

Video Gaming Investment Opportunities

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Quick Tutorial – What are Video Games?

- **Display-based entertainment requiring various levels of non-passive user interaction to achieve a particular visual/auditory response inside the game environment.**
- **Video Game History and Environmental Milestones for MMOGs (Massively Multiplayer Online Games)**
 - First patent filed for an “Cathode Ray Amusement Device” by Goldsmith/Mann in 1958
 - First coin-operated, commercially sold video game “Computer Space” released in 1971
 - “Pong” arcade console achieves popularity in 1972, as well as a text based mainframe program: “Hunt the Wumpus”
 - “Adventure” appears in 1973 on the DEC PDP-10; the first computer adventure game
 - “Maze War” introduces First Person Shooters “FPS” late 1973; the first documented game with a 3D perspective and “Avatars” representing players inside the game environment
 - “MUD” The first Multi-User Domain/Dungeon written for mainframe computers by Will Crowther in 1978; a precursor to MMOGs
 - Popularization of the personal computer drives the gaming industry toward enhanced graphics/more complex player experience in the early 1980s
 - In 1986, Kesmai’s “Air Warrior” becomes the world’s first online multiplayer game using the GENIE network and cost users \$10/hr. to play
 - ISPs Compuserve, AOL, Earthlink and others picked up the “Pay to Play” model with similar MMOG offerings
 - AOL debuts “Neverwinter Nights,” the first graphically intense fantasy based MMORPG (RP addition to the acronym is Role Playing)
 - ID Software releases “Doom,” an immersive 3D FPS in 1993 as shareware; an estimated 10 million people download it in the next 2 years
 - “Meridian 59” becomes the first real-time 3D MMORPG in 1996; “The Realm Online” and “Ultima Online” quickly follow and achieve subscribers in the tens of thousands
 - “Ultima Online” is the first to reach 100,000 subscribers, far outpacing the competition and paving the way for future MMORPGs
 - RMT “Real Money Trade” for goods in virtual economies garners attention from the Financial Times in 2003,
 - Linden Lab’s “Second Life” is released in 2003 and actively facilitates RMT; Anshe Chung became the first real-world millionaire based on her efforts in this virtual economy
 - CipSoft’s “TibiaME” is the first MMORPG for mobile devices is released in 2003
 - 2007, “EVE Online” sets a record for the most concurrent accounts online using a single server: 41,690
 - 2007, World of Warcraft active accounts break 10,000,000

Quick Tutorial – Primary Delivery Platforms

- **Console/Arcade: Coin-op Arcade Games, Nintendo, Playstation, Xbox, Wii, PSP**
 - 8 Purpose-built gaming platform with custom hardware and specialized software
 - 8 Sometimes network aware (Common with newer generations), Usually non-reoccurring “pay to play” or purchased once
 - 8 Usually one to four players
 - 8 Usually has game-ending objective
- **Personal Computer/Personal Computing: Simulators, Realtime Strategy, Puzzle, Sports, Adventure**
 - 8 Low to high-end computer or mobile device which has other non-entertainment value
 - 8 Usually network aware, Sometimes requires network connectivity, Usually purchased once
 - 8 Often single player, Sometimes multi-player,
 - 8 Usually has game-ending objective
- **Online: “Browser Only” Flash-based games, Online Poker/Chess**
 - 8 Low-end computing required for lightweight game
 - 8 Network dependent, Usually free
 - 8 Single and multi-player offerings common
 - 8 Usually has game-ending objective
- **MMOG: “Persistent” Gaming Worlds (Anarchy Online, EverQuest, Runescape, World of Warcraft)**
 - 8 Currently requires more sophisticated computing platform to support graphical environment
 - 8 Network dependent, Usually includes a monthly or bi-monthly fee, Low-end offerings sometimes free
 - 8 Evolving storylines and economies emphasize multi-player aspect of gaming, Thousands usually on at the same time
 - 8 Does not include game-ending objectives

Presentation Objectives

- Review the constantly evolving video gaming market
- Identify national and international demographic, technology, and usage trends
- Discuss investment opportunities in these markets

Trident Capital

- **Founded in 1993**
- **Offices in Palo Alto (HQ), Westport CT**
- **Six funds, \$1.5B under management, \$400M most recent fund**
- **Mustang Ventures: \$50M, early-stage focus, Shanghai-based fund**
- **IT focus, stage agnostic, geography agnostic**

Gaming Market Summary

Large market with opportunity for growth in emerging sectors

- **Video gaming is a \$27B industry WW (\$10.5B in US, \$7B software)**
 - US gaming software market forecast to experience ~10% CAGR between 2005-2009
- **Traditional model reaching maturity, but emerging sectors show strong growth**
 - Console hardware and games driven by generational hardware changes
 - New revenue sources growing quickly, driven by increasing dominance of connected, online gaming on multiple platforms
 - 8 New sources (downloads, in-game advertising, mobile) forecast to be 15% of industry revenues by 2010

Growing delivery footprint

- **New array of delivery platforms create new business opportunities, revenue models**
 - Traditional value chain of developers, publishers, retailers evolving in mobile, online spaces
- **Increased array of devices with broadband access capabilities driving evolution**
 - Consoles: 3rd gen consoles (ie, Xbox360, PS3) offer online play, subscriptions, downloads
 - Online gaming seeing significant user adoption
 - 8 Massively Multiplayer Online Games (MMOGs) showing tremendous revenue growth
 - 8 Casual player friendly
 - Mobile: increasing device capabilities and consumer adoption drive casual/advanced gaming
 - IPTV: new set-top and network capabilities allow multi-media gaming experience (linking TV content to other gaming content, interactive play, casual gaming)

Diversifying customer base and title appeal, especially overseas

- **Gaming not limited to “traditional” audience of 18-34 year old males playing “shooter” titles**
 - 65M gamers in the US, 10M considered “hard core”
 - In 2005, 69% of US heads of households played computer or video games
 - 8 Average game player age is 33, with 25% over the age of 50
 - 8 More women 18 or older played games than boys 6-17 (30% vs. 23%)
- **Increasing leadership of “highly-wired” countries in Europe and Asia (especially China and South Korea)**

Gaming Opportunity Summary

Business model evolution

- **Traditional “shrinkwrapped” retail business model starting to be eclipsed**
 - Huge up-front development costs, lead-times increasingly unsustainable
 - Console and PC markets reaching maturity, while online, mobile and TV grow rapidly
- **Replaced by recurring revenue streams and ancillary revenue opportunities**
 - **Successful MMOGs have tremendous cash flow (1 mm subs x \$10/mo =...)**
 - **Adjacent businesses enable diversification, increased lifetime customer value**
 - 8 In-game advertising
 - 8 Downloadable content
 - 8 “Virtual exchanges”
 - 8 Multi-title subscriptions

Software engineering vs. traditional artisanship

- **Traditional full-custom approach to development starting to give way to third-party tools, engines**
 - Driven by greater expense of game development and need for rapid production of quality content
 - Resembles transition of enterprise software to reusable components, extensible architectures
 - 8 “Engineering” mindset vs. “artisanship”: software tests, QA process, open architectures, etc.
- **Potential outsourcing opportunity**
 - Seeing portions of development process—testing, animation—move overseas

Technical challenges starting to mirror enterprise SaaS evolution

- **Largest online games pose substantial technical, scalability challenges**
 - World of Warcraft: 10 mm subs (\$15/mo); Salesforce.com: 440K (\$65/mo)
- **New set of large-scale systems competencies required**
 - Gaming companies traditionally lack such expertise, as development was focused on consoles, PC platforms with no online interactivity
 - Opportunity to create new generation of tools, middleware, service providers

Key Investment Risks

- Technology Adoption** • **Gaming companies have traditionally been reluctant to adopt 3rd party technology**
 - Strategy: seek technologies with track record of successful customer adoption solving problems gaming companies are ill-equipped to tackle themselves
- Title Risk** • **The key risk in game development is the success of the title itself: for every success there are dozens of failures**
 - Strategy: Avoid backing individual titles or concepts for which creative talent of team is sole differentiator
- **Online consumers can be fickle in their adoption of particular genres, games**
 - Strategy: Seek “enabler” businesses that arm the developers and publishers with tools for monetization across a platform of properties; avoid being tied to one particular technology platform or genre
- Startup Teams** • **Gaming has long been a unique subculture within software development; many teams don’t think like enterprise software management teams**
 - Strategy: Seek enterprise-style management teams that are looking to build real businesses and that have strong track records/industry networks
- Exit Strategy** • **Few traditional gaming software companies are public; acquisitions have often been for content franchises/teams**
 - Strategy: Seek opportunities that are more similar to successful enterprise models with potential acquirers— development tools and platforms, online advertising, etc.

Gaming Value Chain (Draft)



Activities

- | | | | | |
|---|--|--|--|---|
| <ul style="list-style-type: none"> Provide inputs (labor, technologies) to game developers | <ul style="list-style-type: none"> Create game content: concept, characters, plot, art, sound, gameplay, etc. | <ul style="list-style-type: none"> Traditional: funding, production oversight, QA, sales and marketing Casual: developer itself; becoming aggregators? | <ul style="list-style-type: none"> Builds portfolio of games from publishers, developers. Makes available for distribution through partnerships | <ul style="list-style-type: none"> Sell games or subscription content to end users Traditional games and hardware sold through retail channels New generation and casual games sold online |
|---|--|--|--|---|

Business Model

- | | | | | |
|--|---|--|---|--|
| <ul style="list-style-type: none"> Outsourcing: T&M, project-based Tools: SW licenses, runtime royalties, hosting fees | <ul style="list-style-type: none"> Hits-driven Primarily per-unit royalty/ margin from retail sell-thru | <ul style="list-style-type: none"> Fund and manage development, margin from sell-thru | <ul style="list-style-type: none"> Similar to offline: markup passed along to retail channel over wholesale cost | <ul style="list-style-type: none"> Similar to offline: attract consumer traffic and drive purchases |
|--|---|--|---|--|

Source of Value

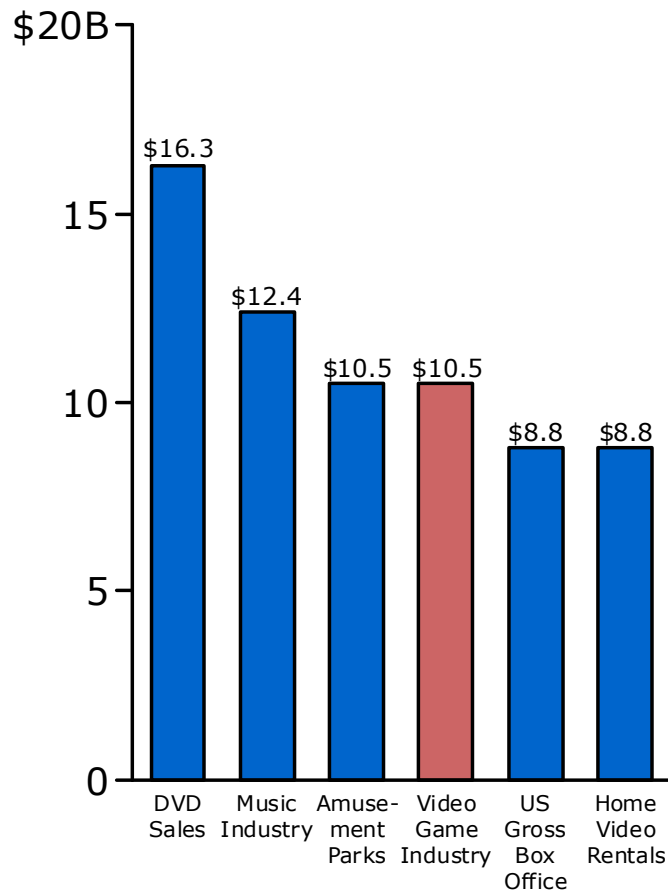
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|---|---|--|---|--|
| <ul style="list-style-type: none"> OS: Process/reln's Tech: IP/features, service capabilities | <ul style="list-style-type: none"> Creation or licensing of IP: characters, stories, game play | <ul style="list-style-type: none"> Picking hits Relationships w/content, distributors Brand | <ul style="list-style-type: none"> Aggregation of unique content Publisher/ distributor relationships | <ul style="list-style-type: none"> Consumer brand Merchandising mix of content |
|---|---|--|---|--|

Representative Companies

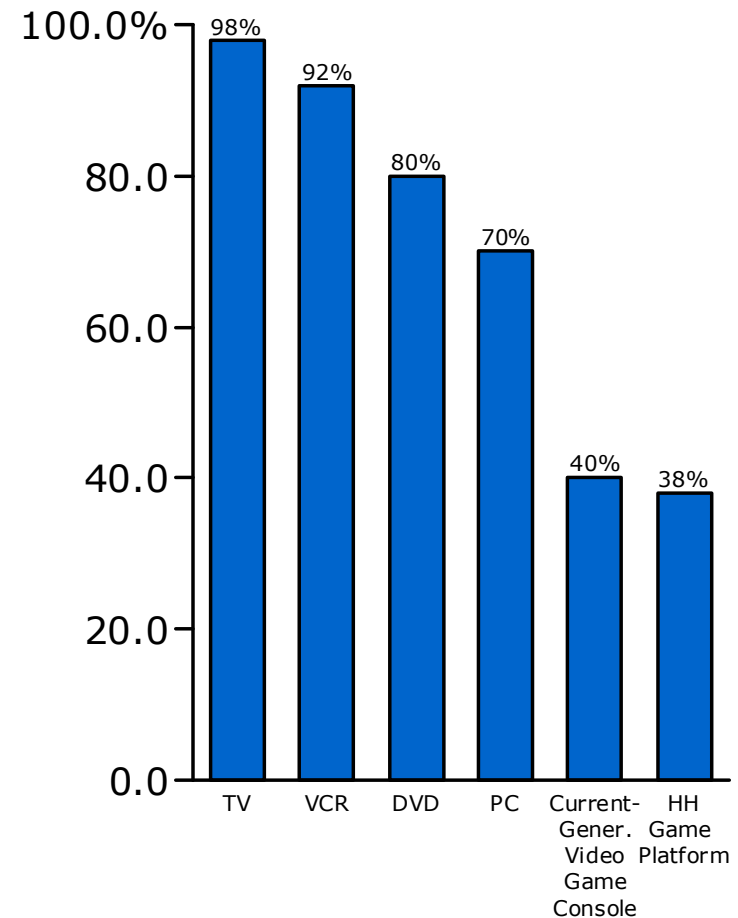
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|---|--|--|---|--|
| <ul style="list-style-type: none"> Epic (Unreal), Emergent, etc. | <ul style="list-style-type: none"> Traditional: Epic, Valve, Bioware, Cryptic, Blizzard, etc. Casual: gameLab, Large Animal Games, Skunk Studios, etc. | <ul style="list-style-type: none"> Traditional: ERTS, ATVI, TTWO Casual: PlayFirst | <ul style="list-style-type: none"> Oberon Media, TryMedia (MVSN) Casual: PopCap Games | <ul style="list-style-type: none"> Traditional: Gamespot, BBUY, WMT Casual: RNWK, Shockwave, YHOO, AOL, MSFT |
|---|--|--|---|--|

US consumers show substantial expenditures on video gaming and adoption of video gaming devices

2005 Consumer Expenditure



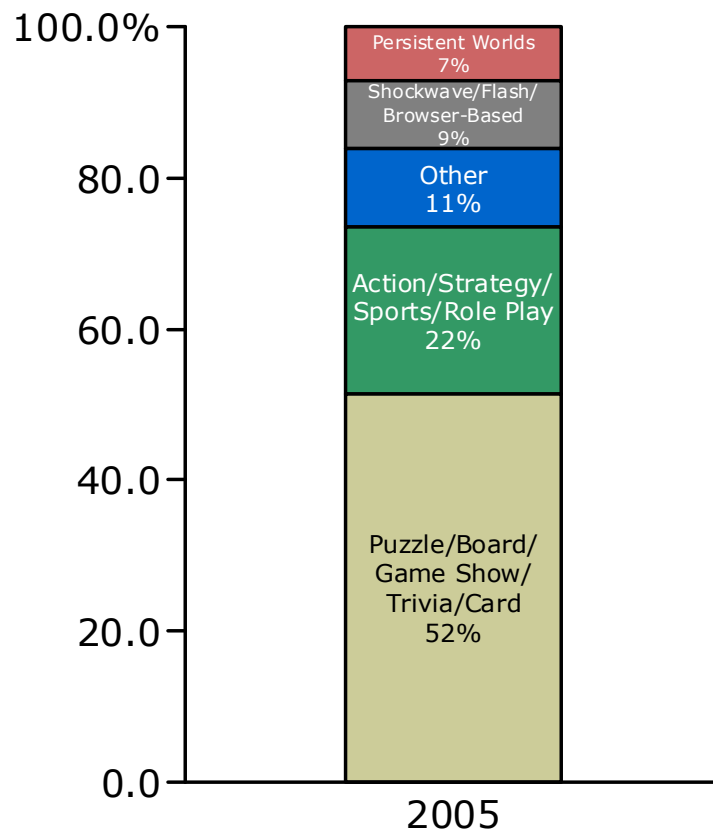
2005 Consumer Adoption Rates



Source: "The Video Game Industry," Piper Jaffray Equity Research, April 2006, p.6, 13

Online gaming shows broader adoption than traditional video game segment, especially among casual gamers

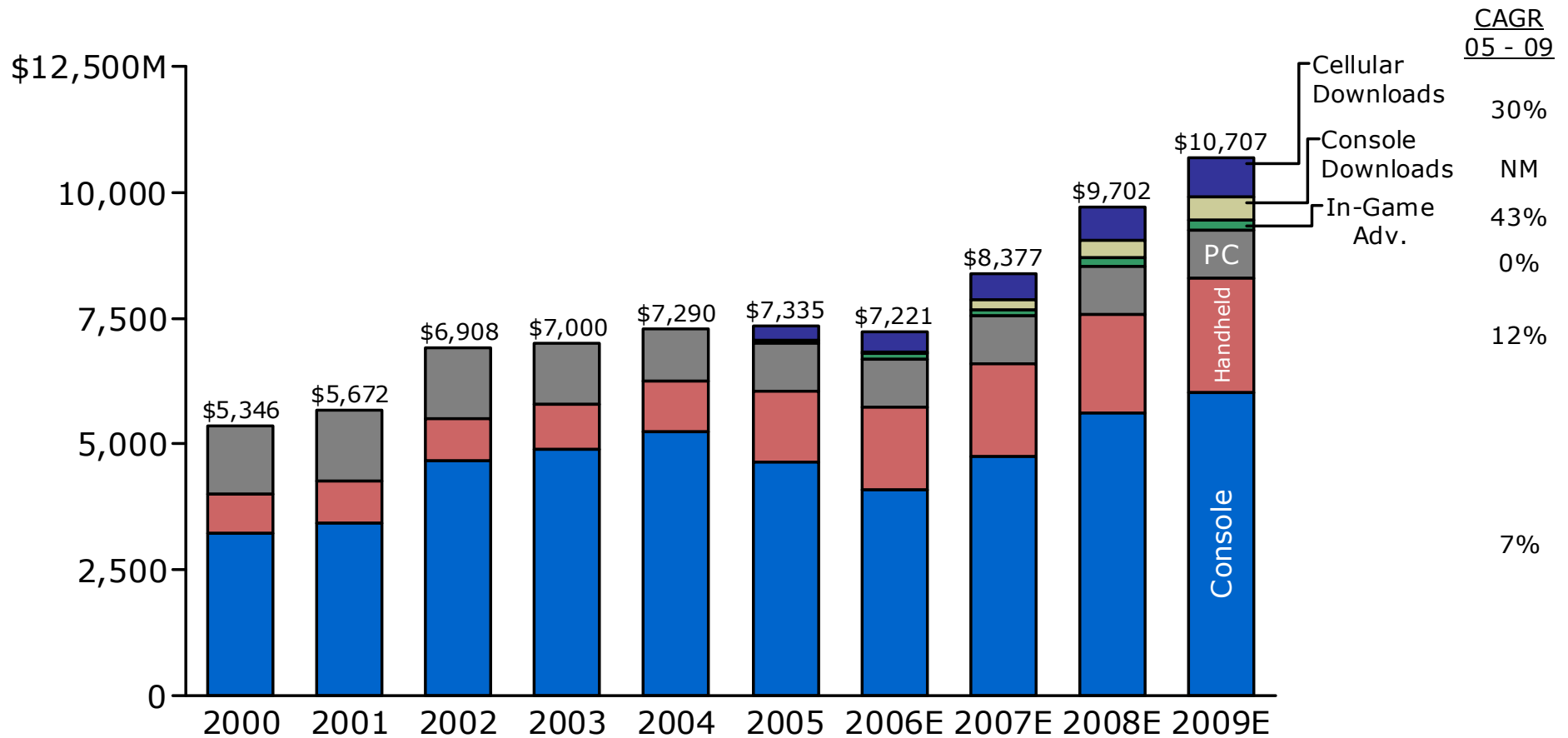
Games Played
Most Often Online



- **Online and wireless games show increasing adoption**
 - 44% of most frequent game players say they play games online, up from 19% in 2000
- **Online gamers more evenly split between male and female**
 - 58% of online game players are male, 42% are female
 - Console and PC skew more heavily male
- **Increasing adoption on wireless devices such as a cell phone or a PDA**
 - 32% of heads of households report playing games on these kinds of devices
 - Represents an over 50% increase from 2002, when only 20% reported doing so

New revenue sources show greatest growth as traditional sources mature

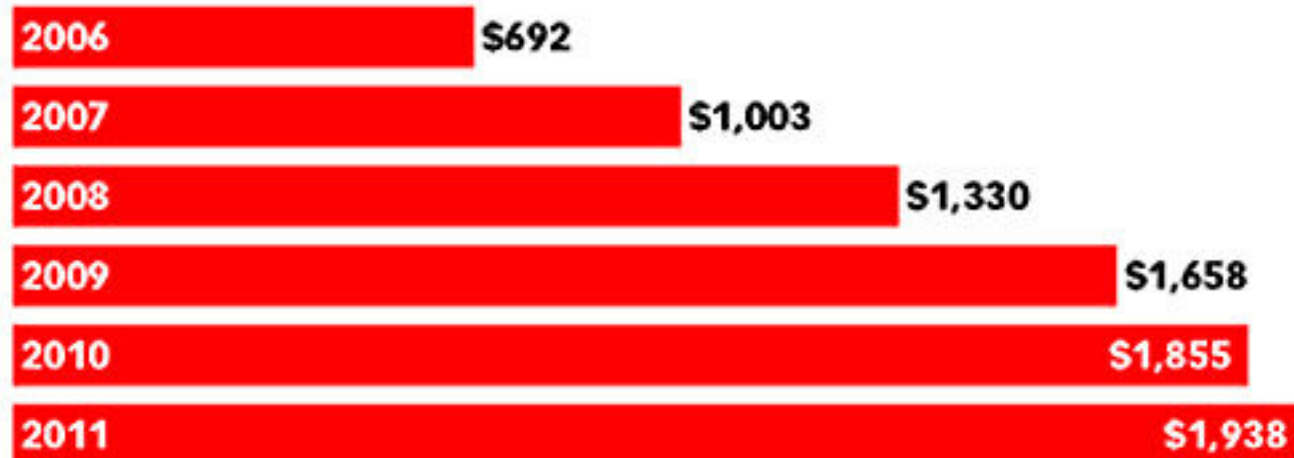
Estimated Software Sales (\$M)



Source: "The Video Game Industry," Piper Jaffray Equity Research, April 2006, p.24

In-game advertising will become a viable business model, particularly for MMOGs and casual games

Worldwide Video Game Advertising Spending, 2006-2011 (millions)



Note: includes static, dynamic and rich media in-game ads; product placement/integration and advergaming; excludes mobile games

Source: eMarketer, April 2007

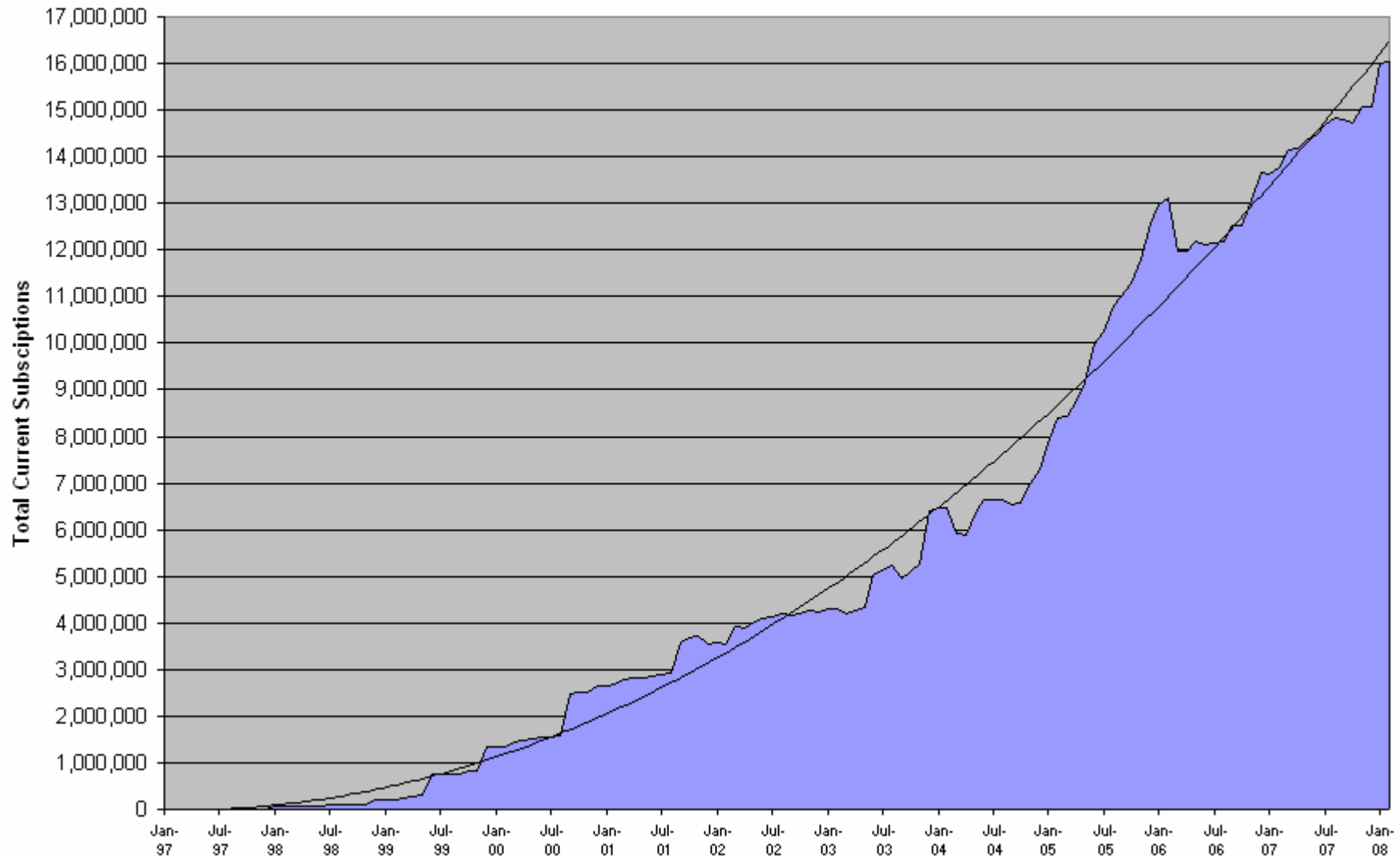
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www.eMarketer.com

In particular, MMO games experiencing substantial subscriber growth—doubling since July 2004

Total MMOG Active Subscriptions

$R^2 = 0.9858$

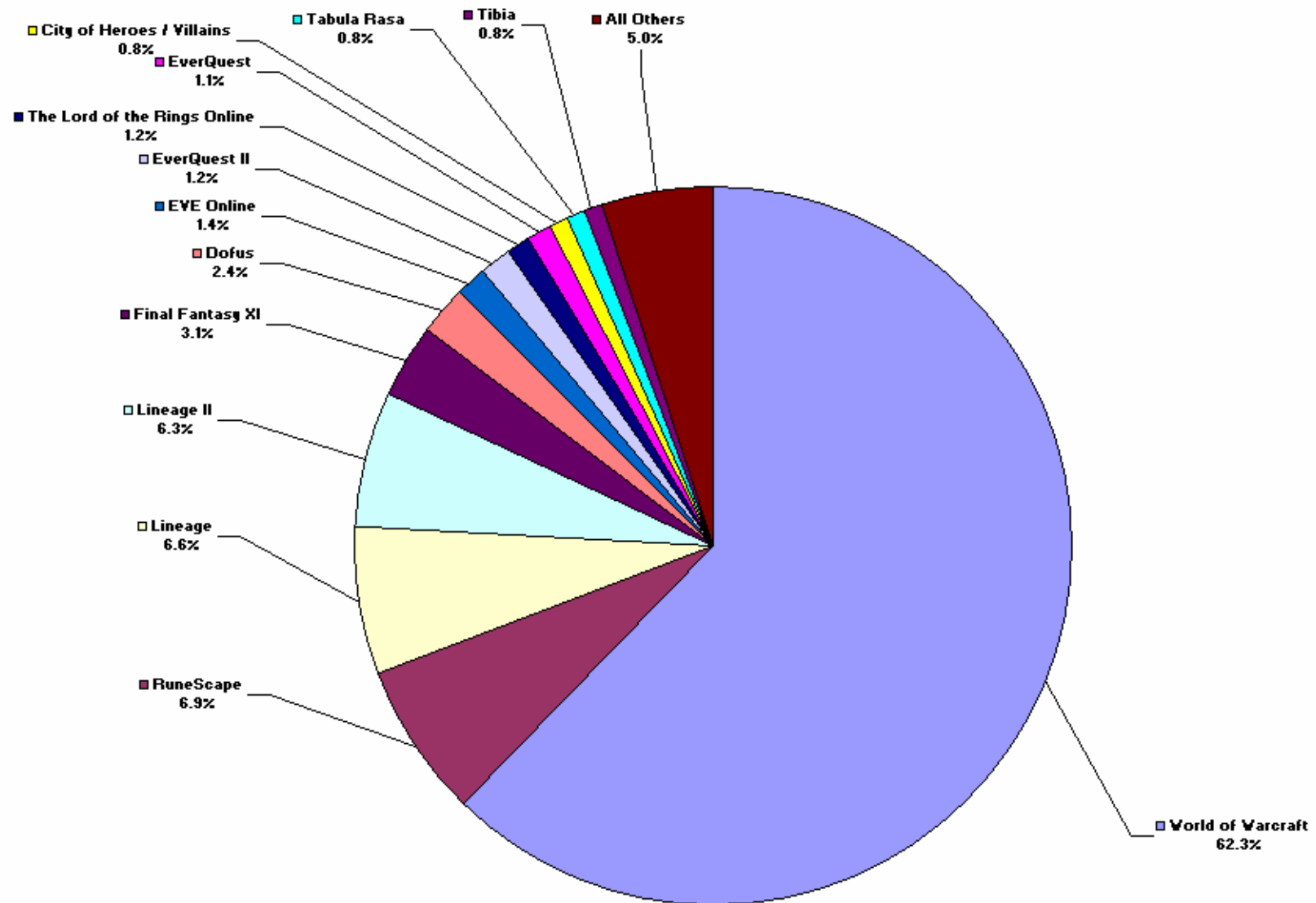


Source: MMOGChart.com

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World of Warcraft dominates MMOG market, now generating almost \$100M/month in subscriptions

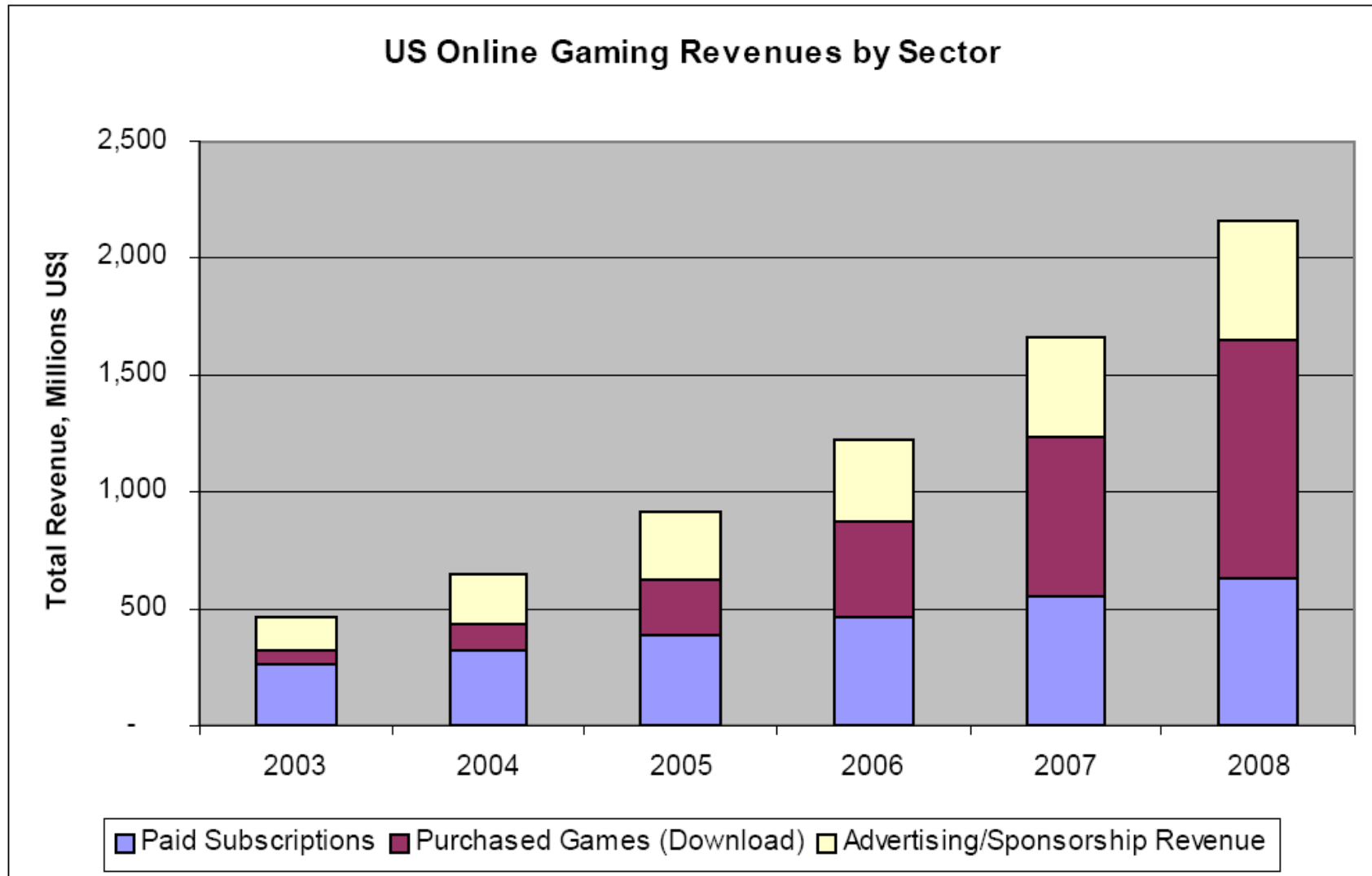
MMOG Subscriptions Market Share - February 2008



Several trends indicate potential for increasing adoption of online gaming...

Market Force	Impact	Accelerator/ Inhibitor/ Neutral
Increased Investment in Online Gaming	High. Publishers, Portals and Developers have greatly increased their investments in the space in the past few years, and a large number of new entrants are propelling the market forward with new content and distribution.	↑
Consumer online usage continues to rise	High. The continuing shift of consumers spending more time online versus other forms of passive entertainment like television and music. Additionally, increased broadband penetration specifically helps downloadable games.	↑
Consumer Comfort with Gaming Increases	Moderate. As non-gamer consumers increase their gameplay, they become progressively more comfortable with gaming, increasing the future likelihood that they will try a gaming product from a trusted source.	↑
Developers creating new forms of games and introducing licensed games	Moderate. The development of new and unique game types, modes of play and genres will increase the addressable market opportunity. Examples include adult or mature themed titles (Leisure Suit Larry) and Core/Casual combinations (Ricochet)	↔
Core-Casual Crossover	Moderate. Increased game availability, regardless of genre, raises consumer awareness and willingness to try games online. This allows for demographic shifting and cross-promotion.	↔

...translating into substantial growth in US online gaming revenues in coming years

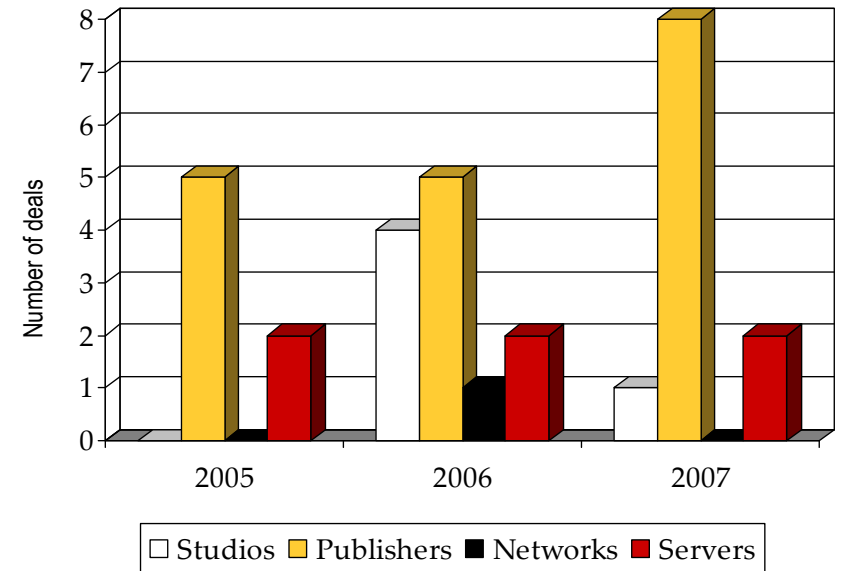
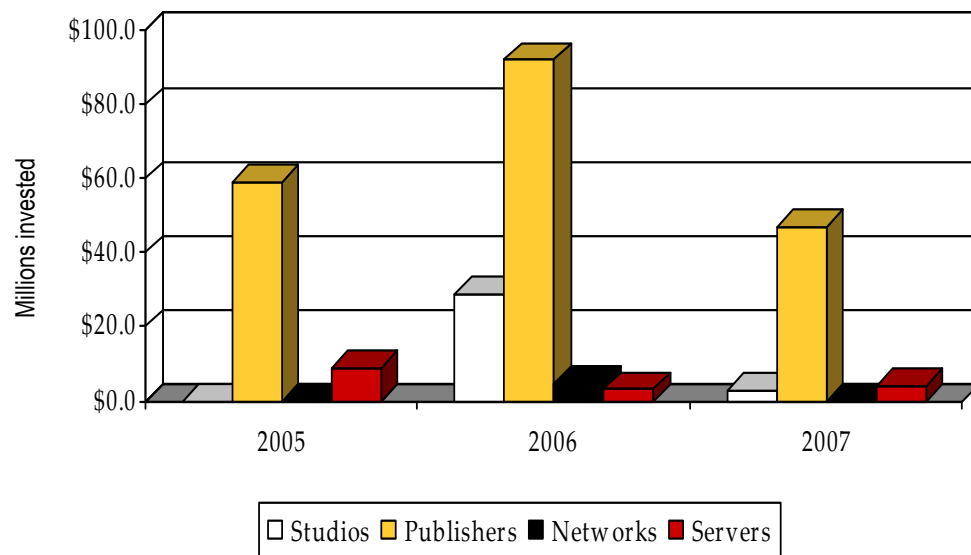


Source: *US Online PC Gaming Forecast & Analysis, 2004-2008: Growth Continues*. IDC, Schelley Olhava, Dec 2004.

Source: IGDA Casual Games Whitepaper, 2005, p.14

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Venture capital activity in the MMOG sector



Our interest in MMOGs is driven by

- **Nascent market whose audience is doubling YOY since 2004.**
- **With the exception of World of Warcraft (WOW) there is no other dominant MMOG. This implies that there are plenty of opportunities to create new market leaders.**
- **Contrary to other forms of games, MMOGs provide ample opportunity for great user involvement, creation of user-generated content, and tie-ins to other forms of entertainment.**
- **Once they are set up properly MMOGs have low operating costs resulting in strong operating margins.**
- **The recent IPOs of Chinese MMOG publishers and operators have demonstrated that the market is able to reward well-performing MMOGs companies.**

Gaming investment theses and opportunities

- **MMOGs will revolutionize broadband entertainment and will appeal to a variety of demographics and ethnic groups. We are looking for**
 - MMOG operators that offer free play and charge i) for virtual goods, and ii) subscriptions for extra services and higher levels of game-play.
 - In established markets, such as US, Europe, and parts of Asia we are looking to invest in expansion and later stage companies whose games have at least 500K active users and demonstrated revenue.
 - In newer markets such as India and Eastern Europe we are looking for early-stage companies whose games take into account geographic and ethnic characteristics.
- **The proliferation of MMOGs and virtual worlds will necessitate the creation of robust infrastructures and gaming ecosystems. We are looking for early and expansion stage companies that range from marketplaces, to gaming portals, and data centers that offer on-demand computing services to MMOG operators.**
- **The worldwide adoption of 3G mobile devices will enable the migration of MMOGs and persistent-world games to such devices. We are looking for publishers and distributors of such mobile games.**

Gaming company landscape (partial)

Graphics Tools	Game Engines	Middleware	Studios	Publishers	Distributors	In-Game Advertising
Axiom	Unreal 3 (Epic)	RenderWare	EA	EA	Atom (MTV)	Massive (Microsoft)
Ogre	Source Engine	Gamebryo	TTWO	TTWO	GameTap	DoubleFusion
Power Render	RenderWare	Havok (physics only)	ATVI	ATVI	Boonty	AdEngine (China)
Crystal Space	Gamebryo (Emergent)	RAD Game Tools	Trilogy	Ubisoft		IGA Worldwide
Genesis3D	NetImmerse	BigWorld	Cryptic			Engage
		Multiverse	Radware/Bioware			Greystripe
			Telltale Games	Codemasters		
			Codemasters	K2Network		
			There			
			Blizzard Entertainment	Blizzard Entertainment	Blizzard Entertainment	
			Gaia Interactive	Gaia Interactive	Gaia Interactive	
			Habbo Hotel	Habbo Hotel	Habbo Hotel	
			WeeWorld	WeeWorld	WeeWorld	
			LindenLab	LindenLab	LindenLab	
			Funtactix	Funtactix	Funtactix	
			PlayFirst	PlayFirst	PlayFirst	
			Beachware	Beachware	Beachware	
			Big Fish Games	Big Fish Games	Big Fish Games	
			Vendare Media	Vendare Media	Vendare Media	
			Frogtoss Games	Frogtoss Games	Frogtoss Games	
			PixelPlay	PixelPlay	PixelPlay	
			PlayActive/LavaMind	PlayActive/LavaMind	PlayActive/LavaMind	
			Snowstep Development	Snowstep Development	Snowstep Development	
			xBlitz Entertainment	xBlitz Entertainment	xBlitz Entertainment	
			Mdigo	Mdigo	Mdigo	
			Valve	Valve	Valve	
			WildTangent	WildTangent	WildTangent	
			Skyworks	Skyworks	Skyworks	



Online and casual gaming have collapsed many of these categories as studios distribute and sell their own games online