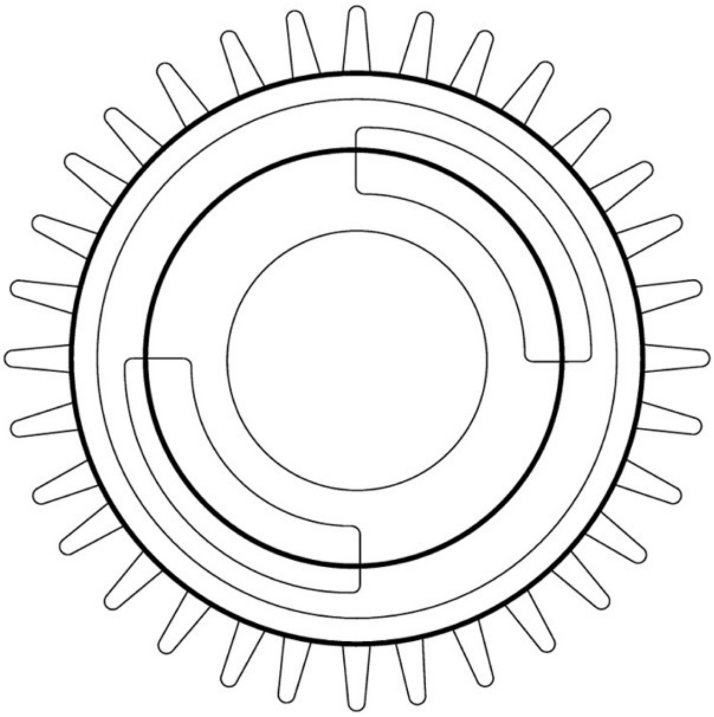
Broadband Game Play

Game Play and the Impact on Broadband Networks



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Introduction

The next generation of game consoles are about to be released onto an eager market. They ooze styling worthy of Apple and contain enough number crunching ability to outwit a 'super-computer'. Computing power has been estimated as being 5 times the average home PC for the Xbox 360 (or 1 Teraflop[1]) and about 10 times the average home PC for the Playstation 3 (2 Teraflops). They are however, not just pulsating powerhouses, they will have a rich list of features and interfaces too.

It is the intention of their designers for them to become the de-facto home entertainment gateway.

This paper is a brief look into how the acceptance of these devices (and other significant factors) could affect the use of broadband data and delivery networks.

1 *Teraflop* – A measure of computing speed equal to one trillion (10^{12}) floating-point operations per second

Next Generation Capabilities

Microsoft Xbox 360

With this amount of raw processing power the graphics, A.I. (Artificial Intelligence) and general game play will be astounding. The example games shown at each of the respective launches for the Microsoft Xbox 360 and Sony Playstation 3 both demonstrated these 'basic' console abilities very well. But these devices are no longer limiting themselves to dominating game play; instead they want a bigger piece of the action.

Both boxes share many features but the headline features are;

- WiFi connectivity
- Bluetooth controllers
- Memory slot
- Friendly GUI[2]'s
- Multi media support (for a large variety of formats)
- Broadband interface (Interactivity, VoIP[3], Video Conferencing)
- Game personalisation (increasing the use of custom Avatars[4] and gaming scenarios)

With this list of extras the console will happily play MP3 content from your PC, host Video conferencing calls and play all of your DVD collection. In other words, it sits right at the centre of the core home entertainment space. The console manufacturers expect market expansion through this diversification and through on-line gaming via the increasing availability of broadband services.

But what, if anything, will change?

Is the demand there?

All of this only really matters if there is enough demand for such a product. Games consoles are no longer the preserve of young males.

2 *GUI – Graphical User Interface*

3 *VoIP – Voice Over IP – The use of the Internet Protocol to transport voice traffic.*

4 *Avatar – Virtual identity representing the gamer's persona within a game.*

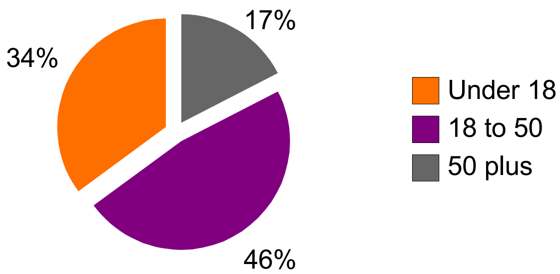
Who Plays Games?

Broad Appeal

Games consoles are increasingly becoming mainstream not just for teenagers and 'twenty something's' but across much of the population. Over half of the population bought some form of PC or console based game last year[5] and generally the unit sales of games are up approximately 10% year on year.

The gaming industry is relatively young at about 30 years old. This means the first generation gamers are now in their 30's with higher disposable income to spend on games.

The big changes are around who plays games and how they play. The chart shows how the percentage mix is spread over a broad age group.



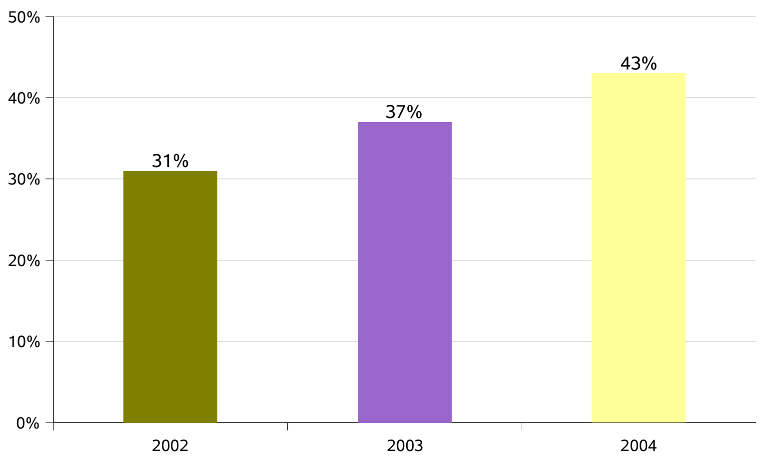
Game Play by Age Group (Source: ESA)

The expected trend is for the proportion of older players and women to continue to grow which is likely to lead to even more diverse game genres to satisfy their differing demands.

On-line Play

The age range of games players is clearly growing at a steady pace and so is the use of on-line gaming.

Broadband technology provides game designers with additional tools to enhance game interaction amongst groups of players as well as individuals, this increase in group play functionality, will drive increased broadband usage. The chart shows steady growth for on-line gaming which is expected to grow significantly with the increasing availability of broadband and choice of on-line games.



Growth of On-line Gaming 2002 to 2004 (Source:ESA)

5 *Entertainment Software Association report - "Essential Facts About the Computer Video Gaming Industry"*

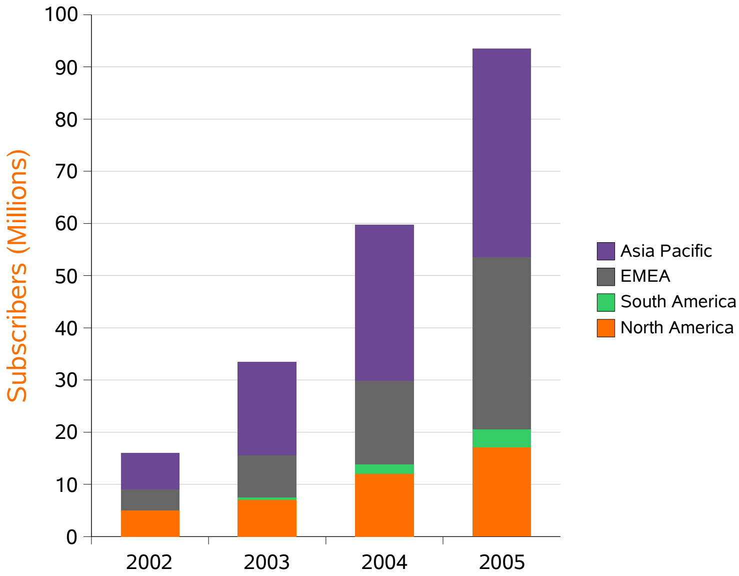
Why The Move To Broadband?

Broadband Service Availability

The increasing availability and bandwidth of broadband services has had a big impact on on-line gaming. Broadband providers are reducing costs and increasing bandwidths in an attempt to retain their customer base, benefiting the consumer.

Western European residential broadband uptake has exploded in the past two years - adoption grew 81% in 2003 and 28% in 2004. By 2010, Forrester Research[6] predicts that European broadband penetration will reach 41% (72 million households), which equals 67% of those on-line in that year.

As can be seen from the chart, broadband access worldwide is increasing at an almost exponential rate. As a result, greater availability, reduced cost and improved bandwidths are tempting gamers to go on-line.



Broadband Subscriber Base 2001 to 2005 (Source BCi Research)

Increased Functionality

The Microsoft Xbox 'live' option may well have been the catalyst to confirm that on-line gaming had arrived and that a games console could be used for more than simple man-machine game play.

The addition of enriched functionality around communications with other players by voice as well as a shared gaming experience has increased the need for on-line bandwidth.

This is just the start, the increased availability and bandwidth of broadband services will provide game designers with new tools with which to enhance the gaming experience.

The main driver for gamers to play on-line is the interaction with the game environment and other 'live' players. This adds another dimension, so instead of the 'player versus machine' scenario it is 'you versus the world'[7].

PC, console and wireless gaming platform providers are predicting strong growth for on-line gaming compared to little or no growth for off-line gaming.

6 Source: http://www.pressreleasenetwork.com/newsroom/news_view.phtml?news_id=1145

7 MMOG – Massive Multiplayer On-line Games

Improved Distribution Channels

The combination of the new consoles and high bandwidth connections will affect existing game distribution channels. Why visit a shop to buy a game when you can just download it?

Distribution content in this way does raise a number of questions around licensing and usage rights, payment and copy protection. By separating the licenses from the game itself, the distribution cost may indeed be reduced dramatically and new multi-level security methods will allow games to be distributed by any means.

Changing the business model from selling games to selling licenses enables new opportunities. The use of some form of DRM[8] system would enable licensing models like trial, full licenses, subscriptions to a set of games and community based licensing for multiple devices.

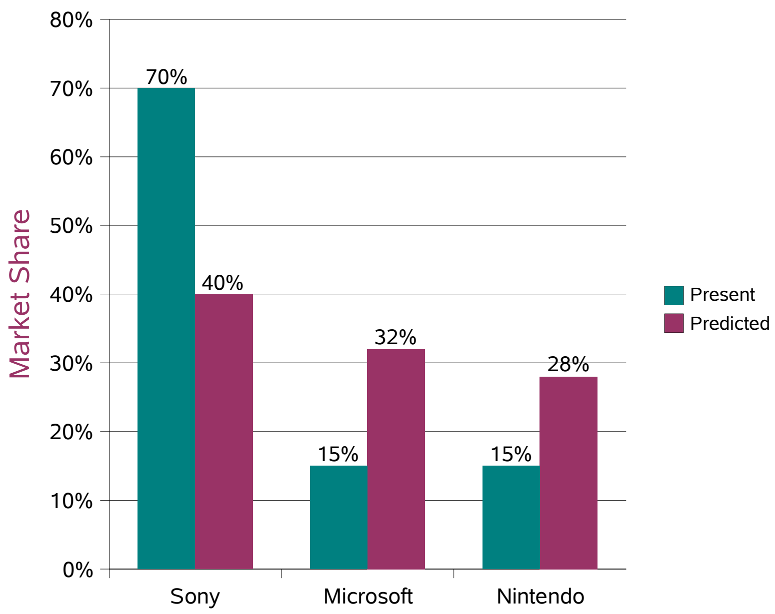
An alternative distribution method would be to ‘stream’ games. There are currently a number of Internet based offerings where for a regular subscription fee you may 'book' a server to play streaming games on your PC.

The reduction in the retail cost of games and other usage models is a compelling factor driving gamers on-line.

Competition

Serious competition to the Sony Playstation 2 arrived in the form of the Microsoft Xbox in 2001 and that in turn, led to aggressive price cuts on both consoles.

Currently the Xbox retails at under £100, Microsoft's strategy being to make their money on games sales. This strategy is enhanced by the production of platform specific games such as 'Halo' for Xbox. Market research predictions[9] for the next-generation console battle, reveal that Sony's grip on the market is expected to weaken - with PS3 set to win only 50 per cent market share at best.



Console Market Share Trends (Source: DFC Intelligence)

8 *DRM - Digital Rights Management*

9 *DFC Intelligence*

At present, the PlayStation 2 controls around 70 per cent of the global console market, while the Xbox and Nintendo GameCube have around 15 per cent each; but it is expected that Sony's rivals will make headway over the coming years.

The current "best case scenario" figures for all three consoles show the PlayStation 3 taking 50 per cent market share at best, while Microsoft's Xbox 360 stands to take a maximum of 40 per cent share, and the Nintendo Revolution can hope for no more than 35 per cent.

Market Growth

Estimates on the future size of the game market vary but they all point to rapid growth.

Forecasts[10] estimate that global video game software spending will expand from $21.2 billion in 2002 to $35.8 billion in 2007, growing at a compound annual rate of 11%.

Latin America and Canada, starting from a very low base, are projected to be the fastest-growing regions, burgeoning at a collective compound annual growth rate of 16.1%. Spending in Latin America is projected to increase from $148 million in 2002 to $312 million in 2007, and Canada is seen as reaching $1.2 billion in 2007 from $575 million in 2002.

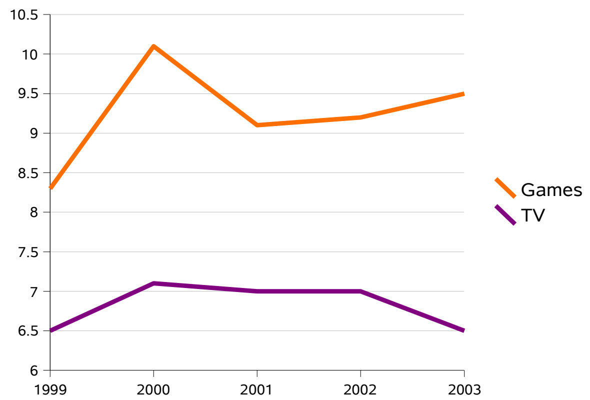
The global video game industry is predicted to be worth $41.49 billion by 2009, incorporating $31.6 billion of revenue from traditional games and game hardware, along with $9.8 billion from on-line game revenues.

New Media Channels

In December 2003, 84.6 million people visited on-line gaming sites. This number is projected to be 104 million by 2007[11]. The main player in an average home spends more than two hours a day and four days a week playing video games.

Advertisers faced with the decreasing influence of TV as a marketing tool, are increasingly turning to alternative promotional channels. On-line gaming represents a powerful new alternative.

Recent figures demonstrate the increasing influence of on-line gaming over TV among certain demographic groups.



TV & Game Play Habits Among 10 to 30 Year Old Men (Source: IDC & Neilsen)

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10 Price Waterhouse Coopers Report - The Whole World is Playing - The Outlook for Video Games, 2003 to 2007: A Global Overview

11 IDC and Nielsen Media Research

Acceptance

The younger generation are generally the first to embrace new technology, as the gaming industry is now 30 years old the first gamers are now in their 30's and 40's.

This has resulted in an increase in the broad genres and number of titles available which has in turn, helped draw a more diverse following and broader acceptance of these platforms. It is an interesting fact that the biggest selling game last year almost matched the biggest selling movie for gross revenues. The table below lists the top ten game sales by revenue in the US in 2004[12].

Position	Title	Platform	Author
1	Grand Theft Auto: San Andreas	PS2	Take II Interactive
2	Halo 2	XBX	Microsoft
3	Madden NFL 2005	PS2	Electronic Arts
4	ESPN NFL 2K5	PS2	Take II Interactive
5	Need For Speed: Underground 2	PS2	Electronic Arts
6	Pokemon Fire Red W/ Adapter	GBA	Nintendo of America
7	NBA Live 2005	PS2	Electronic Arts
8	Spider Man: The Movie 2	PS2	Activision
9	Halo	XBX	Microsoft
10	ESPN NFL 2K5	XBX	Take II Interactive

12 Source: The NPD Group, January 2005

Effects On Broadband Services

Asymmetrical V Symmetrical

It is clear that game platforms are making increasing demands on the broadband connection and they are changing the way people use their broadband connections in particular, the ‘upstream’ element.

Traditionally, broadband connections have appealed to customers desire for speedy access to content from the Internet. Data transfer has, for the most part, been 'downstream'. With the exception of email and instant messaging applications there has been little demand for a great deal of 'upstream' bandwidth.

On-line gaming changes this dynamic. Broadband users now require more symmetrical data transport with increasingly large amounts of data being transferred from the broadband user to others on the network.

For example, when using Xbox 'live', the upstream data rates are higher then usual because there is a voice element involved in game play and transmission of game play data. With increasing game complexity will come increasing demands on the upstream path moving the network away from the traditional asymmetrical model to a more symmetrical view.

In other words the broad (and increasing) applications for the Games consoles are increasing data rates especially on the upstream. However, the pressure on the network operators to make changes to their networks is not just limited to games consoles.

Consumer Loyalty

Typically the customer’s choice of broadband provider has tended to be a function of price and availability. It appears that the market (from a U.K. perspective) is going through a price normalisation; network operators cannot keep cutting prices forever. So if all broadband products cost about the same per megabit then customers will be forced to select providers based on a different set of criteria;

- Q.O.S. (Quality Of Service)
- Content (especially unique content)
- Bandwidth (lots of it and the ability to get more)
- Technology (although many will get lost in the jargon)

Conclusion

The choice of Broadband providers (be they network operators or resellers) is huge, even over-whelming at times. The market is increasingly competitive and margins are thin. This amount of choice and constant price-cutting helps breed the agnostic consumer, so loyalties start to align around the content.

Increasingly the demand for content is on-demand and interactive. Games are becoming an important source of content, either as an enhancement to other content offerings or in their own right.

There is increasing pressure on the upstream broadband connection as a result in the increase in on-line gaming and other services such a VoIP[13].

To survive, the broadband service providers will need to address the asymmetrical nature of their product and deliver unique content to ensure medium to long-term consumer loyalty.

Given the nature of the emerging On-Demand culture and the increasing popularity of interactive gaming it is highly likely that a sizeable proportion of that unique content will be games based.

In brief;

- The total market for on-line games will double between 2004 and 2007
- Growth is currently being driven by pay-per-play browser gaming and by massively multiplayer online games (MMOGs)
- Pay-per-play gaming is expected to grow at a compound rate of 40% between now and 2007
- Hardcore on-line gaming remains predominantly a male activity, but growth within the casual gaming market is being driven by women.
- Europe will be the biggest growth market for MMOGs as the US market reaches saturation point.

13 VoIP – Voice Over Internet Protocol.