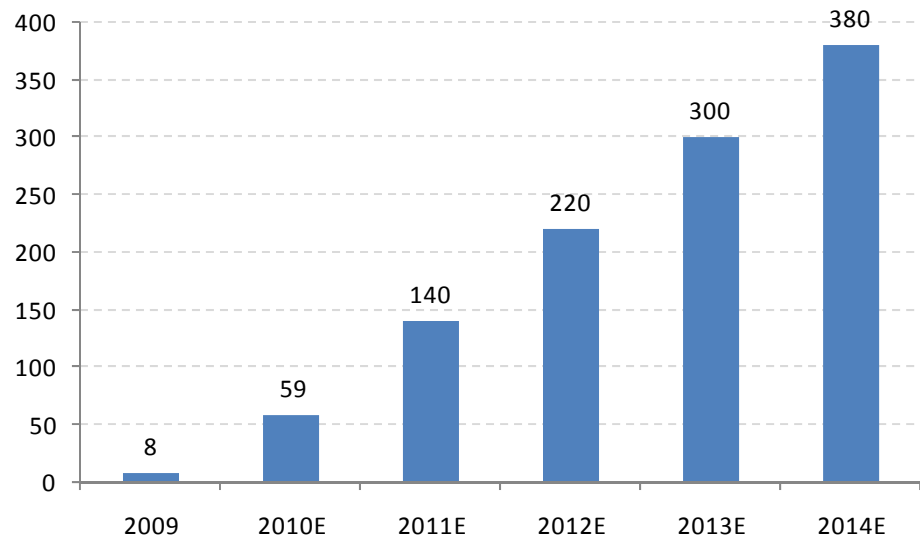
Since Apple is a closed-end platform, handset manufacturers are leveraging Google's open-source platform—Android mobile operating system. Android is basically Google's operating system for handsets that uses a modified version of the Linux kernel and first started licensing the platform in October 2008. Since then, there are now 34 Android devices from 12 handset manufacturers, leveraging the Google mobile operating system. Part of this success is due to the continuous software updates to fix bugs and improve performance. There have been five updates to the software, with the most recent software dubbed Android 2.2 "Froyo" in May 2010, with Android 3.0 "Gingerbread" set for a tentative 4Q launch.

Given the popularity of the Apple iPhone, the obvious alternative for other handset manufacturers is the Google Android, because of the economics of an open-source platform and a growing developer community. Market penetration is one of the most important reasons for selecting a platform, and Android leads with nearly 60% of developers having recently developed on the Android platform, according to a survey of over 400-plus mobile developers.

Google is now activating 200,000 Android phones per day, or 6m phones monthly

Since its introduction in late 2009, shipments on devices enabled by Android have seen tremendous growth driven by adoption of handset manufacturers, carriers, and consumers. In January 2010, Google was activating 55,000 phones per day, equivalent to 1.7m in the month of January (Deutsche Bank estimates). By May 2010, Google said it was activating 65,000 Android phones per day, or a monthly run-rate of 2m phones. More recently, with more devices launching through more handset manufacturers, Google is now activating 200,000 Android phones per day, or 6m phones monthly. As such, our Android-installed base estimates go from 59m in 2010 to 380m by 2014 on a global basis, representing a global smart phone penetration percentage of 24% in 2010 to 72% by 2014.

Figure 59: Android-Enabled Phones' Global Installed Base, 2009-2014E (in millions)



Source: Deutsche Bank

It is no secret that Google has huge aspirations in the mobile space. With teams working on the Android along with the recent acquisition of AdMob, investors often wonder about the real potential of the mobile opportunity. For the first time this past quarter, Google broke out more financial information on its mobile business: an annual mobile revenue run rate of \$1bn and Android is profitable even without app revenues. Clearly, mobile has been a growing focus area for Google, and the numbers shared provide a perspective on the earnings potential of this segment. While still less than 5% of total gross revenues today, the fact that usage on smart phones is growing and mobile queries have grown 5x over the past few years shows that mobile is here to stay and to contribute to the long-term growth of its business model.

So why is This Important to Gaming? With the strong adoption of the Android platform by handset manufacturers, this is certainly an important gaming platform for game/app developers. This is a platform that cannot be ignored given its sheer growth in installed base globally. As developers start to diversify their distribution channels for their gaming platforms outside of Facebook and Apple, Android remains one of the more attractive opportunities over the next few years. While monetization still lags the iPhone, Android continues to

improve with more frequent updates to its software. Developers are also hiring a lot more engineers to focus on building and enabling apps on Android. For example, Zynga recently announced that it is introducing its Farmville game to the Android platform and plans to invest around it, evident by its job postings for Android engineers.

Net/Net, the outlook for this platform is very attractive, despite its early stages of monetization. We think Android will become more relevant in gaming as adoption continues to grow and developers/carriers/handset vendors seek to diversify its distribution channel and maximize economics.

Net Takeaways

Bottom Line

The challenges in the traditional gaming industry might be projecting a lot of fear in the marketplace, but emerging themes in gaming offer newfound excitement in the industry. The gaming market is clearly bigger than our original expectations, as our estimate for the US market alone is expected to reach nearly \$30bn by 2014, up almost \$10bn from our estimates for 2010. The international market could easily be more than the size of the US as well, representing more than a \$60bn market globally. To be clear, growth in the US market is will not be driven by traditional packaged goods software, but rather growth by the billions of hours spent in online gaming (Xbox Live), the need for subscribers to keep up with its evolving virtual world of MMOs (World of WarCraft), the iPhone's rapidly rising adoption rate allowing users to game anywhere, and most importantly the growth of gaming on social networks such as Facebook. With all these drivers, our projections for the gaming industry could prove conservative.

The opportunity to penetrate a wider demographic is opening up the entire industry to more gamers. In fact, the industry is no longer just shaped for young, male hardcore gamers anymore, but more female oriented demographic playing casual and social games. The Nintendo Wii revolutionized general console gaming to bring in the entire family for a broad casual experience. We think the same is happening on the PC side with the emergence of social and casual games. For social games, the growth of Facebook and the opportunity to interact with friends through games such as Zynga's Farmville, is driving more daily players than viewers of Monday Night Football. For casual games, this is basically board games digitized, with a massively open opportunity for advertisers to target "Mom" as the average casual gamer are female oriented (74% casual gamers are female per CGA).

The industry is also evolving from a product-oriented model to a services model. Rather than buying packaged software goods that require tens of millions of dollars of development and complex supply chain planning, the market is evolving to a world of virtual goods. Massively popular in Asia, where an average of 20% of users buy virtual items, its still very early in the US market where we estimate 3% of users purchase virtual items. These virtual items are not that virtual to these highly engaged users to the game anymore and it provides higher game play, enhanced status and provides a unique game play experience.

With all this growth, this is not without cannibalization. Packaged goods software should decline as the connected console and MMO game play continue to gain mindshare and time spent. Traditional handheld software share are declining as Apple devices have enabled/created a strong developer ecosystem around its lower-cost gaming applications.

Longer term, we think the winners will be the platform enablers in this industry. For Google, its Android open source platform provides handset manufacturers with a mobile infrastructure for gaming. Its reaching massive scale and adoption, offering a monetization opportunity for game developers on the platform. The same goes for Facebook, operating its social networking site of 500mn users, an attractive monetization opportunity for gaming and advertising. Its virtual currency platform, Facebook Credits should open up a meaningful monetization channel and we expect it to change the virtual economy in a positive fashion longer term. For Apple, its game-changing devices will continue to take share from traditional handheld gaming and we expect this to only further penetrate the masses as the iPad penetration grows over time.

Appendix A – Company Profiles: Social/Casual Gaming

Figure 60: Company Profile – Arkadium

Arkadium	
COMPANY DESCRIPTION	
<p>Designs and develops social, casual and advergames. It also provides hosting services for games. Apart from creating custom games for clients, Arkadium also offers the choice of licensing games from its game library of over 300 titles and re-branding/customizing games. Its list of clients include ESPN, Discovery Channel, Hearst Magazine and National Geographic Channel. With the aim of generating more traffic to its properties, the company acquired Advergame.com and Gamelab.com in 2009. It has offices in the US and Ukraine.</p>	
GENERAL INFORMATION	
Category:	Social, Casual
Headquarters:	New York City
Employees:	90
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$9mn (2010 - estimate)
Recent Round/Date:	-
Investors:	ZelnickMedia
PRODUCT/NEWS	
Popular Games/Product:	Arkadium Arena (game library), Mahjongg Dimensions Solitaire Heaven
Recent News:	<p>9/22/10: Arkadium and Merriam-Webster Launch Writer's Blox on Facebook</p> <p>8/17/10: Arkadium Expands Staff to Work on Social Games</p> <p>7/20/10: GSN and Arkadium Partner to Monetize Popular Facebook Application</p>

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 61: Company Profile – Crowdstar

Crowdstar

COMPANY DESCRIPTION

Developer and marketer of Web based games and applications primarily for Facebook and Tagged. The company is ranked as the second largest app developer by AppData.com. Key titles in Crowdstar's game portfolio include Quiz Planet, Happy Aquarium, Happy Pets, Happy Island, Zoo Paradise, It Girl and Pop Boom. Crowdstar is headquartered in Burlingame.

GENERAL INFORMATION

Category:	Social
Headquarters:	Burlingame, CA
Employees:	20

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	N/A
Recent Round/Date:	\$100K (seed funding)
Investors:	Peter Relan (CEO)

PRODUCT/NEWS

Popular Games/Product: Quiz Planet, Happy Aquarium, Happy Island, Happy Pets

Recent News:

10/7/10: Launches Happy Island/Happy Aquarium on Japanese social gaming network Mobage
 7/7/10: Appoints EA and Playdom veterans to Executive Team
 6/29/10: Plans to use Facebook Credits as its exclusive in-game currency for the next five years

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 62: Company Profile – Cyberagent

Cyberagent	
COMPANY DESCRIPTION	
Japan-based information technology company that operates in five segments: 1) Ameba business, 2) Advertising, Billing and Content segment, 3) Commerce, 4) Internet Advertising Agency and 5) Investment Development segment. Through the Ameba business, the company operates the virtual world "Ameba Pigg" which generates revenue through advertising placements and fees of virtual currency "Ame Gold". Headquartered in Tokyo, Cyberagent is listed in the Tokyo Stock Exchange with the symbol 4751.	
GENERAL INFORMATION	
Category:	Social
Headquarters:	Tokyo, Japan
Employees:	1,189
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$1.1bn (2010 - estimate)
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Ameba Pigg, Ameba Pico
Recent News:	
7/29/10: CyberAgent reports 3Q results	
3/10/10: Ameba Pigg virtual world comes to Facebook as Ameba Pico	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 63: Company Profile – DeNA

DeNA	
COMPANY DESCRIPTION	
DeNA operates in multiple segments of the Internet market including e-commerce, mobile, games and advertising. It started as an e-commerce company and has since expanded into multiple segments. It participates in the gaming market through its Mobage-town portal which features free online games. The portal has a variety of free community features similar to social networking sites. To expand in the western markets and in the mobile gaming domain, it acquired US-based iPhone game developer Ngmoco for \$403mn in October 2010.	
GENERAL INFORMATION	
Category:	Social, Casual, Mobile
Headquarters:	Tokyo, Japan
Employees:	861
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$593mn (Year ending March 2010)
Recent Round/Date:	-
Investors:	Kleiner Perkins Caufield & Byers
PRODUCT/NEWS	
Popular Games/Product:	Mobage Town, Rolando,
Recent News:	
10/12/10: Japan's DeNA buys iPhone game company Ngmoco	
4/27/10: DeNA announces social gaming partnership with Yahoo! Japan	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 64: Company Profile – Digital Chocolate

<h1>Digital Chocolate</h1>	
COMPANY DESCRIPTION	
<p>Leading publisher of mobile, social and casual games. It started in 2003 as a developer for mobile games and was the top iPhone app in 2009. It entered the social game space in 2010, and has since been one of the fastest growing publisher of Facebook games. Key titles in its portfolio include Millionaire City, MMA Pro Fighter and Rollercoaster Rush. It is located in San Mateo and has offices in Helsinki, Barcelona, Bangalore and Mexicali. The company was started by the founder of EA - Trip Hawkins.</p>	
GENERAL INFORMATION	
Category:	Social, Casual, Mobile
Headquarters:	San Mateo, CA
Employees:	65
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$50mn (2010 - estimate)
Recent Round/Date:	\$22.5mn 7/26/2006
Investors:	Bridgescale Partners, Outlook Ventures, Montagu Newhall DN Capital, Glynn Capital Management, WHI Capital
PRODUCT/NEWS	
Popular Games/Product:	Millionaire City, MMA Pro Fighter, Rollercoaster Rush Tower Bloxx
Recent News:	<p>9/29/10: Digital Chocolate Passes 12mn MAUs on Facebook</p> <p>6/10/10: Bridge Bank Provides Financing to Digital Chocolate</p> <p>3/30/10: Digital Chocolate releases first Freemium game with Fantasy Warrior Legends</p>

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 65: Company Profile – GREE

GREE	
COMPANY DESCRIPTION	
<p>GREE is Japan's largest social networking service with over 21mn users. Besides basic social networking services such as blogs and profiles it also offers a range of social games which can be played on both the internet and mobile devices. The key games offered by the company include Odoriko Kurinoppe, Tsuru Sutra, Tanken Doriarando, and Gurige. GREE derives over 4/5th of its revenues from the sale of virtual goods. It is based out of Japan and plans to expand into China and the US.</p>	
GENERAL INFORMATION	
Category:	Social, Mobile
Headquarters:	Tokyo, Japan
Employees:	100
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$435mn (Year ending June 2010)
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Odoriko Kurinoppe, Tsuru Suta, Tanken Doriarando, Hakoniwa Gurige, Gurikyu
Recent News:	<p>08/16/10: Social networking site GREE becomes Japan's No. 1</p> <p>06/08/10: GREE to open US and China offices within a year</p>

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 66: Company Profile – Mixi

Mixi Inc	
COMPANY DESCRIPTION	
Operator of a Japanese social network focused on community entertainment. The company's site enables users to send and receive messages, write in a diary, organize and join communities and play games. Mixi's social network is the biggest in Japan with over 20mn members and 14bn page views monthly. Headquartered in Tokyo, Mixi is listed in the Tokyo Stock Exchange with the symbol 2121.	
GENERAL INFORMATION	
Category:	Social
Headquarters:	Tokyo, Japan
Employees:	313
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$145mn (FY 2010 - actual)
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Machitsuku
Recent News:	4/14/10: Just announced member base has surged to 20mn

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 67: Company Profile – Playfish

Playfish (EA)	
COMPANY DESCRIPTION	
Social games developer for various platforms including Facebook, MySpace, iPhone and Android. The company has been the recipient of numerous industry accolades such as Technology Pioneer by the World Economic Forum (2010) and Online Games Winner by Mashable (2009). Key titles in Playfish's gaming portfolio include: Who has the Biggest Brain?, Pet Society, Restaurant City, Hotel City and Poker Rivals. The company was acquired in 2009 by Electronic Arts (ERTS).	
GENERAL INFORMATION	
Category:	Social
Headquarters:	London, U.K.
Employees:	200
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$100mn (FY2011 - estimate)
Recent Round/Date:	\$17mn 10/28/2008
Investors:	Accel Partners and Index Ventures
PRODUCT/NEWS	
Popular Games/Product:	Who has the Biggest Brain?, Pet Society, Restaurant City
Recent News:	
8/31/10: Launches Madden NFL Superstar on Facebook	
11/9/09: Acquired by Electronic Arts for \$400mn	
10/28/08: Receives \$17mn in Series B funding	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 68: Company Profile – Playdom

Playdom (Disney)

COMPANY DESCRIPTION

Developer of social games with an estimated 42 million active players each month. The company is the largest social game developer on Myspace and the third largest on Facebook (per Appdata). Key titles in Playdom's game portfolio include: the Mobsters saga, Social City, Sorority Life, Market Street, Bola, Tiki Resort, Wild Ones, City of Wonder and Fanglies. Playdom was recently acquired by Disney in July 2010.

GENERAL INFORMATION

Category:	Social
Headquarters:	Mountain View, CA
Employees:	500

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	\$125mn (2010 - estimate)	
Recent Round/Date:	\$33mn	6/21/2010
Investors:	Steamboat Ventures (Disney's venture arm), Bessemer Venture Partners and New World Ventures	

PRODUCT/NEWS

Popular Games/Product: Mobsters, Social City, Sorority Life, Market Street, Bola

Recent News:

7/27/10: Acquired by Disney for \$563mn plus earnouts (up to \$200mn)
 7/12/10: Acquires Hive7, best known for Knighthood game
 7/8/10: Acquires Metaplace, builder of virtual worlds based in San Diego

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 69: Company Profile – Pogo

Pogo (EA)	
COMPANY DESCRIPTION	
<p>Leading developer of casual games for the web and mobile devices with 10 million unique visitors each month. The company's innovations in the casual gaming space include the introduction of chat during gaming sessions (2000), paid subscription with Club Pogo (2003) and Pogo Micro-transactions (2006). Pogo's gaming portfolio includes Poppit, Tri-Peaks Solitaire, Turbo 21, Word Whomp, Harvest Mania and EA Games. Headquartered in San Francisco, the company was acquired by Electronic Arts in 2001.</p>	
GENERAL INFORMATION	
Category:	Casual
Headquarters:	San Francisco, CA
Employees:	2,500
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	-
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Poppit, Tri-Peaks Solitaire, Turbo 21
Recent News:	
4/2/10: Pogo is launched on Facebook	
4/3/09: Introduces Pogo Minis	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 70: Company Profile – PopCap

PopCap	
COMPANY DESCRIPTION	
Casual games developer for diverse platforms including web sites (Popcap.com, Yahoo.com), mobile devices (iPod, Blackberry) and video game consoles (Xbox, DS). PopCap games have been downloaded over 1.5 billion times and its key title, Bejeweled has sold more than 50 million units. The company's gaming portfolio includes Chuzzle, Zuma, Feeding Frenzy, Heavy Weapon and Plants vs. Zombies. PopCap is headquartered in Seattle and has offices in Dublin and Shanghai.	
GENERAL INFORMATION	
Category:	Casual
Headquarters:	Seattle, WA
Employees:	300
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	-
Recent Round/Date:	\$22.5mn 10/6/2009
Investors:	Meritech Capital Partners, private investors Larry Bowman and John McCaw
PRODUCT/NEWS	
Popular Games/Product:	Bejeweled, Zuma, Pegged, Plants vs. Zombies
Recent News:	
10/4/10: Launches Peggle iPhone update	
9/14/10: Partners with NC Soft to offer PopCap World	
10/6/09: Receives \$22mn in Series A funding	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 71: Company Profile – RenRen

RenRen Network	
COMPANY DESCRIPTION	
Formerly known as Xiaonei Network, RenRen is a Chinese social network with an interface similar to Facebook. RenRen's most popular games are Happy Farm and Restaurant Games. The site started as a network for elite university students but is now open to all users. It currently has 120mn users (self reported) and it ranks among the top 20 sites in China by traffic volume. Headquartered in Beijing, RenRen is owned by Oak Pacific.	
GENERAL INFORMATION	
Category:	Social
Headquarters:	Beijing, China
Employees:	-
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$15mn (2009 -actual)
Recent Round/Date:	\$430mn
Investors:	Softbank
PRODUCT/NEWS	
Popular Games/Product:	Happy Farm, Restaurant Games
Recent News:	
10/3/10: RenRen to merge with sister site Kaixin	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 72: Company Profile – RockYou

RockYou		
COMPANY DESCRIPTION		
Developer of social games and advertising solutions for social media. RockYou has over 10 million registered users and gets over 150 million widget views from over 200 countries per day. The company's most popular applications include ZooWorld (game), Birthday Card (social gifting) and RockYou Live (media sharing). RockYou is headquartered in Redwood City.		
GENERAL INFORMATION		
Category:	Social	
Headquarters:	Redwood City, CA	
Employees:	106	
FINANCIAL SNAPSHOT		
Revenue (Est/Actual):	\$100mn (2010 - estimate)	
Recent Round/Date:	\$10mn	6/7/2010
Investors:	Softbank	
PRODUCT/NEWS		
Popular Games/Product:	Zoo World, Hero World, My Casino, RockYou Pets	
Recent News:		
9/22/10: Working with developers to integrate its in-game ad unit: "Deal of the Day"		
7/22/10: Enters into a five-year deal to make Facebook Credits its exclusive virtual currency		
11/17/09: Receives \$50mn in Series D funding from Softbank		

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 73: Company Profile – Sandlot Games

Sandlot Games

COMPANY DESCRIPTION

Developer and publisher of casual and family-friendly games for different platforms including online, PC, mobile phones, handheld devices and videogame consoles. Sandlot's games have been downloaded over 300 million times and its portfolio includes popular titles like Cake Mania, Super Granny, Tradewinds and Westward. The company was incorporated in 2002 and is headquartered in Bothell.

GENERAL INFORMATION

Category:	Casual
Headquarters:	Bothell, WA
Employees:	50

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	-	
Recent Round/Date:	\$1.4mn	2008
Investors:	-	

PRODUCT/NEWS

Popular Games/Product: Cake Mania, Westward, Kuros, Tradewinds

Recent News:

10/14/09: Launches Cake Mania 3 for Nintendo DS
 9/11/09: Launches Cake Mania Special Delivery
 9/1/09: Launches Iron Roses

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 74: Company Profile – Tencent Holdings

<h1>Tencent Holdings</h1>	
COMPANY DESCRIPTION	
Provider of internet, mobile and telecommunications value-added services in China, including the development and operation of online games. The company operates QQ.com, a portal that integrates news, interactive communities, entertainment products and other services. It also operates search engine Soso.com. Headquartered in Shenzhen, the company is publicly traded on the Hong Kong Stock Exchange with the symbol 700. (Covered by DB Analyst Alan Hellawell)	
GENERAL INFORMATION	
Category:	Social
Headquarters:	Shenzhen, China
Employees:	8,687
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$2.9bn (2010 -estimate)
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	QQ.com, Soso.com
Recent News:	
8/30/10: Invests 49.9% in Thailand portal Sanook.com	
8/23/10: Acquires community products developer Comsenz	
4/20/10: Acquires remaining 40% stake in online game company Shenzhen Domain Networks	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 75: Company Profile – Wild Tangent

Wild Tangent

COMPANY DESCRIPTION

Interactive entertainment and media company operating two business segments: WildTangent Games and WildTangent Media. Through its Games division, the company distributes a diverse portfolio of gaming content from leading developers such as Capcom, PopCap and Sandlot Games in different platforms. With the Media division, it connects brand advertisers with targeted gaming audiences, reaching 100mn users worldwide and 35mn in the U.S. The company is headquartered in Redmond, WA.

GENERAL INFORMATION

Category:	Casual
Headquarters:	Redmond, WA
Employees:	100

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	-
Recent Round/Date:	\$20mn 11/1/2007
Investors:	Hercules Technology Growth Capital

PRODUCT/NEWS

Popular Games/Product: WildCoins, BrandBoost

Recent News:

9/13/10: Partners with Mochi Media to deliver video ads
 3/11/10: Cuts ad deal with Playdom to integrate ads in Tiki Farm
 2/23/10: Launches BrandBoost ad platform for social and online games

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 76: Company Profile – Zynga

Zynga	
COMPANY DESCRIPTION	
<p>Leading developer of social games with more than 215 million monthly active users playing its games. Key titles in Zynga's game portfolio include: FarmVille, Treasure Isle, Zynga Poker, Mafia Wars, YoVille, Café World, FishVille, PetVille and FrontierVille. Generally, Zynga games are available on Facebook, MySpace and the iPhone. Through Zynga.org, Zynga players have raised more than \$3 million for world social causes. Zynga is headquartered in San Francisco.</p>	
GENERAL INFORMATION	
Category:	Social
Headquarters:	San Francisco, CA
Employees:	1,200
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$600mn (2010 - estimate)
Recent Round/Date:	\$180mn 12/17/2009
Investors:	Kleiner Perkins, Digital Sky Technologies, Union Square Foundry Group and Avalon Investors
PRODUCT/NEWS	
Popular Games/Product:	FarmVille, MafiaWars, Treasure Isle
Recent News:	
8/17/10: Acquires Conduit Labs which specializes in social music games. Based in Boston	
7/28/10: Softbank invests \$150mn into Zynga, launches joint venture in Japan	
6/3/10: Acquires Challenge Games, based in Austin, TX	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Appendix B – Company Profiles: MMO Operators

Figure 77: Company Profile – Blizzard

Blizzard (Activision)

COMPANY DESCRIPTION

Blizzard Entertainment operates the largest subscription based MMORPG, World of Warcraft, which has over 12mn registered users worldwide. The other franchises operated by the company include StarCraft and Diablo. In addition, the company recently launched an online-gaming platform Battle.net across all its major titles, which allows for increased communication between players of different games. Headquartered in Irvine, the company is a division of Activision|Blizzard.

GENERAL INFORMATION

Category:	MMO
Headquarters:	Irvine, CA
Employees:	4,600

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	\$1.63bn (2010 - estimate)
Recent Round/Date:	N/A
Investors:	N/A

PRODUCT/NEWS

Popular Games/Product: World of Warcraft, StarCraft, Diablo

Recent News:

10/7/10: World of Warcraft reaches 12mn users worldwide
 10/4/10: World of Warcraft Cataclysm to be released on December 7, 2010
 10/4/10: StarCraft II Wings of Liberty one month sales break 3mn units

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 78: Company Profile – NC Soft Corporation

NC Soft Corporation

COMPANY DESCRIPTION

Publisher and developer of MMOs such as Aion, Lineage, Guild Wars and City of Heroes. The company also develops other applications such as myID.net, an ID service that allows the use of various services with one account and RollingList, a network service for sharing information. According to the company estimates, NC Soft is the #1 player in Korea's game market and #2 in the U.S. The company is publicly traded on the Korean Stock Exchange with the symbol A036570.

GENERAL INFORMATION

Category:	MMO
Headquarters:	Seoul, Korea
Employees:	2,327

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	\$544mn (2009 - actual)
Recent Round/Date:	N/A
Investors:	N/A

PRODUCT/NEWS

Popular Games/Product: Aion, Lineage, Guild Wars, City of Heroes

Recent News:

9/15/10: NCSoft and PopCap Games announce Korean partnership

9/13/10: Released Aion: Assault on Balaurea expansion set

9/22/09: Launched Aion MMO in North America/Europe

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 79: Company Profile – Netease

Netease	
COMPANY DESCRIPTION	
Developer of online games, internet applications and services and other technologies. The company's in-house gaming portfolio includes the Fantasy Westward Journey saga, Tianxia II, Heroes of Tang Dynasty and Datang. In addition, Netease has a JV with Blizzard, which allows it to offer World of Warcraft in China. Headquartered in Beijing, the company's ADR is traded on NASDAQ (NTES). Covered by DB Analyst Alan Hellawell.	
GENERAL INFORMATION	
Category:	MMO
Headquarters:	Beijing, China
Employees:	4,624
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$800mn (2010 - estimate)
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Fantasy Westward Journey, Tianxia II, Heroes of Tang Dynasty
Recent News:	
9/28/10: Netease.com likely to launch StarCraft II in 2H10	
8/24/10: World of Warcraft: Wrath of the Lich King to be launched in August 31 2010	
2/11/10: Receives approval from GAAP for the WoW Burning Crusades expansion pack in China	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 80: Company Profile – Nexon

Nexon

COMPANY DESCRIPTION

Korea-based developer of online casual games and MMOs. Nexon released its first MMO (The Kingdom of the Winds) in 1995 and has since introduced other popular games including QPlay, Crazy Arcade BnB, KartRider and Dungeon Fighter Online. Its first U.S. release, MapleStory is one of the most popular free-to-play MMOs with over 95mn users worldwide and over 6mn users in North America. The company is headquartered in Seoul and has offices in Tokyo, Los Angeles and London.

GENERAL INFORMATION

Category:	MMO
Headquarters:	Seoul, Korea
Employees:	N/A

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	\$550mn (2009 - actual)	
Recent Round/Date:	N/A	N/A
Investors:	N/A	

PRODUCT/NEWS

Popular Games/Product: MapleStory, QPlay, KartRider

Recent News:

10/4/10: Acquires 32% of Spanish developer BoomBang Games
 8/6/10: Names Owen Mahoney as CFO
 5/27/10: Acquires a controlling stake in GameHi for \$59.8mn

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 81: Company Profile – Square Enix

Square Enix	
COMPANY DESCRIPTION	
Developer and publisher of interactive entertainment content both for distribution as packaged goods and as online games. Its business model revolves around 'polymorphic content' strategy which consists of leveraging IP by publishing it across hardware and media types. Its main IP is Final Fantasy, distributed both as an MMO and as packaged good software. Other key titles include: Dragon Quest, Tomb Raider and the Kingdom Hearts series. The company is publicly traded in the TSE with the symbol 9684.	
GENERAL INFORMATION	
Category:	MMO
Headquarters:	Tokyo, Japan
Employees:	2,952
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$1.97bn (FY2011 - estimate)
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Final Fantasy, Dragon Quest, Tomb Raider
Recent News:	
9/21/10: Launched a new online payment method for North America called Crysta	
9/16/10: Shanda Games and Square Enix announce strategic partnership	
9/9/10: Teams with Ankama to release MMORPG WAKFU	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 82: Company Profile – Sulake Corporation

Sulake Corporation

COMPANY DESCRIPTION

Operates Habbo, one of the largest virtual community for teenagers and free-to-play MMOs. At the core of the Habbo experience is the Habbo Hotel in which users generate content and interact between them. Entering Habbo is free but users need to buy Habbo Credits (virtual currency) to access premium services. As of September, the site had amassed 185mn registered users and attracts 15mn visitors each month. Habbo is owned and operated by Sulake Corp. and is headquartered in Finland.

GENERAL INFORMATION

Category:	MMO
Headquarters:	Helsinki, Finland
Employees:	300

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	\$60mn (2009 - actual)
Recent Round/Date:	\$8.2mn 7/10/2006
Investors:	Movida Group (joint venture by SoftBank BB & Asian Groove)

PRODUCT/NEWS

Popular Games/Product: Habbo Hotel

Recent News:

10/11/10: Habbo Hotel and MTV brings 2010 MTV EMAs to the virtual community
 6/14/10 - Habbo Hotel turns 10 years old
 5/20/10 - Reports strong growth in 1Q: sales of \$25mn (+25%Y/Y), \$13mn in EBITDA

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites Note: Revenue figure correspond to Sulake Corporation

Appendix C – Company Profiles: Enabling Platforms

Figure 83: Company Profile – BOKU

BOKU		
COMPANY DESCRIPTION		
<p>Provider of mobile payment solutions in over 60 countries. A majority of the payments processed include virtual goods and services. The company is also looking at expanding into other payment processing for other digital goods such as music and e-books. It has partnerships with leading companies including Electronic Arts, Playfish and Playdom. It is based in San Francisco and has offices in Europe, Asia and Latin America. In 2009, it acquired mobile payment companies Paymo and Mobilicash.</p>		
GENERAL INFORMATION		
Category:	Payment Platform	
Headquarters:	San Francisco, CA	
Employees:	50	
FINANCIAL SNAPSHOT		
Revenue (Est/Actual):		
Recent Round/Date:	Undisclosed	5/27/2010
Investors:	Benchmark Capital, Index Ventures, Khosla Ventures DAG Ventures, Andreessen Horowitz	
PRODUCT/NEWS		
Popular Games/Product:	Paymo	
Recent News:	<p>06/04/10: Boku announces in-app mobile billing for Android developers 05/27/10: Boku takes latest investment round from Andreessen Horowitz 02/17/10: Globe GCASH, Boku sign international m-payments contract</p>	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 84: Company Profile – Direct2Drive (IGN Entertainment)

Direct2Drive (IGN Entertainment)

COMPANY DESCRIPTION

Online game store which allows consumers to buy and download PC games, comics and anime titles directly from the Web to their desktops. The platform offers more than 1,000 titles from over 300 publishers including Electronic Arts, Activision, PopCap and LucasArts. Since the site was launched in 2004, more than one million games have been downloaded. Direct2Drive is a unit of IGN Entertainment, part of News Corporation.

GENERAL INFORMATION

Category:	Digital Distribution
Headquarters:	San Francisco, CA
Employees:	260

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	-
Recent Round/Date:	-
Investors:	-

PRODUCT/NEWS

Popular Games/Product: Direct2Drive (D2D)

Recent News:

8/13/10: Launches first online games retail channel with free-to-play bundles
 9/29/09: Celebrates five-year anniversary
 7/14/09: Strikes digital distribution deal with LucasArts

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Note: Headquarters and employees information correspond to IGN Entertainment

Figure 85: Company Profile – PlaySpan

<h1>PlaySpan</h1>	
COMPANY DESCRIPTION	
<p>Leading monetization solutions provider for online games, social networks and online videos. It has developed a Monetization-as-a-Service platform which enables in-game digital goods commerce. It also offers a global payments solution in 180 countries for in-app purchases. PlaySpan's Ultimate Game Card of the #1 selling multi-game prepaid card. Publishing partners include EA, Ubisoft, Warner Bros and Disney. It is located in the Silicon Valley and has offices in Ohio, Virginia and India.</p>	
GENERAL INFORMATION	
Category:	Monetization Platform
Headquarters:	South Bay, CA
Employees:	120
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	\$11.1mn (2009)
Recent Round/Date:	\$18mn 8/19/2010
Investors:	Easton Capital, Menlo Ventures, STIC Investments Novel TMT Ventures, Vodafone Ventures, Softbank
PRODUCT/NEWS	
Popular Games/Product:	Ultimate Pay (monetization platform), Ultimate Game Card
Recent News:	
10/13/10: Facebook taps PlaySpan's Ultimate Pay to offer 20 more ways to pay for Credits	
8/28/10: Hires a gaming icon as its sales chief	
8/19/10: Raises \$18mn in Series C funding	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 86: Company Profile – Steam (Valve Corp)

Steam (Valve Corp)

COMPANY DESCRIPTION

Steam is a digital distribution, digital rights management, multiplayer and communications platform developed by the Valve Corporation. It is used to distribute games and related media online, from small independent developers to larger software houses. Steam also has community features, automated game updates, and in-game voice and chat functionality. The platform distributes and manages over 1,100 games to a community of more than 25 million players around the world.

GENERAL INFORMATION

Category:	Digital Distribution
Headquarters:	Bellevue, WA
Employees:	225

FINANCIAL SNAPSHOT

Revenue (Est/Actual):	-
Recent Round/Date:	-
Investors:	-

PRODUCT/NEWS

Popular Games/Product: Steam

Recent News:

05/12/10: Steam for the Mac is released
4/22/09: NCSoft offers product lineup on Steam

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites Note: Headquarters and employees information correspond to Valve Corporation

Figure 87: Company Profile – Super Rewards

Super Rewards	
COMPANY DESCRIPTION	
Virtual currency platform which enables publishers to reward gamers and application users with additional points, virtual goods or dollars for completing offers or paying with different options. The Super Rewards platform can be deployed on social networks, websites, mobile application, virtual world or MMO. The platform's average earnings rate is \$78 per 1,000 daily active unique users on each application. Super Rewards was acquired by Adknowledge in 2009.	
GENERAL INFORMATION	
Category:	Monetization Platform
Headquarters:	Vancouver, Canada
Employees:	35
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	-
Recent Round/Date:	-
Investors:	-
PRODUCT/NEWS	
Popular Games/Product:	Super Rewards
Recent News:	
9/15/10: Unveils first Three-in-One monetization platform for online games and apps	
7/22/09: Parent company KITN Media is acquired by Adknowledge	
3/9/10: Announces in-game flash monetization options	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 88: Company Profile – Tapjoy

Tapjoy (Formerly Offerpal Media)

COMPANY DESCRIPTION

Formerly Offerpal, Tapjoy is a developer of monetization and distribution services for social and mobile gaming applications, MMOs, virtual worlds, social platforms and other publishers selling virtual goods or premium digital assets. Since its launch in 2007, the company has issued more than 1 trillion virtual points to over 225mn consumers across 2,000 publishers and 190 countries. Tapjoy is headquartered in San Francisco and has offices in London and Tokyo.

GENERAL INFORMATION

Category: Monetization Platform
Headquarters: San Francisco, CA
Employees: 60

FINANCIAL SNAPSHOT

Revenue (Est/Actual): N/A
Recent Round/Date: \$15mn 2/17/2009
Investors: D.E. Shaw Ventures, InterWest Partners
 North Bridge Venture Partners

PRODUCT/NEWS

Popular Games/Product: Tapjoy, Offerpal

Recent News:

10/6/10: Changes name to Tapjoy, from Offerpal

9/3/10: Names Mihir Shah CEO

3/22/10: Acquires Tapjoy, a mobile app developer evolving to monetization platform

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Figure 89: Company Profile – TrialPay

TrialPay	
COMPANY DESCRIPTION	
Developer of payment solutions for e-commerce merchants in the casual games, online services, retail, social apps and software industries. The company is well known for its "Get It Free" model in which users pay for one item by trying or buying something else, but it also offers Purchase Incentives and Transactional Advertising. Over the past four years, TrialPay has serviced 60 million registered users at more than 10,000 sites . The company was incorporated in 2006 and is headquartered in Mountain View.	
GENERAL INFORMATION	
Category:	Monetization Platform
Headquarters:	Mountain View, CA
Employees:	80
FINANCIAL SNAPSHOT	
Revenue (Est/Actual):	-
Recent Round/Date:	\$12.7mn 2/19/2008
Investors:	Atomico, Index Ventures, Baseline Ventures Battery Ventures
PRODUCT/NEWS	
Popular Games/Product:	Get It Free, Purchase Incentives, Transaction Ads
Recent News:	
10/6/10: Launches DealSpot platform to bring branded deals to apps	
8/5/09: Appoints Daniel Greenberg as CMO	
7/21/09: Launches enhanced payment platform for social/casual games	

Source: Deutsche Bank Securities Estimates, Company Website, Industry news articles/sites

Glossary of Terms

Abbreviations for Commonly-Used Terms

API: Application Programmable Interface. Generally used as the bridge between computer programs to servers from one to another

ARPPU: Average Revenue per Paying User

ARPU: Average Revenue per User

CAGR: Compound Annual Growth Rate

CPA: Cost per acquisition

CPC: Cost per click

CPM: Cost per one-thousand impressions

DAU: Daily Active Users. Generally used to measure social gaming

DRM: Digital Rights Management

FPS: First Person Shooter Game. E.g. Call of Duty Modern Warfare and Medal of Honor

MAU: Monthly Active Users. Generally used to measure social gaming

MMO: Massively Multi-player Online Game

MMO-RPG: Massively Multi-player Online Role-Playing-Game. E.g. World of Warcraft

PS: Playstation console

PS2: Playstation 2 console

PS3: Playstation 3 console

PSP: Playstation Portable

RPG: Role Playing Game. E.g. Final Fantasy

Activision-Blizzard

Investment thesis

Outlook

We believe Activision is well positioned to gain share in the video game cycle and deliver earnings upside at the same time. While owned IPs such as Guitar Hero and Call of Duty should help to build an annuity-like revenue stream for the company, we note that significant operating margin expansion is likely, particularly as unit volumes scale across a fixed cost base. Moreover, the addition of Vivendi Games (Blizzard) layers in a recurring revenue stream and very robust operating margins from World of Warcraft, thereby creating a potent new force in the video game sector (with industry-leading operating margins and growth). With significant upside potential over the next 12 months on our estimates, we view the valuation as attractive, especially relative to peer Electronic Arts: Buy.

Valuation

Our \$15 price target is based on 16x our ex-cash CY11E EPS of \$0.78 plus \$2.66 in cash, a premium to the 15x FY11 multiple that EA is trading at given the company's more diversified revenue stream and high-quality stable of in-house IP. Should the Blizzard business trade in line with other Internet content subscription models, and the core publishing unit trades in the low teens multiple range, we think there is likely upside to our price target. We believe a premium to other industry participants' multiples is warranted given Activision's compelling product line-up, strong subscription-based business in Blizzard, market share gains (~16% in 2008, up from 10% five years ago), higher margins, and potential upside to earnings from leverage against generally fixed technology costs. Moreover, while the current economic environment creates some uncertainty, we highlight that Blizzard provides strong visibility to revs and profits and moves Activision away from being pinned down by the video game cycle. We think this visibility and diversification, coupled with Activision's now industry leading profit margins, should command a premium to the sector average.

Risk

Risks include: hardware unit sales from next-gen consoles are different than expectations; weaker-than-expected consumer demand for video game software; lower-than-expected operating leverage in the business models could result in lower margins than currently anticipated; software pricing does not remain firm for both current and next-gen SW titles, which would affect top-line growth and margin performance; stock option backdating investigation creates overhang in the shares and risk of additional option-related expenses and/or management changes.

Electronic Arts

Investment thesis

Outlook

In our view EA's game quality remains questionable, which in turn could translate into ongoing market share losses and limit operating margin expansion to historical levels (seen in the previous cycle). The company is leveraging a title lineup in fiscal 2011 (that performed poorly in FY10). In our opinion, the lack of major outperformance on unit volumes among a majority of EA's titles, especially with a growing fixed R&D expense base, represents the single most important hurdle for the company. We see significant downside potential on ambitious revenue and profit ramps: Sell.

Valuation

Our \$12 price target is based on 15x FY11E EPS of \$0.45 plus ~\$5.25 in cash per share. This multiple is comparable to a group of technology leaders, trading at 15x CY10 earnings. We believe this comparison is warranted as the technology comp group (including companies such as Apple, Cisco, Google, Hewlett-Packard, Intel) are generally being impacted by the economy and not facing structural challenges as in the case of Electronic Arts. Note that EA is affected by both structural issues/execution as well as the weak industry/economic environment, whereas other tech companies have been merely impacted by the economy. The multiple on our PT is also supported by other comparable video game companies trading at 14x-17x earnings on CY10/FY11 currently.

Risk

Better than expected hardware unit sales from next-gen consoles and/or faster ramp-up than expected - Better than expected consumer demand for video game software - Erosion in current-gen software pricing and demand is less than expected - Better than expected leverage in the business model results in higher margins than currently anticipated - Currency fluctuations can have a material impact upon revenues and earnings given that almost 50% of EA's revenues are generated outside the US - Confusion over GAAP vs. Pro-Forma revenue and EPS treatment may lead to volatility in the shares

THQ

Investment thesis

Outlook

Our HOLD investment rating on the shares of THQ is based on our expectations of improving earnings growth and concerns on macroeconomic issues including weakness in Europe and a strengthening USD, which likely increases risks to our estimates. While THQ is executing against a narrowed product focus (which should lead to consistent operating profits over time), near-term uncertainties may be difficult to overcome from the standpoint of meaningful levels of profitability (at least for fiscal 2011). While the company's lineup has improved, the weakness in the sector clearly favors only a handful of major franchises industry wide, otherwise most other titles (including those of THQ) may require increased marketing support and potentially price discounting to achieve sell-through. We believe that this could impair earnings growth and, hence expect limited upside potential for the stock.

Valuation

Our \$4 price target is based on our sum of the parts valuation, which includes ~\$2 in cash, a 13x multiple on FY12E EPS of \$0.13, and \$0.39 per share in NOL value. Our 13x multiple is at a discount to Activision|Blizzard given the company's less diversified operations within the gaming segment with profits mainly coming from its core publishing unit. While its franchises remain strong with generally consistent sell-through, the recent weakness in UFC and release extension, keeps us on the sidelines as we await new releases. Longer-term, we are more constructive on a leaner title lineup translating into revenue gains, yet the unknown lies in the near-term on costs of marketing, potential pricing concessions due to industry weakness and unfavorable FX trends.

Risk

Key downside risks include: lack of compelling internal IP games, and general industry concerns over software pricing sustainability and next-gen hardware demand. Competitive titles in the marketplace that could take market share from THQ. General economic slowdown and lack of consumer spending. Lower than expected unit and dollar sell-through for its titles and SKUs. Retailers reluctance to stock inventory at historical levels to save stock space, and/or require better terms in price protection. Weakness in retail sales spilling over into video game software sales. Upside risks to our price target include: Improved industry sell-through which could result in lower marketing expenses and lower price concessions. Improved catalog sales which could drive profitability. More compelling IP games and better pricing sustainability. Less competitive titles in the marketplace, leading to share gains. Higher and better sell-through for titles and SKUs. Retailers restocking inventory at higher levels. Better retail sales of video game software.

Google

Investment thesis

Outlook

We rate Google Buy. Google has built the quintessential black box in matching text-based advertising with the interests of consumers via search. This brand permission and dominant position also is allowing the company to re-invest into new applications and web services, which in turn creates increased consumer usage and monetization opportunities. While re-investment should continue, we think profit dollar growth (not % margins) should remain robust for the foreseeable future.

Valuation

Our price target is based on 20x our 2011E EPS of \$32.42. We think this premium multiple to the market (S&P500 multiple of 16x) is justified given the secular growth available from internet advertising and better-than-expected growth at Google vs. market growth. Furthermore, at our price target Google trades at 23x 2010E EPS, or a significant discount to the internet media group multiple of 30x, despite one of the fastest growth rates in the sector. A premium to growth is justified as secular growth resumes in the model in the next 12-months, implying a 20x multiple vs. 19% operating profit growth forecasted at the company.

Risk

Key investment risks include: lack of guidance and management view, slowdown in advertiser spending, potentially unfavorable market trends in online advertising, loss of network members, intensifying competition on several fronts, potential loss of advertising share to new interactive media, rapidly changing technology market and FX rate fluctuations.

The author of this report wishes to acknowledge the contribution made by Nitin Saigal and Josue Calderon, employees of Evalueserve, a third-party provider to Deutsche Bank of offshore research support services.

Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Activision-Blizzard	ATVI.OQ	11.47 (USD) 29 Oct 10	2,6,7,8,14,17
Electronic Arts	ERTS.OQ	15.85 (USD) 29 Oct 10	2,6,8
Google	GOOG.OQ	612.99 (USD) 29 Oct 10	2,6,8
THQ	THQI.OQ	4.00 (USD) 29 Oct 10	2,6

*Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies.

Important Disclosures Required by U.S. Regulators

Disclosures marked with an asterisk may also be required by at least one jurisdiction in addition to the United States. See "Important Disclosures Required by Non-US Regulators" and Explanatory Notes.

- Deutsche Bank and/or its affiliate(s) makes a market in securities issued by this company.
- Deutsche Bank and/or its affiliate(s) owns one percent or more of any class of common equity securities of this company calculated under computational methods required by US law.
- Deutsche Bank and/or its affiliate(s) has received compensation from this company for the provision of investment banking or financial advisory services within the past year.
- Deutsche Bank and/or its affiliate(s) expects to receive, or intends to seek, compensation for investment banking services from this company in the next three months.
- Deutsche Bank and/or its affiliate(s) has received non-investment banking related compensation from this company within the past year.

Important Disclosures Required by Non-U.S. Regulators

Please also refer to disclosures in the "Important Disclosures Required by US Regulators" and the Explanatory Notes.

- Deutsche Bank and/or its affiliate(s) makes a market in securities issued by this company.
- Deutsche Bank and/or its affiliate(s) owns one percent or more of any class of common equity securities of this company calculated under computational methods required by US law.
- Deutsche Bank and/or its affiliate(s) has received compensation from this company for the provision of investment banking or financial advisory services within the past year.
- Deutsche Bank and or/its affiliate(s) has a significant Non-Equity financial interest (this can include Bonds, Convertible Bonds, Credit Derivatives and Traded Loans) where the aggregate net exposure to the following issuer(s), or issuer(s) group, is more than 25m Euros.

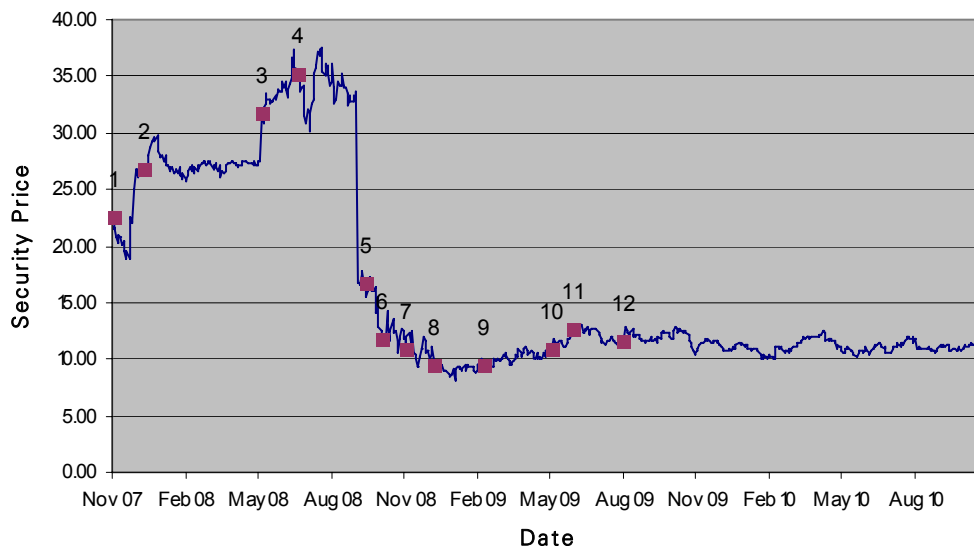
For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <http://gm.db.com/ger/disclosure/DisclosureDirectory.eqr>.

Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst about the subject issuers and the securities of those issuers. In addition, the undersigned lead analyst has not and will not receive any compensation for providing a specific recommendation or view in this report. Jeetil Patel

Historical recommendations and target price: Activision-Blizzard (ATVI.OQ)

(as of 29/10/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

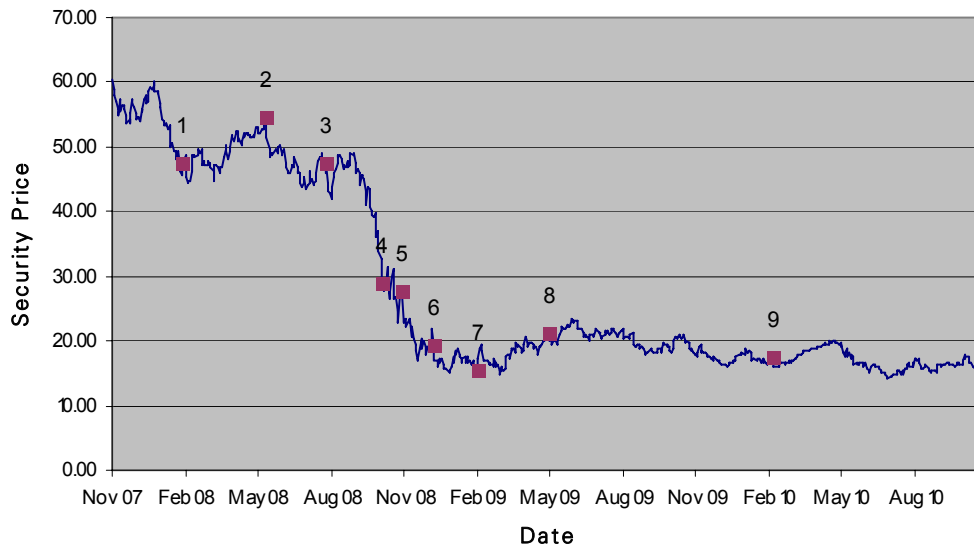
- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	11/6/2007:	Buy, Target Price Change USD25.00	7.	11/6/2008:	Buy, Target Price Change USD17.00
2.	12/14/2007:	Buy, Target Price Change USD31.00	8.	12/12/2008:	Buy, Target Price Change USD13.00
3.	5/9/2008:	Buy, Target Price Change USD35.00	9.	2/12/2009:	Buy, Target Price Change USD12.50
4.	6/24/2008:	Buy, Target Price Change USD42.00	10.	5/8/2009:	Buy, Target Price Change USD13.00
5.	9/16/2008:	Buy, Target Price Change USD21.00	11.	6/5/2009:	Buy, Target Price Change USD15.50
6.	10/8/2008:	Buy, Target Price Change USD18.00	12.	8/6/2009:	Buy, Target Price Change USD15.00

Historical recommendations and target price: Electronic Arts (ERTS.OQ)

(as of 29/10/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

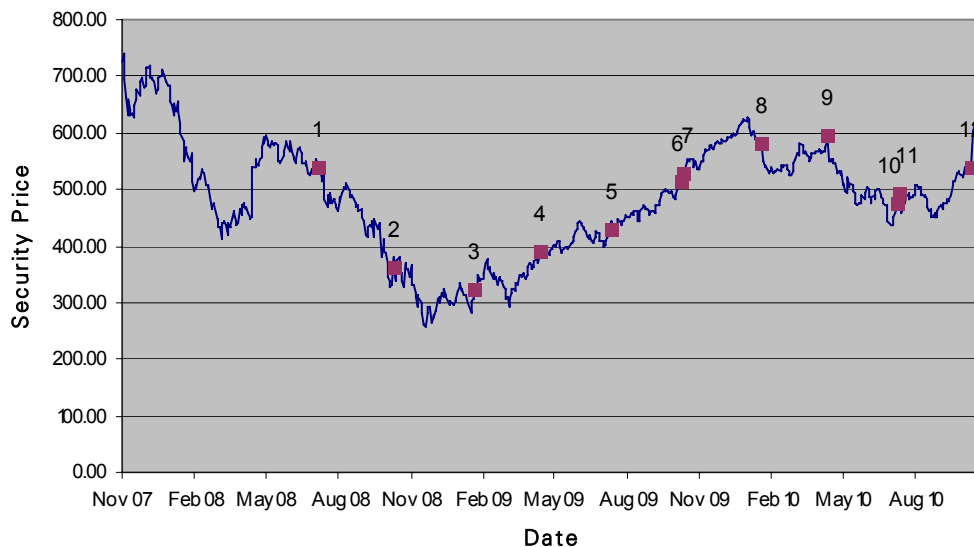
- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	2/1/2008:	Sell, Target Price Change USD40.00	6.	12/10/2008:	Sell, Target Price Change USD13.00
2.	5/14/2008:	Sell, Target Price Change USD39.00	7.	2/4/2009:	Sell, Target Price Change USD12.00
3.	7/30/2008:	Sell, Target Price Change USD37.00	8.	5/6/2009:	Sell, Target Price Change USD14.00
4.	10/8/2008:	Sell, Target Price Change USD26.00	9.	2/9/2010:	Sell, Target Price Change USD12.00
5.	10/31/2008:	Sell, Target Price Change USD19.00			

Historical recommendations and target price: Google (GOOG.OQ)

(as of 29/10/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

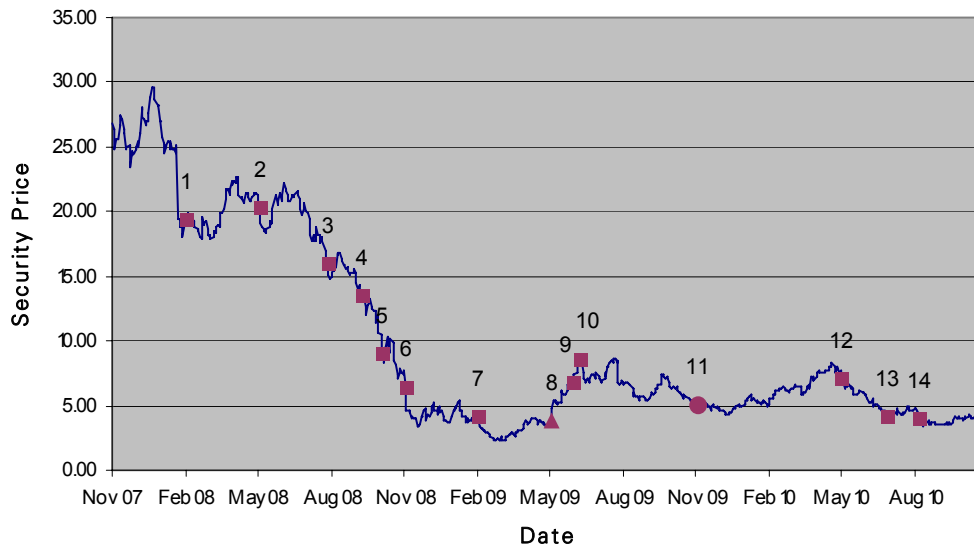
- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	7/10/2008:	Buy, Target Price Change USD635.00	7.	10/16/2009:	Buy, Target Price Change USD615.00
2.	10/14/2008:	Buy, Target Price Change USD480.00	8.	1/22/2010:	Buy, Target Price Change USD626.00
3.	1/23/2009:	Buy, Target Price Change USD390.00	9.	4/16/2010:	Buy, Target Price Change USD700.00
4.	4/17/2009:	Buy, Target Price Change USD425.00	10.	7/13/2010:	Buy, Target Price Change USD655.00
5.	7/17/2009:	Buy, Target Price Change USD475.00	11.	7/16/2010:	Buy, Target Price Change USD610.00
6.	10/12/2009:	Buy, Target Price Change USD580.00	12.	10/15/2010:	Buy, Target Price Change USD650.00

Historical recommendations and target price: THQ (THQ.OQ)

(as of 29/10/2010)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	2/6/2008:	Hold, Target Price Change USD21.00	8.	5/7/2009:	Upgrade to Buy, Target Price Change USD6.00
2.	5/7/2008:	Hold, Target Price Change USD18.00	9.	6/3/2009:	Buy, Target Price Change USD8.00
3.	7/31/2008:	Hold, Target Price Change USD15.00	10.	6/12/2009:	Buy, Target Price Change USD9.00
4.	9/12/2008:	Hold, Target Price Change USD13.00	11.	11/5/2009:	Downgrade to Hold, Target Price Change USD6.00
5.	10/8/2008:	Hold, Target Price Change USD8.00	12.	5/6/2010:	Hold, Target Price Change USD7.00
6.	11/6/2008:	Hold, Target Price Change USD5.00	13.	7/2/2010:	Hold, Target Price Change USD4.50
7.	2/5/2009:	Hold, Target Price Change USD3.60	14.	8/11/2010:	Hold, Target Price Change USD4.00

Equity rating key Equity rating dispersion and banking relationships

Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus projected dividend yield) , we recommend that investors buy the stock.

Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock

Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

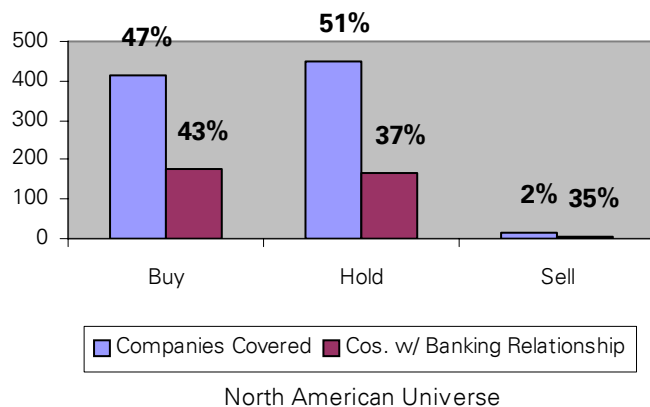
Notes:

1. Newly issued research recommendations and target prices always supersede previously published research.
2. Ratings definitions prior to 27 January, 2007 were:

Buy: Expected total return (including dividends) of 10% or more over a 12-month period

Hold: Expected total return (including dividends) between -10% and 10% over a 12-month period

Sell: Expected total return (including dividends) of -10% or worse over a 12-month period



Regulatory Disclosures

1. Important Additional Conflict Disclosures

Aside from within this report, important conflict disclosures can also be found at <https://gm.db.com/equities> under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

2. Short-Term Trade Ideas

Deutsche Bank equity research analysts sometimes have shorter-term trade ideas (known as SOLAR ideas) that are consistent or inconsistent with Deutsche Bank's existing longer term ratings. These trade ideas can be found at the SOLAR link at <http://gm.db.com>.

3. Country-Specific Disclosures

Australia: This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act.

Brazil: The views expressed above accurately reflect personal views of the authors about the subject company(ies) and its(their) securities, including in relation to Deutsche Bank. The compensation of the equity research analyst(s) is indirectly affected by revenues deriving from the business and financial transactions of Deutsche Bank.

EU countries: Disclosures relating to our obligations under MiFID can be found at <http://globalmarkets.db.com/riskdisclosures>.

Japan: Disclosures under the Financial Instruments and Exchange Law: Company name - Deutsche Securities Inc. Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, The Financial Futures Association of Japan. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered as rating agency in Japan unless specifically indicated as Japan entities of such rating agencies.

New Zealand: This research is not intended for, and should not be given to, "members of the public" within the meaning of the New Zealand Securities Market Act 1988.

Russia: This information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

Deutsche Bank Securities Inc.

North American locations

Deutsche Bank Securities Inc.

60 Wall Street
New York, NY 10005
Tel: (212) 250 2500

Deutsche Bank Securities Inc.

One International Place
12th Floor
Boston, MA 02110
United States of America
Tel: (1) 617 217 6100

Deutsche Bank Securities Inc.

222 South Riverside Plaza
30th Floor
Chicago, IL 60606
Tel: (312) 537-3758

Deutsche Bank Securities Inc.

3033 East First Avenue
Suite 303, Third Floor
Denver, CO 80206
Tel: (303) 394 6800

Deutsche Bank Securities Inc.

1735 Market Street
24th Floor
Philadelphia, PA 19103
Tel: (215) 854 1546

Deutsche Bank Securities Inc.

101 California Street
46th Floor
San Francisco, CA 94111
Tel: (415) 617 2800

Deutsche Bank Securities Inc.

700 Louisiana Street
Houston, TX 77002
Tel: (832) 239-4600

International locations

Deutsche Bank Securities Inc.

60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500

Deutsche Bank AG London

1 Great Winchester Street
London EC2N 2EQ
United Kingdom
Tel: (44) 20 7545 8000

Deutsche Bank AG

Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany
Tel: (49) 69 910 00

Deutsche Bank AG

Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG

Level 55
Cheung Kong Center
2 Queen's Road Central
Hong Kong
Tel: (852) 2203 8888

Deutsche Securities Inc.

2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6770

Global Disclaimer

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). The information herein is believed to be reliable and has been obtained from public sources believed to be reliable. Deutsche Bank makes no representation as to the accuracy or completeness of such information.

Deutsche Bank may engage in securities transactions, on a proprietary basis or otherwise, in a manner **inconsistent** with the view taken in this research report. In addition, others within Deutsche Bank, including strategists and sales staff, may take a view that is **inconsistent** with that taken in this research report.

Opinions, estimates and projections in this report constitute the current judgement of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof in the event that any opinion, forecast or estimate set forth herein, changes or subsequently becomes inaccurate. Prices and availability of financial instruments are subject to change without notice. This report is provided for informational purposes only. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst judgement.

As a result of Deutsche Bank's recent acquisition of BHF-Bank AG, a security may be covered by more than one analyst within the Deutsche Bank group. Each of these analysts may use differing methodologies to value the security; as a result, the recommendations may differ and the price targets and estimates of each may vary widely.

Deutsche Bank has instituted a new policy whereby analysts may choose not to set or maintain a target price of certain issuers under coverage with a Hold rating. In particular, this will typically occur for "Hold" rated stocks having a market cap smaller than most other companies in its sector or region. We believe that such policy will allow us to make best use of our resources. Please visit our website at <http://gm.db.com> to determine the target price of any stock.

The financial instruments discussed in this report may not be suitable for all investors and investors must make their own informed investment decisions. Stock transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Deutsche Bank may with respect to securities covered by this report, sell to or buy from customers on a principal basis, and consider this report in deciding to trade on a proprietary basis.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. In the U.S. this report is approved and/or distributed by Deutsche Bank Securities Inc., a member of the NYSE, the NASD, NFA and SIPC. In Germany this report is approved and/or communicated by Deutsche Bank AG Frankfurt authorized by the BaFin. In the United Kingdom this report is approved and/or communicated by Deutsche Bank AG London, a member of the London Stock Exchange and regulated by the Financial Services Authority for the conduct of investment business in the UK and authorized by the BaFin. This report is distributed in Hong Kong by Deutsche Bank AG, Hong Kong Branch, in Korea by Deutsche Securities Korea Co. This report is distributed in Singapore by Deutsche Bank AG, Singapore Branch, and recipients in Singapore of this report are to contact Deutsche Bank AG, Singapore Branch in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), Deutsche Bank AG, Singapore Branch accepts legal responsibility to such person for the contents of this report. In Japan this report is approved and/or distributed by Deutsche Securities Inc. The information contained in this report does not constitute the provision of investment advice. In Australia, retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product. Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10). Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published by any person for any purpose without Deutsche Bank's prior written consent. Please cite source when quoting.

Copyright © 2010 Deutsche Bank AG