



2005 Casual Games White Paper

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FORWARD

When the Online Games Special Interest Group (SIG) was formed in 2000 and 2001, few people seemed to understand or really care about the casual games market. Coverage of the casual online games industry at the Game Developers Conference was minimal. Since then, the size of the industry and the number of web sites offering Web and Downloadable games has exploded. Internet and broadband penetration has been growing rapidly in the US and worldwide enabling a larger audience to access and play casual games that are richer in graphics and game features. The dominant business model in 2000 for targeting the casual games audience was offering free online games that were monetized by advertising and sponsorships. Fast forward to today and one sees a casual games market with a number of business models: fee-based downloadable games, premium online subscription services, skill-based gaming, advergaming and free game play supported by video advertising and sponsorships. Today, revenue from selling casual downloadable games is arguably the largest driver of revenue in the industry. Web games are either standalone games or they are used as quick access online demo games to encourage users to download, play and buy the offline version.

Who is the casual online games player? The answer is everyone. Even though market research shows the majority of the audience today is women 30-45 years old, one can see all ages and gender playing online games and buying downloadable games from young males playing casual sports and arcade games to seniors playing online bridge. Casual game players play these types of games as they seek diversion, socialization and competition.

This paper is the result of work from more than 30 contributors, each of whom freely volunteered their time and expertise to create this document. We have updated and built upon the previous three annual white papers covering this industry. Our contributors have written about the overall marketplace, the various business models, and the technologies being used by developers today. They have gone beyond the catalog of publishers we have had in the past, and this year give us an overall perspective of the publishing space, as well as an in depth look at several of the key players. One section of the white paper that we expanded this year is to help game developers better understand how they can bring their games to market. We sent a questionnaire to the leading publishers and distributors in the Web and Downloadable games industry so that they could communicate to developers their particular business focus, the mix of services they provide, and the best way for developers to approach them.

This is truly a paper that was created for the industry, by the industry. Although this paper could not have been created without the efforts of all our volunteers, we would like to specifically thank Kirstin Ohm and Kayvaan Ghassemieh for their time in helping us edit and revise this paper from the work of many individuals, into the single cohesive report we now present to you. In addition, we want to highlight Shelley Olhava of IDC who generously shared her insight and data in the market overview section. Lastly, Steve DeBenedictis also deserves special mention for all of the effort he has put forth helping organize, plan, and execute this project from the very beginning.

The IGDA Online Games SIG has ongoing efforts in numerous aspects of the online games industry. All of our projects depend on the time and efforts of our volunteers. If you'd like to give something back to the community, please volunteer to participate. You can start by visiting our website at <http://www.igda.org/online> and reviewing all the white papers and other activities in which we are involved in the gaming industry. You will find a white paper on the Mobile Games industry as well as one on the Persistent Worlds industry.

One final important note to share with our readers is the creation of the Casual Games Special Interest Group (Casual Games SIG) which was formed in July 2005 by International Game Developers Association (IGDA). The Casual Games SIG is dedicated to serving game developers worldwide by offering an independent and balanced resource for those interested in this emerging market force. This paper marks the first publication coming from the Casual Games SIG. Casual game developers from around the world and those interested in this burgeoning market segment are invited to visit the Casual Games SIG website at www.igda.org/casual for related resources and information about the IGDA.

On behalf of the contributing writers and the other members of the Steering Committee of the IGDA Casual Games SIG, we thank you for your interest in our White Paper. This White Paper is available for download at no charge courtesy of the IGDA and the Casual Games SIG via the IGDA website, at <http://www.igda.org/casual>.

With best regards,

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I. Introduction

A. Background and Purpose

Many of the challenges in creating and distributing successful Web and Downloadable games are unique to the internet game distribution model, which often demonstrates significantly different rules and parameters than the traditional (console or PC via CD-ROM) video game distribution model. This white paper provides a snapshot of the current state of the industry and provides information to developers and related parties. This paper is intended to serve as a resource for these parties: to share knowledge and provide guidance for more successfully developing their businesses.

B. Audience and Scope

This white paper is specifically focused on providing valuable, hard-to-come-by information to small to medium-sized Web and Downloadable game developers. This white paper should also prove interesting to anyone who wants to learn or read about the Web and Downloadable games industry. Included are: information on the market, business models, technologies, publishers, legal constraints and ideas relating to the business of Web and Downloadable games.

It should be noted that there are a few massively multiplayer online games (MMOG's) that fit into the category of a Web and Downloadable games. While these games technically meet our definition of web-based games, we felt that many of their qualities make them more similar to persistent world games, which are discussed in another white paper from this SIG. As such, these games and their specific issues are completely ignored in this paper.

C. Definitions

We use a common definition set for this white paper that closely, if not identically, mirrors industry definitions:

Downloadable game: A "small file" game, typically less than 15MB, that is downloaded from a web site or peer-to-peer network, is installed on a user's computer, and thereafter runs as a standalone executable – with or without Internet access. The current business model dictates that these games often have a trial mode, with the option to purchase the full version for unlimited play. Examples of downloadable games can be found on almost every online gaming site or games channel on the major portals. This category does not include demos of video games or PC traditional large-format game titles that are primarily sold through retailers. This category does include titles that are primarily available for download, even if the game is additionally distributed on CD-ROM.

Web game: A game launched via a web page with no prior installation of software required. This category does not include games that are downloaded to the user's hard-drive and run outside of the web-browser, but it does include games launched from a web page that might require/installation of a general or custom ActiveX control. Common examples of this are the Flash™, Shockwave™ and Java™ games found on thousands of websites, as well as C++ games delivered via a custom ActiveX control.

Skill game: A web game played for money or prizes, which are won based on skill because the elements of luck have either been eliminated or greatly reduced in the game.

Advergame: A web or downloadable game where the primary objective of building it is to deliver advertising messages, drive traffic to web sites, and build brand awareness.

Traditional game: A game developed for and delivered on a dedicated game console (set-top or handheld) as well as PC-based CD-ROM or DVD games sold at retail.

D. Disclaimer

This work was created and written by volunteers on behalf of the community at large. The white paper content is based on the individual input of the contributors, and does not necessarily reflect the opinions or policies of the companies at which the individuals work. There may be inaccuracies and information that has become outdated since this white paper was originally written. The information was obtained from publicly available sources, including company websites, company annual reports, SEC filings, news sites dedicated to games and analyst reports (with express permission).

This information is intended strictly for informational purposes. If you include it in a business plan or any business process, you are responsible for its use and any successes or failures resulting from this report.

If your company bio is incorrect, or if you feel we've missed something, we apologize! Please visit the IGDA website now to see how to get involved next year, and help us set the record straight!

Reproduction of this document in whole or part may be done without written approval but must reference this document as a source and display the following URL as the location to obtain the full report: <http://www.igda.org/casual>. Thank you!

II. Market Overview

A. Introduction

In the past, Web and Downloadable games were thought to be distinct from traditional computer box games because of the delivery mechanism: played via a web browser or downloaded from a website. However, a game purchased on a web site is not necessarily different from a game obtained through other channels. Rather, a person is simply going to a web site to acquire a game. Even though some of the game code may reside on a web site, the consumer experience is not different from playing a game that was originally obtained in a store and has an online component to enrich the playability. The only component that is different is the delivery mechanism.

In the past, Web and Downloadable games tended to be technically inferior and could not provide the same complexity of experience as games bought in stores for PCs or consoles, and were thus classified differently (and negatively). This gap is closing rapidly with retail box products, and the differentiation nowadays seems to be the focus of the design, not the technology: namely, to design for the modern Internet customer who enjoys the emotions of game play but demands a more accessible experience.

Consequently, the market is seeing retro arcade games, new games inspired by retro games, card and board games, puzzle games, and the like. These new breeds of games are often collectively referred to as “casual games” because it is possible for the casual consumer to pick them up and learn to play quickly. However, the term “casual” doesn’t accurately depict that these games can prove quite addictive and can deliver the same 50+ hours of entertainment provided by console games. There is nothing “casual” about this level of loyalty, commitment and enjoyment, just as there is nothing “casual” about the market opportunity and market demand for these games.

1. Web Games vs. Downloadable Games – The Differences

Just as Web and Downloadable games differ from traditional video games, there are also differences between Web games and downloadable games, as outlined in the table below.

Web Game Attributes	Downloadable Game Attributes
Optimal file size <500k	Optimal file size <10MB
Plays in a browser window	Plays as a stand-alone application
Technological choices limited	Unlimited technological choices
Hardware independent	Hardware dependent
Online only	Primarily Offline
Single and Multiplayer	Single player
Online community can greatly help retention	Online community is usually minimal to none
Can be monetized by online advertising/sponsorships	Monetized directly through game purchase
“Open” distribution	A few big channels matter most
Very high traffic is usually key to success	Focused, highly qualified traffic critical
Compelling gameplay is primary success factor	Production value + compelling gameplay
Card/casino games have strong demand	Card/Casino games have weaker demand

2. Web Games vs. Downloadable Games – The Similarities

- ?? The primary distribution vehicle is the Internet
- ?? Audiences may be relatively inexperienced with traditional video games
- ?? Successful games have extremely broadly appealing designs and are evergreen (high replay value)
- ?? Successful games are extremely accessible and intuitive
- ?? Some game concepts work well in both mediums

Downloadable games are newly being considered comparable to traditional video games. A number of factors have eliminated many of the technical hurdles that users previously faced in trying to achieve gaming experiences similar to those achievable with traditional video games. This has become evident in

that as retail stores have shrunk, many publishers and distributors have made games available via the Web and Downloadable formats.

B. Target Audiences

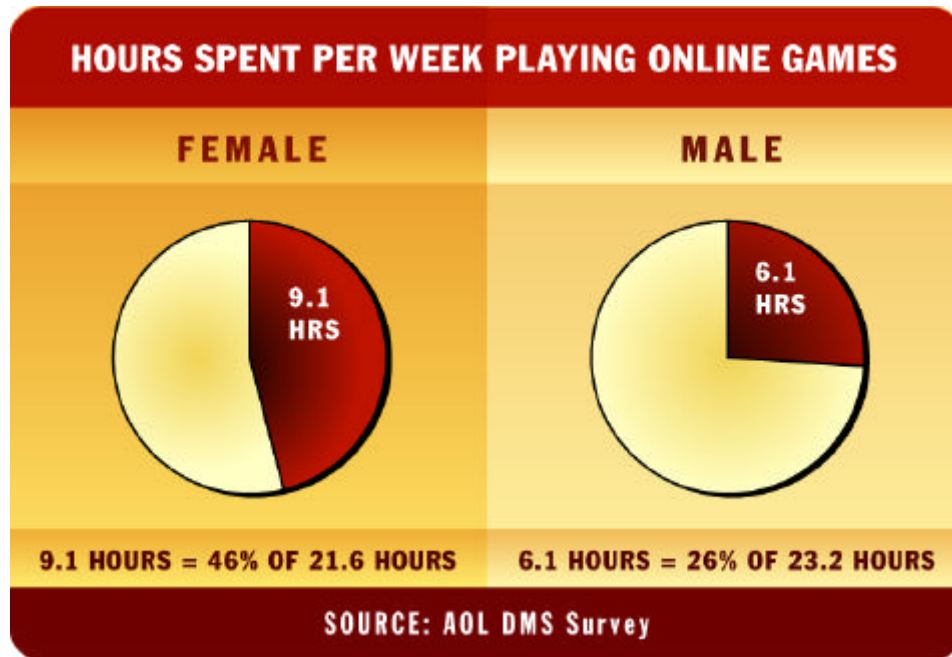
Three distinct audience segments have been identified for PC games: the casual audience, the core audience and the hardcore audience. While the delineation between each audience segment is not strict, and is defined slightly differently across the industry, the definition below is used throughout this white paper.

	Casual	Core	Hardcore
Demographics	Skews female and older (35+)	Split gender, average age 25-35	Mostly male, skewed younger (<35)
Example Games	Bejeweled, Hearts	Roller Coaster Tycoon The Sims	Halo, Half-Life
Gameplay Habits	Long online play periods, often divided into small game sessions. Pick up and drop games multiple times per day. Community and competition are key drivers for multiplayer games.	Driven primarily by titles, may play a single game for long periods of time, typically single-player. Community may be important.	May purchase many titles per year (10+), playing games as primary form of entertainment. Community often unimportant.
Preferred Genres	Word, Puzzle, Card	Simulation, Racing, Education	Action, Strategy
Primary Distribution Channel	Online	Retail (some online)	Retail
Share of Total PC Gaming Revenue	10%	60%	30%

Although the general expectation is that consumers may shift over time from one category to another, there have been very few studies on category “drift” among gamers. It is very unlikely that casual game players – who are mostly women 30-45 – also play hardcore PC games like Halo. However, it is known that hardcore game players do play casual games such as Poker.

The demographics of casual game players show that a unique set of constraints exists for game projects. Constraints include catering projects to: players with a wide range of computer skills; players who may not be familiar with game genres; and, players who are accustomed to user interface conventions from the traditional retail market. The play patterns of each audience segment vary dramatically, with some female players over the age of 40 spending upwards of 9 hours per week playing online games¹. This average play time is much lower than hardcore gamers’ title play commitment near release, but is much higher than the mass-market retail gamers’ average play time.

¹ AOL Press Release, “New Study Reveals That Women Over 40 Who Play Online Games Spend Far More Time Playing Than Male or Teenage Gamers,” 2/11/04.



While the demographics of Web and Downloadable games can vary greatly from genre to genre and even from game to game, the largest audience is women aged 35 to 45. Gradually, the number of men playing casual, online games is increasing, but today's market reality requires a focus on women.

A wide variety of users now see the Internet as a primary entertainment medium, and Web and Downloadable games comprise a main staple of the web's entertainment value. As this audience for online content grows, so does the amount of money spent in the space: In 2004, online game sales grew over 100% from 2003 levels, making online gaming the fastest-growing category of entertainment products^{2 3}.

Clearly, growth in the market shows that gaming is no longer reserved for male hardcore players, and that it is only a matter of time before the right casual games spark interest for the mature consumer at large, both men and women alike. When this happens, casual games will truly move from mass market potential to mainstream actuality.

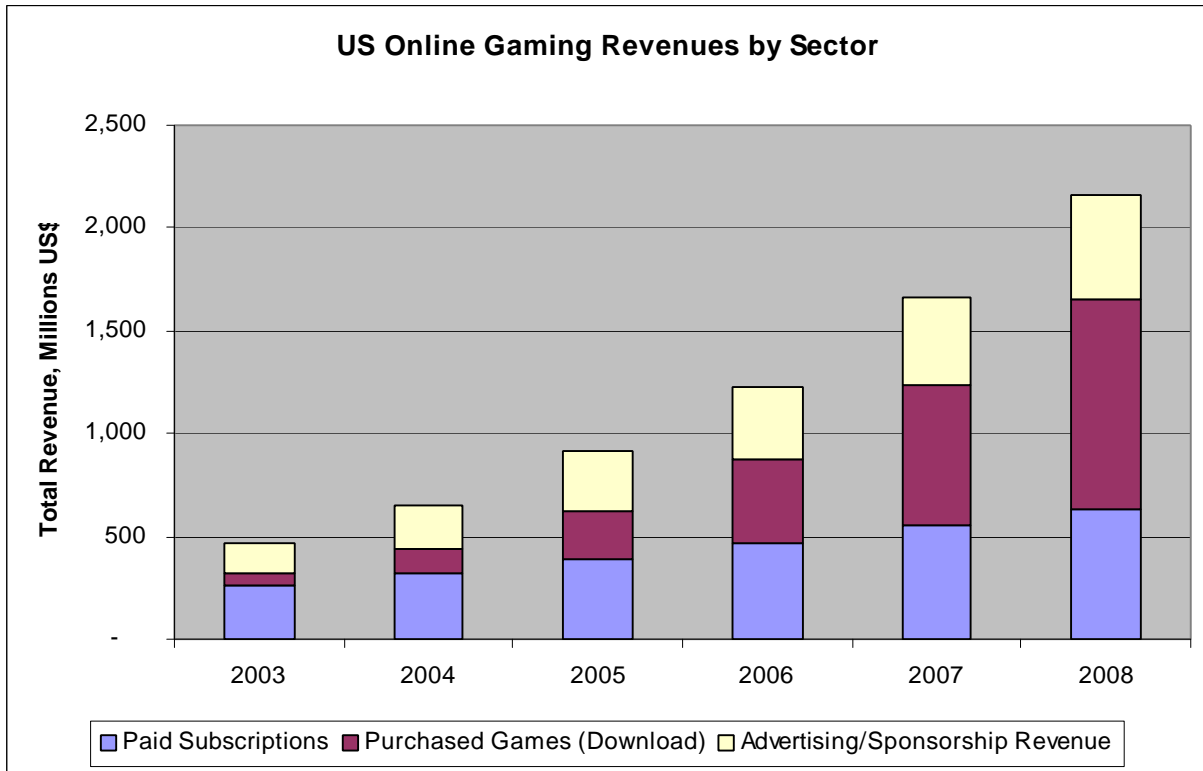
C. Revenue Forecasts and Segmentation

Web and Downloadable games have experienced significant growth in the past five years both in North America and in the rest of the world. The industry has grown from almost nothing in 2002, to well over \$600M in 2004 in the U.S. alone. Industry experts anticipate that the market will reach over \$2 billion by 2008 in the US.

Although Internet access and broadband adoption played a significant role in that growth, the game industry's embrace of online distribution for casual small file Web and Downloadable games has been the major driver. By leveraging the Internet as a unique platform for creation, monetization and promotion, the industry has created a new channel that both drives and is driven by consumer demand. Today, games are among the stickiest, most sought-after content online, and major game sites routinely top Internet site rankings. Interestingly, the major form of game content is no longer game reviews, but the games themselves. Whether played in a web browser or as a fully featured download, Web and Downloadable gaming has moved well beyond the realm of a niche to the mainstream.

² From "Online Paid Content U.S. Market Spending Report"
http://www.onlinepublishers.org/pdf/opa_paid_content_report_nov_04.pdf

³ US Online PC Gaming Forecast 2004-2008: Growth Continues. IDC, Schelley Olhava.
<http://www.idc.com/getdoc.jsp?containerId=32473>



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

D. Common Industry Trends and Market Forces

While there is no disagreement about the tremendous potential of the Web and Downloadable games industry as a whole, its component segments have widely differing growth rates, accelerators, inhibitors and key participants. The key gaming verticals that we have chosen to profile are:

- ?? Core and Casual Downloadable Games
- ?? Web and Community-based games
- ?? Skill-Based games
- ?? Advergaming

In the following sections we will explore the definition, trends, accelerators, inhibitors and future potential of each vertical, as told from the perspective of an industry expert. The following table describes some of the key market forces that are common across the four verticals mentioned above:

		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.	?

E. Core and Casual Downloadable Games

1. Summary

The core and casual downloadable games sector grew over 100% from 2003-2004, reaching over \$115 Million in North America alone. The industry caters primarily to a mass-market audience of consumers that have little overlap with traditional game buyers. Although numbers for core and casual downloads are not separated in the IDC forecast, most industry experts believe casual games comprise the majority of this revenue today.

An explosion in the number of titles, distribution points and marketing investment is driving the sector's growth. The casual game audience is relatively untapped both in terms of potential consumers and volume of downloads. While the core gaming audience is male and aged 18 to 34, casual gamers tend to be both women and men between the ages of 35 and 65, with a slight demographic skew towards women.

The downloadable games market is a North America-centric business today with less than 25% of revenues coming from other territories. Global sales are increasing quickly with top English-language games selling well internationally – even to non-English speaking consumers – as a result of the games' more casual and intuitive play pattern. Additionally, leading channels are increasingly focused on developing localized distribution channels and pursuing localized content, which will be a key revenue driver in 2005 and beyond.

Downloadable games are typically offered in try-before-you-buy (TBYB) mode and/or as part of a subscription service, often with a free web game that is available to provide cross-marketing to the TBYB version and/or as an advertising revenue generator. The free online version usually offers consumers unlimited game play but with a restricted feature set, while downloadables typically offer the entire feature set but only one hour or less of trial play, forcing users to purchase the game for unlimited, offline gameplay. Distribution of these TBYB games is carried out by major portals filling the "retail" role (Yahoo, RealArcade, Microsoft Zone, Shockwave.com, AOL, and Pogo), developer sites (WildTangent, PopCap, GameHouse) and aggregators providing game channels to numerous third-party web sites (TryMedia, Boonty, Oberon Media). Core games are distributed mostly by major gaming portals (Gamespy/IGN, Gamespot), Peer-to-Peer Networks (KaZaa, Grokster) and distributors (TryMedia, Softwrap).

The casual download market was historically devoid of publishers, with game developers distributing directly to the portal "retailers". However, recent growth in the market is fueling the emergence of publishing entities and enabling more successful developers to start publishing third party titles as well. This new breed of publishers provides industry experience, funding and distribution to developers. A full-service publisher would additionally provide technology infrastructure, focus testing, quality assurance testing, and marketing and PR services for its titles/developers. We expect this trend towards the emergence of publishing entities to continue as the market matures and conditions become less friendly to new developers self-funding and self-distributing.

The core and hardcore downloadable market is dominated by the major traditional publishers, such as Activision and Electronic Arts, with some notable exceptions. Independent, large developers have had some recent successes in self-distribution, including the breakthrough of Valve's Half-Life 2 and Team17's Worms. Online core game publishers like Garage Games are also evangelizing the opportunity for independent developers to produce games explicitly in the downloadable format. Although there is some disagreement, most industry observers expect a healthy online market to develop for both niche core games and franchise add-ons that will bypass the retail channel completely. The greater penetration of broadband and faster connection speeds will greatly reduce download wait times and increase consumer acceptance.

With relatively low development costs ranging from under \$50k to over \$150k (and rising), developers face a unique set of opportunities and threats in the casual games market. On one hand, low development costs improve the chance of a positive return on investment. On the other hand, low development costs increase the volume of new titles entering the market, resulting in greater royalty and distribution competition. In contrast, the development requirements for core games are almost identical whether retail or online distribution is being used.

2. Trends and Market Forces

		Accelerator/ Inhibitor/ Neutral
Aggressive customer acquisition	High. Potential customer base is large and relatively untapped. Mainstream customers are being exposed through aggressive consumer marketing by the leading game distribution services and viral pass along.	?
Improved quality and relevance	Moderate. Improved quality and relevance of titles should drive improved conversion rates and revenues.	?
Increased volume of casual games being developed	Moderate. An influx of games being developed may saturate the market and reduce developers' access to the top distribution channels, driving down royalty rates.	?
Direct download model combined with Try-Before-You-Buy is scalable	Moderate. The direct download and TBYP business model is very scalable, keeping distribution costs low.	?
International expansion: localized services and games	Moderate. International expansion by the market leaders combined with localized game content for European and Asian territories will expand the market opportunity.	?
Porting casual games to other media platforms and devices	Low. Casual games transfer well to other mass market digital consumer platforms such as mobile phones, set top boxes, and future living room PC based devices providing a growth opportunity.	?
Publishers entering the market	High. Game publishers are entering the market in order to provide developers with distribution support, market knowledge, funding and their brands, bringing new ideas and powerful brands to market.	?

3. Casual Genres and Characteristics

The top selling casual genres today are Puzzle games, Word games, and Casual-Action games, followed by Tile/Card & Board games. “Fun” and “accessible” are key attributes that determine market potential for casual games. However, it is important to read the genre list with the understanding that there is no set common definition in the mind of the casual game consumer. The casual nature of the games provides a huge opportunity for developers to innovate and explore with new creative styles and types. Some representative examples of downloadable casual games include:

Genre	Game/URL	Developer/Publisher
Puzzle	Big Kahuna Reef http://www.reflexive.net/	Reflexive Entertainment
	Adventure Inlay www.gamehouse.com	GameHouse
Word	FlipWords www.hipsoft.com	HipSoft
	Scrabble www.funkitron.com	Atari / Funkitron
Casual-Action	Platypus www.retro64.com/	Retro64
	Ricochet Lost Worlds Recharged www.reflexive.net	Reflexive
	Diner Dash www.playfirst.com	PlayFirst/ gameLab
Card & Board	Ancient TriPeaks - Card www.toybox-games.com	Toy Box Games
	Mahjong Quest www.iwin.com	IWin

Downloadable games are principally a single-player experience today, whereas web-based games often have significant community features. Increasingly, there is a trend towards greater investment in downloadable games at the expense of community-based web games. It will be interesting to see if downloadable casual games start offering multiplayer and other community features as the market matures.

4. Core Genres and Characteristics

Core games in the download model are identical to their retail cousins, and the genre preferences of users mirror the norm. Action, Strategy, Sports and Driving games are the top performers, with Simulation games making an important showing as the “crossover” titles that draw more mainstream audiences to download.

5. *Business Model Considerations*

Try-Before-You-Buy is a central characteristic of downloadable games. Developers and distributors of games make money only when games sell. While on the surface this is no different than packaged goods sold at retail, the reality is that marketing and promotion of casual games only drives free trial downloads. Therefore, it is the sole job of the game during the trial period to create an experience that is rewarding enough to drive a purchase or conversion to sale.

The core gaming market offers PC downloadable games that most people are familiar with because PC game publishers spend millions of dollars advertising and building their brands. The challenge is that PC publishers to date have largely used online distribution to generate incremental revenue from PC box games that have been in the retail channel for at least several months. This trend is, however, changing. By contrast, the majority of casual downloadable games have no brand recognition, and developers lack the resources to spend significantly on advertising or marketing. Therefore, casual developers are very dependent on portals and gaming sites to promote their games.

Viral marketing can also help online titles succeed. Whether it's by word of mouth or explicit viral features, the pass-along rate of a title can have a significant impact on its revenue. A highly viral title may experience from 7-17% pass-along sales under ideal conditions. This number will be highest if viral marketing is built into the game, peer-to-peer distribution is used, and the anti-piracy technology allows for revert-to-trial capabilities.

Industry conversion rates to sales vary dramatically from channel to channel, and region to region but a good rule of thumb for an average game is around a 1% conversion from download to purchase, with top performing games converting at significantly higher rates during different periods of a game's lifecycle. Although the majority of game sales tend to take place in the first 12-16 weeks, mass-market, and especially casual games, tend to have more "evergreen" sales patterns, often generating significant revenue for years. In the following sections of the white paper content strategies will be outlined to improve overall conversion rates.

6. *Key Players in the Casual Games Space*

Major Online Retailers

AOL Games: <http://aolsvc.aol.com/onlinegames>

Big Fish Games: <http://www.bigfishgames.com>

MSN Games: <http://zone.msn.com>

Pogo: <http://www.pogo.com>

RealArcade: <http://gamedevs.realarcade.com>

Shockwave.com: <http://www.shockwave.com>

Yahoo! Games <http://games.yahoo.com>

Aggregators Providing Retail Game Channels to 3rd Party Web Sites

Boonty: <http://www.boonty.com>

Oberon Media: <http://www.oberon-media.com>

TryMedia: <http://www.trymedia.com>

Zylom: <http://www.zylom.com>

Publishers

GameHouse: <http://www.gamehouse.com>

Garage Games: <http://www.garagegames.com>

Oberon Media: <http://www.oberon-media.com>

PlayFirst: <http://www.playfirst.com>

PopCap: <http://www.popcap.com>

Reflexive: <http://www.reflexive.net>

F. Web and Community-Based Games

1. Summary

Web games are games that can be executed from within a web browser without the need of external (.exe) installers. Common examples include Flash, Shockwave and Java games found on many game websites, as well as custom C++ games delivered via an ActiveX control.

Community based games can be loosely defined as those game experiences where interaction with other players is core to the gameplay experience. Because portals are aggregators of audiences, community becomes an important way for users to define themselves and for portals to define and target their services accordingly. It is also widely understood that community elements within games are an extremely powerful retention tool: audiences feel that they have an investment in their community personae. Single-player web games, in contrast, tend to have low retention rates and play times.

There are a number of business models that rely on web games, many of which are complimentary to each other:

- ?? **Advertising:** The most common examples are web games deployed on destination portals surrounded by advertising units. These units are either sold by a company's direct sales team or purchased from an advertising network. Revenue increases with a game's traffic popularity, the surrounding units' sell-through rates and the units' market values.
- ?? **Sponsorship:** These are games developed with deep integration of sponsor branding. Sponsored web games are deployed either on destination portals or on the sponsor's websites. Some of these sponsor websites have enough traffic and game selection to be considered a portal in their own right. Some developers offer turnkey solutions that include games, website design, hosting and management. *For more information, see the Advergaming section.*
- ?? **Subscription.** Many community-based gaming services generate significant revenue from end-user subscription fees, usually in the \$5-10/month range.
- ?? **Casual Download Promotion.** Casual downloadable games are often presented on portal sites with an accompanying web game version. The web game version is meant to up-sell the consumer into downloading or purchasing the downloadable game. These games can be popular enough to generate significant advertising revenue and occasionally are launched with deep sponsor integration. Many portals serving downloadable games require developers to provide a comparable web version.

IDC estimates advertising and sponsorship revenues in online gaming at over \$200M in 2004, growing to \$500M by 2008. Although web games do not account for all this revenue, a significant portion can be attributed to the traffic generated by web games.

2. Trends and Market Forces

		Accelerator/ Inhibitor/ Neutral
Increased adoption of Instant Messaging	High. The ability to communicate during gameplay continues to be a large attractant for community based game players.	?
More consumer brands are sponsoring web games.	High. Games are becoming part of major media plans.	?
Piracy	Moderate. While most of the major web game technologies are in dire need of digital rights management features, the majority of play sessions are on the intended sites.	?
Fewer attempts at creating “Mascot” games.	Moderate. Advertisers are willing to consider a variety of genres.	?
Increased demand for performance metrics.	Moderate. More advertisers desire (and require) in-game metrics collection and reporting alongside CPM ad units.	? ?
Rise of advertising in Console and PC-Retail Games.	Moderate. Web games are competing for media dollars from other platforms.	?
Proliferation of major downloadables	Moderate. Major downloadables may pull users away from community gaming as their profiles and multi-player capabilities increase.	?
Pricing	Moderate. Depending on the trajectory of other gaming products’ pricing, community gaming may benefit (if prices increase) or suffer (if they decline)	? ?

3. Top Genres

Web game genres vary as widely as every other game platform. And like other platforms, genre popularity varies between age and gender groups.

The follow genres tend to skew younger and male: Action / Arcade, Sports, Strategy, Role-Playing Games (RPG).

The following genres tend to attract older users and be more evenly divided between genders: Board / Card, Casino, Puzzle, Action Puzzle, Word.

Certain Puzzle and Action Puzzle titles have mostly female audiences. All of the above genres can be created as multiplayer, but today we typically only see Card/Board, Word, and Casino games with multiplayer features.

4. Characteristics of Successful Games

Features that are typically associated with community-based gaming include: chat, points based rewards systems, prizing, persistence features, tournaments, ladders, message boards and friend/buddy lists.

The types of games typically found on community gaming services range from single-player to group and competitive games with persistent identity. Most services also offer cash competition options, allowing users to play a ladder or tournament for prizes, otherwise known as skill-based gaming. On the whole, most community gaming services focus on casual games and generate their revenue from subscription fees and advertising. Although not totally dissimilar to persistent-world MMOGs, community-based games differ in that their focus is almost exclusively on casual games/gamers and the game play experience is built for quick and short game durations. The games exist primarily online – however there are various examples of sites with minimal downloadable/retail product crossovers that include things such as prizes and points based rewards systems.

Many portals develop their own community-based game titles, although they are often based on existing game concepts such as Hearts, Backgammon, Mahjong and Go. These simple titles, typically delivered as Java applets (but increasingly moving away from Java and towards Flash), provide little room for third-party developers to bring licensed content to the experience because they are more expensive. However, there is increasing potential demand for such applications.

Because the major portals are also key distributors for downloadable, skill-based and ad-supported games, there is some inherent conflict in the revenue mix they pursue. Community-based games, with their internal development, sunk costs and recurring revenues are a huge attraction for most portals. One other added advantage to sites including community-based elements is that they can add significantly to the amount of time users spend on the site. For example Jupiter/Media Metrix reports that in 2004, casual gaming portals had the highest time-spent per user online of any type of site. As portals increase the amount of time spent on their site, they also increase the opportunity for users to subscribe, download or view advertising – all of which increase their revenues.

However, recent trends suggest that more and more portals are moving toward web content that supports downloadable games without the inclusion of community elements. This trend is commoditizing sites that do not invest heavily in community-based games. There are also instances where portals will ask for joint development of community-based web games in support of downloadable offerings. The advantage of this model is that developers can leverage users' familiarity with existing community-based games to increase the sales of the corresponding downloadable. The development of community-based titles typically requires the integration of APIs that will allow the game to integrate fully with the community services offered on its intended distribution sites. Providing such services and APIs is seen as the key way for portals to maintain their unique identities and to continue to add value as development shifts more and more to outside developers and publishers.

5. Key Players

The following list represents the most highly trafficked websites that publish web and community-based games. Many of the sites listed also offer other game content (casual downloads, game reviews and other editorial, console previews, cut-scene movies, etc.).

Addictinggames.com (<http://www.addictinggames.com>)

AOL Games (<http://aolsvc.aol.com/onlinegames>)

Coffeekbreakarcade (<http://www.coffeekbreakarcade.com>)

Freearcade.com (<http://www.freearcade.com>)

GameHouse (<http://www.gamehouse.com>)

Games.com (<http://www.games.com>)

Grab.com (<http://www.grab.com>)

iWin (<http://www.iwin.com>)

iWon Games (<http://games.iwon.com>)

Jigzone (<http://www.jigzone.com>)

KewlBox (<http://www.kewlbox.com>)

Kraft Entertainment (<http://www.candystand.com>)

Lycos Network Gamesville (<http://www.gamesville.com>)

MiniClip (<http://www.miniclip.com>)
MSN Games (<http://zone.msn.com>)
My Way Games (<http://games.myway.com>)
Pogo.com (<http://www.pogo.com>)
PopCap (<http://www.popcap.com>)
RealOne Arcade (<http://games.realarcade.com/realarcade>)
Runescape (<http://www.runescape.com>)
Sandboxer.com (<http://www.sandboxer.com>)
Skilljam.com (<http://www.skilljam.com>)
Shockwave.com (<http://www.shockwave.com>)
Slingo (<http://www.slingo.com>)
Uproar Network (<http://www.uproar.com>)
Yahoo! Games (<http://games.yahoo.com>)

G. Skill-Based Games

1. Summary

The skill gaming industry has had about five years of operating history, led mostly by privately owned firms striving to achieve or maintain profitability in what they perceive to be a competitive market. As a refresher, a skill-based game is a web game played for money or prizes, which are won based on skill because the elements of luck have either been eliminated or greatly reduced in the game. Subsequently, there has been a dearth of accurate market data publicized on this nascent industry. As is typical of most early stage market assessments, the limited amount of publicized skill gaming market data has generally been restricted to "top down" macro economic extrapolations. Although this document contains macro economic research, it also includes "bottoms up" micro economic estimates based on empirical operating information.

As a sub-category of the overall online gaming sector, the skill gaming industry will likely experience similar growth. As of December 1, 2004 there were approximately 30-40 companies that could be categorized as skill game service providers. In total, these firms facilitated between \$250 and \$350 million in skill game tournament entry fees in 2004. With a compound annual growth rate of between 25 and 35 percent, skill game tournament entry fees should exceed \$1 billion by the year 2009.

Although still not a household term, skill gaming continues to experience increasing consumer awareness. Arguably the biggest contributors to this increased awareness have been portals that have developed an appreciation for the skill gaming business model and transcended their initial regulatory concerns. Currently, the network of portals partnering with at least one skill game service provider includes Yahoo, AOL, Pogo, MSN, Iwon/Excite, Lycos, RealNetworks, iVillage, Disney, BoxerJam, Shockwave and Miniclip.

Further contributions to consumer awareness of skill gaming are expected to come from the large online casino and sports book operators who view skill gaming as a logical (and more regulation-friendly) extension of their core business. Additional consumer awareness will also be derived from the increasing number of mobile and iTV skill game applications.

CASE STUDY: International Skill-Based Gaming

Written by Worldwinner and SkillJam

International Skill-Based Gaming

With the exception of word and trivia games, players around the world – regardless of the language they speak – can enjoy most casual games. It is important that game developers avoid culture-specific content (e.g. including references to cricket players in a game of Hangman or Trivia) to make the games relevant and enjoyable to gamers worldwide. The exception to this rule is if the cultural content has global cool factor that actually generates play through fascination with that “outside” cultural aspect. There is a critical advantage for those service providers who build a strong international community, given they’re also building a network of players available to play games and participate in lobbies around the clock, based on their respective time zones.

Skill game tournaments are currently legal in 22 countries. While North American providers comprise roughly 75 percent of the market, there are several players emerging in Europe and Asia, despite strict online gaming regulations. In fact, some international service providers are turning to offshore portal partners to help them gain momentum in the online games market.

In Europe, the skill games market is estimated at \$50 to \$100 million. Relatively new service providers have emerged, including UK-based Midasplayer.com and GameAccount, Germany-based Gameduell and France-based Madwin.

Skill game sites have begun to operate in Taiwan and Hong Kong, however there are questions over the legality of operating in mainland China. Another major hurdle service providers face, preventing them from succeeding in the Chinese market, is the issue of credit card processing. While the Chinese market holds huge potential for skill game providers in terms of reaching the masses – the number of Internet users in China is expected to reach 80 to 90 million by 2005 – today, only about 1 percent of Chinese citizens hold Western-style credit cards – and they tend to be the wealthiest segment of the population.

Several companies have expressed interest in building skill game sites in Australia. However regulatory issues still prevail while the country tries to define what a skill game is and why it should be legal.

2. Trends and Market Forces

		Accelerator/ Inhibitor/ Neutral
Hardware and software technology advancements	Moderate. Improved platforms make it easier for people to play games.	?
Increased social acceptance of cash prize gaming	High. Skill gaming has a moderately negative reputation due to the confusion with gambling in some culture.	?
The introduction of skill-based versions of popular games	High. Popular brands will attract more players.	?
The proliferation of non-PC based gaming platforms	Moderate. Many skill games are ideally suited for playing in short bursts on simple platforms.	?

		Accelerator/ Inhibitor/ Neutral
Regulatory Challenges	Moderate-High. The skill gaming industry lacks the political clout to influence most governments and may be subject to adverse regulation at any time.	?
Fraud	High. Actual or perceived fraud reduces consumer confidence and willingness to pay to play.	?
Increased hardware costs	Low. Consumers may reduce their content spend if future hardware generations become more expensive.	?

3. Key Players

Key players in the skill-based gaming industry include:

WorldWinner (<http://www.worldwinner.com/>)

SkillJam (<http://www.skilljam.com/>)

Gametrust (<http://www.gametrust.com/>)

Arkadium (<http://www.arkadium.com/>)

Midasplayer (<http://www.midasplayer.com/>)

Gameduell (<http://www.gameduell.de/>)

Game Account (<http://www.gameaccount.com/>)

Madwin (<http://www.madwin.com/>)

H. Advergaming

1. Summary

Advergaming has exploded in the past year. Advergaming is loosely defined as “the use of games to deliver advertising messages, drive traffic to web sites, and build brand awareness.”⁴ Advergaming are now used to sell everything from cars and shoes to servers and soda, and cover most major industries, companies and product types. Branded games can be found in instant messaging applications, banner ads, rich media placements, mobile devices, interactive billboards, traditional websites and pop-ups.

The core premise of advergaming is a simple value exchange: the user gives a brand their eyeballs for three to five minutes at a time, and the brand gives them an entertaining game (usually for free) with embedded marketing messages touting the product, service or industry. Advergaming are distinguished from in-game advertising and product placement by the fact that they are designed explicitly for the purpose of marketing a brand.

Advergaming is one model for cutting through the clutter of today’s ad-saturated environment. The average American child today is exposed to 40,000 ad messages each year and American adults are often exposed to thousands of ads per day in one form or another.^{5,6} The advantages of advergaming lie both in the amount of time a user is willing to spend with the brand as well as in the stronger associations created through effective gameplay.

⁴ Blockdot (<http://games.blockdot.com/basics/index.cfm>)

⁵ Boston.com

(http://www.boston.com/business/technology/articles/2004/09/15/livewire_back_to_school_means_back_to_advergaming/)

⁶ Psychology Today (<http://cms.psychologytoday.com/articles/pto-20040116-000001.html>)

With syndicated advergaming ranging from \$10,000 to \$35,000 (custom-built games can range from \$25,000 to \$500,000), these small games can be affordable, attractive alternatives to traditional integration into console games. Game advertising revenues, including all forms of expenditure related to games, are forecast to reach over \$500M in the US alone, according to IDC. Although advergaming is not tracked separately in the analysis, many industry leaders expect its share to be significant.

The major obstacle to the growth of mainstream advergaming has been distribution. There are two ways that advergaming may be distributed: on the host site of the advertiser or as part of a marketing deal with third-party portals. Generally, advertisers insist that their custom games exist only on their own domain as a means of driving traffic. Third-party portals that offer advergaming are often run by advertisers themselves – effectively keeping competitive products out of inventory. These factors have resulted in most free advergaming being spread throughout the Internet, with few portals or threads collecting revenue directly from the games. The largest advergaming portals are found in the snack and entertainment industries:

- ?? In the snack industry, companies like Nabisco (<http://www.nabiscoworld.com>), Post (<http://www.postopia.com>), and Kraft (<http://www.candystand.com/>) have created a number of small web-based games to showcase their various brands and products.
- ?? In the entertainment industry, channels like Nickelodeon (<http://www.nick.com/games/>), Disney (<http://www.disneyblast.com>) and Cartoon Network (<http://www.cartoonnetwork.com/games/>) create their own games to feature characters and reinforce shows to their fan base, but many of their titles are marginally advergaming.

While there are still few advergaming portals, there have been significant advances in marketer's abilities to successfully integrate games and advergaming into larger, multi-channel campaigns. Some examples include:

- ?? WildTangent's partnership with McDonalds was one high profile example of how these multi-channel initiatives can be beneficial for game makers as well as advertisers.
- ?? Nike's multi-channel advergaming campaign with their "Michael Vick Experience" game for www.NikeGridiron.com was another success. Interestingly, Nike created both a web-based version of MVE that ran on the site, and a stand-alone arcade version for select NikeTown retail stores in the US.

The number of specialist advergaming developers has grown alongside increased interest in the sector. While WildTangent has long been in the advergaming scene, other shops like Blockdot, Freshgames, Fuel Industries, Powerful Robot, and Skyworks now also market themselves as experts in the advergaming industry.

Traditional advertising agencies are also taking a more active role in advergaming, with some opening entire divisions devoted to marketing in the video gaming world. Examples include Starcom Media Group's Play division, as well as The Bounce Interactive Gaming Group at Young & Rubicam.

Although advergaming is a relatively new field, its growth has been extraordinary. By combining the major strength of gaming (user immersion) with the capital of advertising, this sector of the industry is poised to continue its significant growth rate. Venerable industries such as food, entertainment, automotive and financial services have all had significant success with advergaming, propelling developers like Skyworks, WildTangent, Blockdot and Freshgames forward. The increased attention to games from all sectors of industry, notably the advertising agencies, promises that advergaming will form an increasingly large percentage of the marketing mix.

2. Trends and Market Forces

		Accelerator/ Inhibitor/ Neutral
Growth of in-game advertising (PC/Console)	Moderate. Increasing ads in console and PC games makes consumers more comfortable with game-related advertising. This reduces barriers to getting consumers to try a sponsored game.	?
Enhance ad-effectiveness statistics	High. As statistical analysis of console and web-based games becomes more sophisticated, marketers will be more willing to dedicate more money to those channels.	?
Larger online ad budgets	High. Marketers are spending more money online than in the past, but mass market advertising options are under-performing. Interactive channels are increasingly used to reach elusive niches (e.g. 18-34 year old males) and target markets.	?
Saturation of advertising messages in society	Moderate. With many Americans seeing thousands of ads a day in varying forms, it is becoming increasingly difficult to engage them with a brand/product message. It also means that many are likely to shy away from volunteering for ad exposure.	?
More advergaming specialist Game Developers	Moderate. This does present agencies with more options, but the competition also drives prices down for developers.	?
Major Ad Agencies Opening Game-Focused Departments	High. With the opening of Starcom Media Group's PLAY division and Young & Rubicam's Bounce Interactive Gaming Group (BIG), it is clear that the major ad agencies are starting to recognize the importance of understanding the gaming world, and knowing how to target gamers.	?

3. Top Advergaming Genres

Advertisers tend to prefer proven models and are typically risk-averse. Thus, most corporate-funded advergaming have been syndicated re-skins of existing games and game engines. However, some advertisers have developed unique, custom games with greater originality.

Advergaming genres mirror the range of options available in the PC and console space. Exact genres vary depending on the advertiser and their category, but we have endeavored to create a map of key titles according to the common genre they most closely resemble. Note that there is at least one genre unique to advergaming: Micro Games.

3.1 RETRO ARCADE

There is a definite nostalgia for games of the past, and often they are considered chic and trendy. Some marketers attempt to capitalize on this "retro chic" movement with new takes on old games.

Examples:

Sprite - Game System 600 (<http://www.sprite.com>)

Nestle - WONKAnoid Breakout (<http://www.wonka.com/games/WONKANOIDBREAKOUT.asp>)

3.2 PUZZLE

Puzzle games are well established, cheap to make and easy to re-skin for multiple clients. With simple mechanics and rules, they are very safe interactive options for brands, but usually offer limited messaging immersion opportunities compared to other options.

Examples:

Warner Brothers – The Polar Express Train Adventure

(<http://www.postopia.com/games/gamepage.aspx?siteGameID=343>)

Lifetime Television – Place the Face (<http://www.candidemedia.com/placetheface/>)

3.3 RACING

Racing games are another genre that can easily be re-skinned for multiple clients. They also incorporate simple mechanics, and are obviously attractive to car companies looking to create a virtual experience for potential buyers.

Examples:

Dodge – Dodge Racing Hemi Edition (<http://dodge.games.yahoo.com/detail?game=drally>)

Uniroyal – Fun Cup Fun Cup (http://80.237.207.52/funcup/index_fmx.php?fileLanguage=eng)

3.4 STRATEGY

Strategy games come in many different forms and levels of complexity, but this flexibility allows marketers to make strategy games as simple or complex as they like. Deeper gameplay often allows more messaging to come out.

Examples:

Vanilla Coke – Talent Game (<http://www.vanillacoke.com/>)

HBO – Fate: the Carnivale Game (<http://www.hbo.com/carnivale/games/index.shtml>)

3.5 TRIVIA

Trivia games can be used to educate the user about the brand or product. They are also easy to update and re-skin.

Examples:

Hawaiian Punch – You Don't Know Punchy (<http://www.hawaiianpunch.com/>)

Lifesavers – Bet Your Lifesavers: The 90s

(<http://www.candystand.com/games/gamepage.aspx?gameid=190>)

3.6 TRADITIONAL SPORTS

With the massive popularity of sports themed video games, marketers consistently look to them to connect with audiences. The sub-genre of Extreme Sports allows marketers to align with hipper, younger audiences:

Examples:

Nike – The Michael Vick Experience (<http://www.nikegridiron.com>)

Coca Cola – Live The Madness (<http://www.livethemadness.com>)

Coors Light – Trauma Tour (<http://www.coorslighttraumatour.com/>) - Extreme

LG – Action Sports Championships Thrash N' Burn Trailer Park
(<http://www.shockwave.com/sw/content/thrashtrailer>) - Extreme

3.7 ROLE PLAYING GAME (RPG)

The entertainment and car industries have developed a few RPGs. The narrative structure allows them to create a more complex mood, interaction and story line for a more immersive experience.

Examples:

BMW – Cool Flame, The Game (<http://www.be-the-first-one.com>)

Altoids - **Curiously Strong All Night Long Game**
(<http://www.altoids.com/index.aspx?area=game&sitegameid=87&relationid=405>)

3.8 MICRO GAMES

Often companies want something small to accompany their campaigns. Often short micro games can accomplish this for a fraction the cost of other games.

Examples:

Mini – Mini Convertible jump game (http://www.miniusa.com/crm/mini_entrance.jsp)

Sony – Armchair Games (<http://www.thearmchairgames.tv>)

3.9 MULTIPLAYER

Multiplayer games can create a sense of community around the brand, enhance viral distribution of the game and create a loyal user base. However, there are many performance issues, and corporate liability prohibits most un-censored communication during the game.

Examples:

Discover Card – Snowball Fight (<http://www.discovercardgiftfinder.com/>)

Red Bull – Flakes of Fury (<http://www.redbullbigair.com>)

4. Key Players

When looking at online advertising in general, two industries tend to spend the most: technology and finance. Technology companies typically invest the most online, with companies such as Dell, Hewlett-Packard and IBM consistently ranking among the top advertisers online. Finance is next, led by discount brokers such as Ameritrade & Scottrade and insurance company Allstate. Online advertising expenditures totaled \$696.2 million for September 2004, with \$181 million of that coming from the Technology industry.⁷

⁷ Center for Media Research (http://www.centerformediaresearch.com/cfmr_brief.cfm?fnl=041202)

Top 10 Online Advertiser Categories September 2004⁸

Rank	Category	Est. Expenditures	Impressions
1	Technology	\$181,406,100	14,602,000,000
2	Finance	\$89,730,650	7,020,786,000
3	Automotive	\$64,027,400	6,975,806,000
4	Retail	\$61,747,100	5,688,070,000
5	Business	\$50,274,300	4,427,728,000
6	Travel	\$47,382,700	4,286,857,000
7	Home	\$33,821,500	1,923,517,000
8	Entertainment	\$32,463,700	2,258,371,000
9	Sports & Leisure	\$30,720,100	2,184,377,000
10	Health	\$28,052,400	2,775,364,000

While these two industries invest the most money in the online space, other industries have comprised the bulk of advergaming development. Some of the key industries in terms of advergaming are:

- ?? **Alcoholic Beverages:** Long a target of activist groups, the alcohol industry is always looking for new ways to reach their targets. With gaming being so popular, edgy and viral, it's a natural fit. Coors, Corona, and Budweiser have all recently developed games.
- ?? **Automotive:** Many car companies see games as a way to provide a virtual simulation of what it's like to drive their cars. It allows them to showcase different models, and to provide an exciting, edgy test drive for perspective buyers. Recent high end games have been developed for Dodge, Lexus, and BMW.
- ?? **Food & Beverage:** With physical product differentiation being minimal for many competitive products in the food & beverage industry, games have become a successful way to speak to specific target markets about their brand message. Whether aimed at an older market with Sprite's retro Game System 600, giving young kids colorful mazes in Teddy Grahams' Park, or targeting Bejeweled fans with M&M's Flip The Mix, this industry sees games as a fun way to compliment the personality of their brands and products.
- ?? **Hollywood Entertainment:** Advergaming offers entertainment companies a way to offer viewers a continued experience of a show and its characters beyond the theatre and a 30-minute timeslot. TV network FX's Lucky's Run Game, for example, allows viewers to explore the characters and environments of the show at their own leisure. They can also experience enhanced plotlines and stories not covered by a given show or movie.
- ?? **Online (Vertical) Portals:** Many web-based companies have viewed games as a way to break through the clutter and entice users to consider their service. The most notable of these is Orbitz, who has used a constant flurry of simple pop-up banner games to drive traffic to their site.
- ?? **Retail Sporting Goods:** Nike, RBK, Adidas, Puma, and others have all entered the web-games sphere. Nike has developed the most games, creating a number of high-end, web-based Wild Tangent games, as well as game experiences for AIM Expressions, and SMS Location Based Games (<http://www.nike.com/operation6453/>).

⁸ Center for Media Research (http://www.centerformediaresearch.com/cfmr_brief.cfm?fnl=041202)

- ?? **Serious Games & Recruitment Games:** Web-based games are not only being used to sell products, but they are also being used to sell and educate about causes. Games are being produced to teach volunteers how to help political candidates with their campaigns (Dean for Iowa Game), to present points of view on major world and political issues (AFKARMEDIA's UnderAsh), and to recruit for the armed forces (U.S. Army). There are also educational games being produced by organizations to educate people about the dangers of salty foods (UK Food Standards Agency's Sid Game), as well as to encourage users to take care of their prostate glands (Prostate Cancer Charity's Journey to Planet Prostate). If the effectiveness of these interactive applications can be proven there will be many more funded in the future by these causes.
- ?? **Telecom:** Many of the largest advertisers (in terms of dollars spent) are in the telecommunications industry. There is a lot of money to be made in this industry, and telecom companies are all trying to capture their target markets by any means possible. Many have already attempted to use games (web and console) to correlate their brands with speed, reliability and fun.
- ?? **Toys:** Toys and games have always gone hand in hand. With the inanimate nature of many physical toys, interactive web-based games offer the perfect opportunity to bring these characters and toys to life in the virtual space, jump starting your imagination in the physical space.

Few of these advertisers develop their games in-house. Usually they have their interactive agencies build the games or outsource to a game development company.

Adgame-Wonderland (<http://www.adgame-wonderland.de/>)

Blockdot (<http://games.blockdot.com/>)

Denwerk (<http://www.denkwerk.de>)

Gamelet.com (<http://www.gamelet.com>)

3D Groove (<http://www.3dgroove.com>)

Fresh Games (<http://www.freshgames.com>)

Fuel Industries (<http://www.fuelgames.com/>)

Funny Garbage (<http://www.funnygarbage.com>)

GameBrander (<http://www.gamebrander.com/>)

Inludo (<http://www.inludo.com>)

Leviathan Games (<http://www.leviathangames.com>)

MindComet (<http://www.mindcomet.com>)

Ogilvy Interactive (http://www.ogilvy.com/o_interactive/)

PanLogic (<http://www.panlogicgames.com/>)

Powerful Robot Games (<http://www.powerfulrobot.com>)

Random Media (<http://www.randommedia.co.uk>)

R/GA (<http://www.rga.com>)

SkiveCreative (<http://www.skivecreative.com/>)

Skyworks (<http://www.skyworks.com>)

Soap Creative (<http://www.soap.com.au>)

Templar (<http://www.templar.com/>)

Thup (<http://thup.com>)

Wild Tangent (<http://www.wildtangent.com>)

WM Team (<http://www.wmteam.de>)

YaYa (<http://www.yaya.com>)

III. Business Models

A. Introduction

This section outlines the current business models associated with the Web and Downloadable game market. If there is one thing that the proliferation of the Internet has accomplished, it is that companies doing business on the web can monetize their products or services in an overwhelming variety of methods. We compare and contrast these different models to one another and to games that are distributed in the physical retail channel.

B. Business Differences versus Physically Distributed Games

The value chain for Web and Downloadable games touches many of the same points as games delivered through other means. From creation to monetization many of the same business challenges apply.

1. Packaging and Formatting

After a game has been created, it needs to be converted to the appropriate final format. In traditional models, this may mean formatting the game so that it can be placed on a CD or DVD. In the web model, this means formatting the game to be hosted for play from a web server via a web browser. Downloadable games are downloaded from the web server and executed as local applications. Typically, there is no additional formatting required for web and downloadable games. During packaging, user documentation, packaging images, and marketing materials are included with the game. For a web or downloadable game there is no difference; the game still needs to provide documentation for the consumer and “box art” and other promotional images for the online channel to effectively market the game.

2. Licensing

Following physical packaging, item, billing, and/ or tracking codes are assigned so that the business is able to track user info and monetize the asset. Based on the various aspects of the package, policies regarding use are set and wrapped with the package typically via a licensing technology. Traditional game licensing technologies range from encoding onto physical media, to key codes, to online registration and enablement. For web games, this licensing process is easier since the ability to play is tied to an online component instead of physical goods. Typically, consumers need to be logged onto a web site, perhaps via login and password depending on the business model (e.g., advertising model – no login vs. subscription requires login). For downloadable games, the challenge is greater. After a game is downloaded, businesses typically have no insight into who is playing the game or how it is being used unless an online account is required for play. Several different DRM (Digital Rights Management) technologies are becoming a popular way to set policies about how a game can be used and by whom.

As with traditional licensing technologies, today consumers can still overcome DRM to use a game without proper authorization. Controlling proper use of a game is the only way to ensure monetization of the asset, and is probably the greatest business challenge. The different methods can deter improper use with varying degrees but today none offer 100% protection.

3. Distribution

The next step in the process is to provide the game package to the appropriate channels. In physical distribution models, this involves first sending the package to a manufacturer who will burn the CDs, print the manuals and boxes, package them together and send to distributors. Traditional models may have varying degrees of complexity based on the number of distributors and middlemen that a game needs to pass through to arrive at the final consumer channel. This model takes considerably more time than with the online models, and has incremental costs associated with manufacturing and logistics. Web and downloadable games eliminate many layers of manufacturing and logistical complexity in getting to the final channels, since they can be sent directly online to the final channels.

After arriving at the appropriate channels, the game is made available for sale. In the physical model, making a game consistently available across many channels can be difficult. For example, ensuring that all channels make a game available at the same launch time is difficult to track and monitor and enforce. With web or downloadable games, launch times can be coordinated and monitored electronically.

4. Retail

In the traditional model, the channel then sells the game to consumers by collecting the revenue, tracking the sale, reporting the sale back to the licensor, and paying the licensor (depending on the arrangement for pre-pays versus post sale payment). It can be a slow process for the licensor to recognize revenue. In the web and downloadable games model, revenue recognition could theoretically become very streamlined since the collection of revenue, tracking/reporting of the sale, and payment to the licensor could all happen electronically. However, in reality, the best game sites pay monthly net 30, and the slower sites pay as late as quarterly net 45.

5. Fulfillment

Finally, the game is delivered to the consumer. In traditional models this may be handing the game to the consumer or mailing it to them. With web or downloadable games, fulfillment occurs electronically.

Once the consumer has received the game, tracking and enforcement of the license policy can begin. Successful tracking and enforcement of policy allows for greater monetization of the games. This is one of the larger challenges for both traditional models and downloadable games as mentioned earlier.

6. Viral and Hyper-Distribution

After initial delivery of the game occurs, most games are subject to the potential of viral or hyper distribution, which involves consumers giving copies of a game to other consumers. This is a challenge for most businesses, because they have little insight into how many copies of a game are virally distributed and used without authorization. Fortunately, the solutions for ensuring proper use of games even through viral distribution are getting better. Many of the latest DRM solutions allow for viral distribution by providing rules for limited use for games when distributed virally. For example, a game may have rules that allow it to be played for 6 hours before being locked. The consumer is required to pay for the game to continue use, and cannot simply re-install the game to bypass the DRM license rules because the newer solutions keep track of use on the consumer's end device (such as a PC). When considering how to handle license enforcement, businesses should consider their stance on viral distribution and select a solution that supports their business goals.

C. Exploring the Business Models

If there is one thing that the proliferation of the Internet has accomplished, it is that companies doing business on the web can monetize their products or services in an overwhelming variety of methods. It is important that game developers explore all the options as well as look for ways to monetize their game beyond creating just a free web and/or downloadable version. Below is a list of the type of business models.

1. Primary Business Models

1.1 Work for Hire Development

Also sometimes called "time and materials" this actually refers to a sub-type of work for hire. In this model, the developer charges the publisher for costs based on the developer's staffing and overhead, and then receives regular payments at the agreed upon rate as work is performed. In this model all of the content is generated and developed in-house, that is, in the developer's offices. The completed work may be published by the developer or someone else.

This model can benefit a smaller studio or business. Risk of the "lights going off" is very low as payments are made to the developer regardless of the outcome of the project. Developers are paid for work performed, and do not have to worry about potential losses or lack of payment if the game is not a

success. In this model, potential cash flow issues are eased and the lights "stay on" as long as the work is performed. Even if the project does not finish, developers will likely be paid for the milestones achieved. In some cases, developers can also receive royalties after prepaids are recouped.

The notable item in this model is that the developer will not own the intellectual property (IP). The potential benefit of this model for the developer is having the IP managed. A publisher is typically better positioned than the developer to manage the IP across platforms, geographies, and time. The publisher will also likely have supporting business structures that can contribute to the success of the game: among these, funding, creative collaboration, project management support, technology, QA, research, marketing, localizing and distribution, including distribution into large portals that the developer might not be able to secure on their own. –So, a publisher can add value in the chain by helping tune the game to the target market, shepherding the process of getting the game created, providing additional technological expertise, and helping ensure the success of the game through expanded distribution.

The potential detriment of this model to the developer is that the IP may be left "sitting on the shelf" if the publisher's attention turns elsewhere or if the publisher does not have a strong distribution network. Savvy developers can negotiate out clauses so that their share in potential royalties (if any) remains an active share. Obviously, this is not a concern if the contract was negotiated with no share in royalties. In that case, when the game is finished, the developer's financial stake in the commercial success of the game would end at the final milestone.

Any partnership under this model has some understood risks. For example, under some contracts, the publisher can cancel a project at any time. In such a case, a developer might be paid for the first milestone, and then have the project cancelled, leaving the developer scrambling for a new project. Savvy developers try to negotiate a cancellation notice period in order to circumvent this issue. An example from the publisher side is that a developer might submit a milestone that is of poor quality, and that is, for publishing intents, useless. Savvy publishers create clear milestone requirements so that they are not paying for work that is not up to the standard of their distribution network.

The IP of the finished game is only one part of the larger IP pool covered by the agreement. As determined by the contract negotiated between the developer and the publisher related IP may also include royalties agreements, sequel decisions, media exposure, brand decisions and many line items. In some cases the publisher would also own all the code and tools developed on the project for that game.

The critical balance question around "work for hire" agreements is do we gain more by working together than by working independently?: both parties knowingly give away a piece of their pie, in hope that the piece given away will be trumped by the piece soon created jointly.

1.2 Selling or Exclusively Licensing IP

These are many ways in which a developer or publisher can trade capital for strong rights to a product and IP. Complete or nearly-complete IP can have significant value if sold outright, or exclusively licensed for a determinate amount of time by a third party. Unlike "back end" revenue, this is generally paid up front, all or in part. When this immediate capital is re-invested in new development, it becomes a foundation on which to build more independence and financial stability. Since the IP is created and built on spec, creative control rests with the developer, and some of the risks related to work-for-hire (such as sudden project cancellation) are mitigated in exchange for the increased risk of self-funding the IP development. Generally speaking, selling or licensing IP rights, as opposed to simply licensing usage or distribution, grants the licensor titles, assets and resources to the original in representation of a new product with all associations still attached to it, including sequels. Strong IP, when sold or exclusively licensed, can generate a great deal of revenue in this way, but developers need to weigh the trade offs for receiving the upfront money.

1.3 Segmented Rights Licensing

Sometimes called "Non-Exclusive IP Licensing", this includes any model in which the various and sundry rights associated with a product or IP are segmented and "sold separately" to different parties who intend to use those limited rights to capitalize on a specific opportunity. In many cases, this parcelling-out of rights is crucial for maximizing revenue. However, the downside is the amount of time and energy it takes

to identify partners who are interested in these segmented rights and to negotiate and maintain deals with each and every one of them. As with each model, there is a tradeoff of risk and reward. In this case the upside is a much higher ability to impact and optimize the potential of the IP, but the risk is the investment that must be made in business development and possibly marketing in order to capitalize and monitor these myriad opportunities. The resources required by the developer or publisher to manage the multiple licenses of one's IP are resources that are then not being invested in the creation of new IP that could that could form the basis of future businesses.

Consider usage licensing for web games, and distribution licensing for downloadable games: in each case, the developer carves off a certain subset of rights for the licensor to use, and probably monetize, for a specific purpose. Most commonly these two models license the right to market and promote the game to their respective user-base because they believe their user-base will see value in that content. This might be monetary value, or simply loyalty value that results in that partner being able to charge more for advertising on their site. The key to carving up rights effectively is understanding the potential needs of the various partners, and fitting the rights picture together so there is minimal waste as defined by rights that are assigned but not capitalized on in a way that benefits the rights-holder.

1.4 Service Solutions

This model is a good fit for IP owners or licensees who have a library of content that can be assembled in such a way as to provide a "package" value that is potentially greater than the sum of the parts. For example, a "package" might be: a suite of web games, the servers to host and support them, tools for monitoring and optimizing the system, and a template-driven page generation system. Packaged together as an integrated service for the right customer, a service solution can generate an ongoing revenue stream that is in total significantly more than the individual pieces themselves would garner.

Such a package often will generate very strong partnerships that last a long time, as the licensor becomes dependent on the developer to provide these services, and as a result the package can be quite lucrative. The risk is in the additional resources expended to develop the total package as opposed to stand-alone products, and the loss of flexibility if the developer finds that things aren't going as expected. Generally this approach works better in web games than in downloadable games because in the current state of the industry, at least for a developer, most of the larger potential customers for licensing rights to downloadable games are already in the service business.

2. Secondary Business Models

2.1 Web Games/Downloadable Games Crossover

Due to the similarities in the audiences for Web and Downloadable games, development studios with a strong capability in one tend to be able to make the migration to the other fairly painlessly. Further, for some types of games it makes sense for the studio to build the same game to support multiple business models.

The simplicity and immediate addictiveness of a good web game design often will translate well to a downloadable game design, and licensing and/or distributing such a version will often net an interesting incremental revenue stream.

Similarly, web game versions of downloadable games can be an invaluable tool for generating qualified incremental traffic into a demo download, or even direct-to-purchase paths for a downloadable game. A web game may be the perfect pre-merchandising tool for certain downloadable games. However, web games optimized for this effect often lack the ongoing appeal that would drive the habitual usage necessary for success in a pure web-game play, and giving away too much in the web game can have a detrimental effect on the downloadable version(s) distributed in the same channel.

Understanding which business is the primary focus and what metrics the developer is optimizing for, is the key to making both of these models work together. As an alternative, one under-utilized possibility for generating revenue from both downloadable games and web games while staying true to each medium's design needs might be for a developer to license their game IP to another company to do the other version. This could prove to be highly successful, because while the technological difficulty of such a port is low, many developers underestimate the related subtle difficulty of supporting both markets effectively.

It should be noted that the comments on the ease of technical migration between Web and Downloadable games generally assume technologies like Flash or Director/Shockwave are being utilized. It is, in fact, quite difficult for non-sophisticated programmers to make the leap from these technologies to C++, which is increasingly becoming the dominant language for download games due to its ability to support higher quality, lower file size games.

2.2 Publishing

In general “Publishing” is the process of taking a particular piece of IP and making it available for sale to the public, either directly or through a B2B relationship, while retaining ownership rights over the IP. There are 3 tiers of content publishing referred to as “1st Party”, “2nd Party”, and “3rd Party”.

1st Party Publishing is when a game is created in-house and distributed to the public through the developer’s own business development or publishing efforts.

2nd Party Publishing is when a developer licenses the concept, design, or IP from another developer and then launches it under their own label as if it was fully developed in-house.

3rd Party Publishing is when distribution rights to a particular piece of content are licensed, but the product is published under the content owner’s brand.

In all three cases a good publishing business depends upon a strong established distribution network to drive revenue for all parties involved. Most developers in the downloadable and web games businesses are already in the 1st party publishing business – such shops are “self-publishing” developers. Some very established developers have had success entering into 2nd party publishing as an additional secondary business model. The 2nd party business is a natural extension for established game developers as they have both the expertise and the distribution contacts to provide significant value to an up-and-coming developer. Such companies may be referred to as “developer/publishers”. More recent entrants to the market are billing themselves as pure “publishers” – while they may develop some titles internally, their core business model is funding third party developers to create the bulk of their games.

Often two talented companies can collaborate quite effectively to create a compelling new product, and market it under a strongly established existing brand. It is more unusual to see a company for whom the primary business is game development to have success in the 3rd party publishing business. The problems start with brand competition. Developers will naturally tend to favor their own brand. Other brands that compete for a customer’s time and attention tend to detract from their brand, and in many ways “compete” for the same people and dollars. Typically a publisher who has 1st party and/or 2nd party products will likely tend to push those over the 3rd party products, and thus reduce the value the relationship offers to the 3rd party product owner. Worse, 3rd party deals usually stem from one or both parties wanting to hedge their bets a bit and avoid the more complete commitment to a 2nd party deal, resulting in terms leading to reduced economics for both sides. That a successful 3rd party business is by nature a volume business, since you can do these deals quickly and with little risk or commitment to individual products, bleeds even more economics from the licensor. The final nail is that moving into a 3rd party publishing business puts the developer in flanking competition with the very partners they rely on for distribution. The result of these combined factors is that the 3rd party business is particularly unstable and difficult to make work when pursued by companies that rely primarily on a 1st party, in-house development effort as their primary means of doing business.

2.3 Direct Distribution

Selling direct to consumers has a number of advantages over working through a partner who distributes the product. By cutting out the middle man, developers earn very high margins on every sale, and control every aspect of the distribution, allowing them to position and merchandise their games exactly as they see fit. Additionally, they don’t have to compete with any other products in the channel. Finally, direct distribution allows developers to build a close relationship with their customers.

There are also a few large hurdles to direct distribution: it’s difficult, expensive, time consuming and it can potentially cause channel conflict with distribution partners.

To maintain direct distribution, developers have to think about hosting and bandwidth costs, uptime, e-commerce security, Digital Rights Management, compression, installers, protecting personal information,

customer acquisition and service, scaling traffic, churn, and a whole host of other issues that would otherwise be handled by distribution partners. Do *not* underestimate the cost of raising awareness of one's web site and acquiring new customers. With millions of sites globally, consumers rarely "stumble" onto a web site. Successful developers spend a great deal of attention on marketing and advertising to generate awareness or partner with large portals initially to raise awareness for their games with consumers and other online gaming sites and portals. Each of these issues listed above takes time, money, and dedication to address. Even more importantly, if this becomes a successful source of secondary revenue, the developer will begin to compete directly with their other distribution partners, and thus may begin to threaten their primary source of revenue.

Direct distribution can be quite valuable, especially as a source of information for testing new games, staying aware of the pulse of customers, and as a safety net for the company to help insulate them from the ups and downs of external distribution sources. However, developers who depend on external distributors should be careful not to let their own distribution jeopardize their primary revenue streams.

2.4 Technology Licensing

Explain the format.

In this model, business development cycles are measured in weeks, and time-to-market can be measured in days or even hours. Product success is predicated primarily on gameplay, fun-factor, and accessibility, and rarely is it based on technological advancement. As such technological breakthroughs typically do not result in a large competitive edge. However, the time savings associated with licensing technology instead of building it from scratch can be a significant advantage for the licensor. The end result is a largely untapped market for licensing technologies to other companies, especially those technologies related to reducing the time, cost, security problems or complexities of delivering product via the Internet.

D. Financial Models

Below are listed the most common financial models in the marketplace today. These models are not mutually exclusive, and it is not unusual for there to be a combination of several models at once at different points in the value chain.

1. Revenue Share

As the name implies, both companies share the revenues generated from the product(s). How much each party receives is dependent on the specifics of the arrangement, but generally this model provides the most flexibility and leverage for the retailer, as the owner has already borne the risk of creating the product. Furthermore, this method has the least amount of risk from a distribution standpoint, as little to no upfront costs are incurred. Revenue share can include the sharing of sales to consumers, shares of ad revenue generated by customers playing a game, shares of wagers made in cash competitions, etc. Revenue shares are sometimes referred to as royalties, or back-end.

2. Royalty Advance + Revenue Share

In this model the publisher advances the developer cash up front and then withholds that amount from the royalties until the advance has been repaid. This is sometimes referred to as a recoupable prepay. In this case the publisher is reducing the developer's risk by giving the developer some amount of money up front with the intention of recouping their investment as the product sells. Generally the revenue share a developer receives in this case is lower than what they would get without the prepay as the developer's risk is lower, and the publisher's risk is correspondingly higher. As a result, for a successful title, this method will generally result in fewer profits to the developer in the long run. This can still be beneficial, as the developer may need the money to develop the title in the first place. It is not without risk however, as a title which performs poorly will result in the publisher losing money, and that may affect future deals with the developer.

3. License Fee

This is a model in which the licensor fronts the developer a non-recoupable fee in exchange for certain rights over a certain period of time. This is far more common for web games and is rarely, if ever, seen for downloadable games. The time frame might be very long or very short, and the rights offered might be very broad or very narrow, and the size of the fee is reflected in all of these things. Typically deals like this do not contain any kind of revenue share, or the revenue share is very low. This is because the licensor is taking on almost all the risk of the project by paying a fixed sum to the developer.

4. IP Sale

IP sale indicates that the developer builds their own product or intellectual property and sells it to a distributor or publisher, thereby relinquishing all rights to that IP. Note that this is the IP that is being sold, not just the game; it is the game, the source code, the sequels, derivative works, everything. While a developer might be asked to consult for a period of time to make sure that the buyer can effectively utilize this IP, that will typically be a short term arrangement. When a developer sells their intellectual property they should typically assume that anything even resembling that IP is off limits for future products unless they have specific written exceptions in the sale agreement. Developers who wholly sell their intellectual property eliminate both their risk, and their opportunity for long-term loss or profits. Once the sale is complete, the developer has no stake in the success or failure of products based on that property.

This model may be common for web games, but it is unheard of for download games – developers that self-fund a title would not be likely to sell it outright upon completion. Instead, the far more common model with download games is a publishing relationship where the publisher pays flat fees or a royalty advance on milestones while the game is created in order to own the end product, generally subject to ongoing royalty payments.

5. Other considerations

With so much attention expended on negotiating key deal points like revenue share or advances, dealmakers can fail to recognize that critical value exists within many other portions of the contract. A skilled negotiator can leverage knowledge of both parties' businesses into short term and long term value for both parties. Partners who have a deep understanding of each other's needs and offerings have the best chance of structuring a deal that maximizes their return on investment, while utilizing the strengths of each partner. This is considered a win-win agreement, and has the added value of likely longevity. The time taken to find the right fit up front for the talents and resources of both parties can more than pay itself back over the life of such a partnership, in revenue and non-monetary forms such as trust, esteem, value and identifying future opportunities for the other party.

E. Legal and Taxation Issues

There are myriad legal and taxation issues that game developers must consider. For sales directly to the consumer, consider the following.

1. United States taxation of games delivered via the Internet

The United States Congress is currently discussing if it will take a position in regard to digitally downloaded software. The State Sales Tax Project (SSTP) has determined that downloaded digital software is a taxable event. As of October 20, 2003 the Streamlined Sales and Use Tax Agreement (SSUTA) is now in effect because more than 10 states with 20% of the total population of all states imposing a state sales tax have enacted the conforming legislation that complies with the Agreement.

According to the California Legislative Counsel's Office, the following states, plus the District of Columbia, participate as voting members (implementing states) in the SSTP: Alabama, Arkansas, District of Columbia, Florida, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Nevada, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. The SSTP will become voluntary

enforceable as of October 1, 2005.⁹

The following states do not have a sales tax and would not participate: Alaska, Delaware, Montana, New Hampshire, and Oregon. One of the components of the act states that for nexus/state taxation purposes *any downloaded service is to be taxed by the state/locality where the end-user's customer's billing address is located*. It is easy for the states to expand this theory so that the service fees paid for PC online gaming are taxable in the state where the player is residing.

Unless Congress rejects the authority of the SSTP, as of October 2005, developers of downloaded games will be required to collect a sales tax on US subscriptions in the SSTP member states.

2. International Taxation of Web-Based Games

The Internet has stretched the legal definition of who has the right to tax the cash flow generated by those games. The definition in question is one of nexus. Prior to the Internet and mail-order, nexus was easy to establish. The physical location of the vendor was the location that could tax the transaction. Mail-order began to blur the importance of physical location. The Internet (or e-commerce) has diminished physical presence to a point where it is a minor factor in determining nexus. E-commerce utilizes servers. Web-based games also utilize servers in the same manner. A person logs onto the game server, pays a monthly subscription fee to play the game (Odd World, EverQuest, etc.), or perhaps when the user purchased the software, it enabled him or her to access based multiplayer games (Battle.net, etc.). The international Organization for Economic Cooperation and Development (OECD) on January 9, 2001 announced a change in its position in regards to servers. The OECD decided that a server could meet the definition of permanent establishment. The language adopted by the committee provides that computer servers can be considered to create a permanent establishment if "the business of an enterprise is wholly or partly carried along through the equipment." A central issue is whether the activities carried along through the server are merely preparatory or auxiliary? In which case they would not generate a permanent establishment or go beyond that threshold. Other significant points made by the additions to the treaty commentary include conclusions that:

1. A World Wide Web site does not by itself create a permanent establishment because it does not constitute a fixed place of business; a web site hosting arrangement typically does not result in permanent establishment status for an enterprise paying for space on a server it does not own; and no human intervention surrounding the server is required for a permanent establishment to exist. Notwithstanding the OECD, the United Kingdom has statutorily determined that a server located in the United Kingdom will not create nexus; thereby a nonresident United Kingdom gaming company who has their servers located in the UK will not be taxed (see exception regarding VAT) in the UK. Italy has determined that if you use a smart server, you have created a physical presence in Italy and that Italy has the right to tax your income stream. The German Federal Tax Court in April 2002 took under consideration whether a computer server can constitute a permanent establishment to which income should be attributed for taxing purposes. As of the date this is being written, the Court has not published its determination. Australia has decreed that a server is a physical establishment. Therefore, if your server is in Australia your income flow will be taxed (this may explain why most Australian entities have their servers located in California). The United States, for federal purposes, has not issued any guidance on this matter. In the multi-state arena, the states seem to be agreeing with the Italian position. Besides the issue of compliance with many taxing jurisdictions and its corresponding costs, the Pandora's Box of how to allocate the income between the shrink-wrapped product and the possible Internet use is mind numbing.
2. Digitally downloading software is becoming an acceptable means of distribution. Countries have begun to defend their bricks and mortar businesses. In May of 2002, the European Union (EU) adopted a resolution that as of July 2003, digitally-purchased and downloaded software will be subject to VAT (Value-Added Tax). The issue of whether a company is a

⁹ SSTP.org

resident and physically located in an EU country is no longer pertinent. All digitally downloaded software will be liable for VAT tax. The tax rate is dependent on the location where the software was downloaded. The EU will require companies that are not located in the EU, to register for collecting VAT in an EU country of their choice. The additional compliance costs of registering in the EU, purchasing software that will track where the game is downloaded, and then computing the appropriate VAT tax of that locale, will now need to be included in projected expenses. As of November 1st, 2003 Belgium is the only country that has issued guidance and regulations in regards to nonresident companies registering for VAT.

United States Game Companies have already started to charge their EU customers with a VAT tax for on-line gaming sales and subscriptions.

On October 29, 2004 The European Commission proposed a "one-stop shop" system for applying and collecting value-added tax to simplify rules for companies operating in more than one European Union state. The plan would allow a company to use a single VAT number for all supplies made throughout the EU and to make VAT declarations to a single electronic portal, which would then be submitted automatically to the different states to which the trader supplies goods and services.

With laws constantly changing at the state, Federal and Internationally, it is wise to pay for good legal and accounting advice to avoid any unexpected surprises.

F. Conclusion

To summarize some of the key points in the business model section, developers and publishers should always consider the following:

- ?? A new game developer, with no credibility in the marketplace, may need to consider taking less money for their first game deal in order for a publisher or portal to take a chance on the developer's game.
- ?? Web and Downloadable games share the same delivery mechanism but each has unique success factors that should be considered when creating the game.
- ?? Developers should be wary of aggressively pursuing business models that put them in competition with their partners.
- ?? Financial models are flexible and primarily revolve around risk. The more risk a developer is willing to take the greater the revenue share if the product is successful.
- ?? Know publishers' distribution capabilities and compare economics with publishers who can offer similar distribution capability.
- ?? Selling IP can be very beneficial short term, but has many long term issues which should be considered.
- ?? Partners who take the time to understand each other's businesses are better able to provide maximum value and benefit to each other.

IV. Production and Design

The Web and Downloadable segment of the games industry changes almost as rapidly as the Internet itself. Technology evolves, broadband usage increases and, every day, more and more people are playing and accessing and even playing their games online. In this section, we will examine what it means to design games for the evolving online medium and its wide-ranging, international audience. Specifically we will examine the production and design issues facing developers who are looking to make a successful title for this market segment – and focus on the following issues:

- ?? Game Design – Designing for online play or distribution.
- ?? Target Audience – Designing online games with your target audience in mind.
- ?? User Interactivity – Typical user interactivity found in online games.
- ?? Game Mechanics – Typical game mechanics found in online games
- ?? Use of Characters & Narrative – How characters and narrative are used to sustain a theme and imbue intellectual property (IP) with sustaining value.
- ?? Designing for Upsell – How to design online games to encourage upsell of premium versions
- ?? Production Issues – Production and process issues inherent to online game development.
- ?? Process Differences – Differences between online games vs. other gaming platforms (e.g., console).

A. Introduction

There are many types of Web and Downloadable games – each with their own design considerations. The table below provides an overview of key design differentiators, typical file size and additional examples of each type of Web and Downloadable game discussed in this section.

1. Types of Web and Downloadable Games

Type of Web & Downloadable Game	Key Design Differentiators	Typical File size	Examples
Advergame (Web)	<ul style="list-style-type: none"> ??Fast-loading inside browser ??Designed to maximize clicks / impressions ??Sometimes “twitchy” bursts of entertainment – or designed to be played for hours. 	500k – 2MB	Mr. Peanut’s Match-Up http://www.planters.com/games/game_page.aspx?Gameld=132 American Airlines’ Chair-iots of Fire http://www.blockdot.com/portfolio/adv_ergames/american_chairiots_play.html
Downloadable	<ul style="list-style-type: none"> ??Enhanced game features, sounds, and visuals for a “premium” gaming experience ??Design with upsell in mind — entice players to purchase full game version 	5MB – 10MB	Twisty Tracks http://www.mumbojumbo.com/TwistyTracks.html Platypus http://www.retro64.com/platypus_game.asp
Skill Games (Web)	<ul style="list-style-type: none"> ??Fast-loading inside browser ??Short burst of entertainment – typically 3 minutes or less ??Must adhere to strict skill-gaming guidelines to ensure 	500k – 1MB	Skillgammon http://www.worldwinner.com Trivia Challenge http://www.skilljam.com

Type of Web & Downloadable Game	Key Design Differentiators	Typical File size	Examples
Premium Games(Web)	<p>fairness across players</p> <p>??Additional back-end integration issues.</p> <p>??Typically larger downloads – with broadband users in mind</p> <p>??More media / experience rich.</p> <p>??Often the same as the “Downloadable” version of a game.</p>	500k – 15MB	<p>Shockwave.com 3D Pool, GameBlast Service (http://gameblast.shockwave.com/landing/landingIndex.jsp?id=swpool)</p> <p>Word Whomp Whackdown, Club Pogo Service (http://playweb16.pogo.com/tour/cpgame-whackdown.jsp?sls=2&site=pogo)</p>
Web Demo	<p>??Significantly scaled-down version of Downloadable Game, designed with upsell to full version in mind</p> <p>??Designed to be fast-loading inside browser</p>	500k – 2MB	<p>Zuma (http://www.popcap.com/launchpage.php?theGame=zuma&src=big8)</p> <p>Collapse! Strategy (http://www.gamehouse.com/games/)</p>
Web Game	<p>??Fast loading inside browser.</p> <p>??Community oriented, through the use of leader boards or high-scores if it's single player, or head to head competition if it's multi player.</p> <p>??Advertising integrated before or inside the game.</p>	500k – 2MB	<p>Slingo http://www.slingo.com/</p> <p>Family Feud (http://www.uproar.com/games/cat_gameshows.asp)</p>

2. Web and Downloadable vs. “Traditional” Retail Games

With the new territory covered by Web and Downloadable games, new design challenges and constraints apply. To be successful in this space, it is not enough to apply the rules learned in the traditional retail gaming space. If games are not designed for optimal integration with a delivery medium and acceptance by an audience, a title may be relegated to a lower tier.

How are Web and Downloadable games different than traditional types of gaming? Puzzle, word, and arcade-style games seem to be the more prevalent genres. These types of games are lighter diversions for the consumer. They are not as competitive or stressful as traditional games and focus more on a pleasant and relaxing experience. Production for these types of games focuses less on cutting edge technology and more on theme and presentation.

Table B1 depicts ways in which Web and Downloadable game content compares to games released in the traditional retail space.

3. Comparison of Web and Downloadable and Console Games

Area of Comparison	Game Platform	
	Web and Downloadable Games	Console Games
Target Audience	??Female ??30s – 50s ??Those typically viewed as “non-gamers”	??Male ??18 – 24 ??Traditional “core audience” for retail games
Popular Genre(s)	??Action-Oriented Puzzles ??“Thinking” Puzzles ??Retro Arcade Spin-Off’s ??Casual Sports ??Card Games ??Other Non-violent	??Action ??Sports ??Racing ??RPG ??Sims ??Highly competitive
Interactivity	??Light Gameplay ??Low to Medium Depth	??Heavy Gameplay ??Medium to High Depth
Controls	??Very simple – primarily mouse-based and able to learn within first few seconds of playing game.	??Often complex – using several combinations of controls at once, learned over time.
Process Differences	??Publishes and Developers may compete against each other for sales.	??Developers do not have direct involvement in sales.
Project Size	??Smaller Teams (1 – 5 people)	??Larger Teams (5 +)
Project Constraints	??File size ??System Constraints ??Demographics ??Portal Needs ??Broadband Penetration	??Money ??Holiday-Driven Production Seasons ??Demographics ??Publisher / License Demands
Designing for Upsell	??Upsells must be incorporated into game in order to upsell premium content ??Cross-Sell to Other Content ??Ability to Upsell Ad-Ons to existing Premium Content	??Usually, the game is bought before playing. ??Cross-Sells to Other Content
Budget	??Smaller budgets (under \$100k)	??Larger budgets (in the millions)
Licensing / Branding	??Often uses original brands and intellectual property.	??Often uses big-name licenses, sometimes based on movies or other brands from the cartoon or comic world.
IP Ownership	??Developer typically owns their intellectual property	??Developer usually works with larger licenses
Areas of Risk	??Out-of-pocket expenses for funding development of own game. ??Not getting proper promotion for title – either on developer or publishing partner’s website	??Chance a publisher will cancel deal. ??Limited retail shelf space – highly competitive ??Lack of marketing ??
Bottom Line	??Hit-Driven Business	??Hit-Driven Business

B. Design Considerations

Web and Downloadable games have a unique set of design considerations. Many important issues in the development of Web and Downloadable games are common to all game design, but the nature of the audience, business model, and context of these games shapes their design philosophy. We know that Web and Downloadable game users play these types of games for three reasons: diversion, competition and socialization. These reasons are not mutually exclusive and the best games touch on all of these elements in one way or another.

1. Meaningful Play and Transparent Rules

At the heart of game design is the idea of meaningful play, the idea that players interact with a game in ways that produce clear and purposeful results. What differentiates games from other forms of media is that players engage the game's system to change it in meaningful ways. This idea of meaningful play is manifested in a number of ways in Web and Downloadable games. First, there is the importance of understanding basic gameplay; players' actions must elicit clear and understandable responses.

In a similar vein, it is important that the rules of a game be transparent. Just as the basic interactivity needs to be entirely comprehensible, so the rules of the game should also be at best intuitive and at worst easily grasped by players. In even the most complex computer games, rulebooks are used only for reference; most of the play is learned through experimentation and in-game instruction. Similarly, a web or downloadable game's rules should be intuitive and require no more than a one-screen help or simple tutorial to thoroughly understand.

2. Interactivity

Another aspect of meaningful play is the game's core interactivity. It is essential that players have a sense of their own participation in the game, and that there be some meaningful choice in the player's actions. The level of interactivity could be as simple as pulling the lever that rescrambles the gems, as engaging as the steering of a race car, or as rich as the deployment of multiple tactical units. Nonetheless, in each case, players must see clear, purposeful effect of their actions and have a sense that their choices (when to reshuffle, which way to turn, where to place unit X) in some way influence their success or failure.

The issues above are concerns for any game design, whether for console, retail PC, or Web and Downloadable games. However, the design of Web and Downloadable games has its own set of issues that differentiate it from other game media. Many of the issues arise from the technical and cultural considerations of their distribution; others are a result of the preferences of their audience. The sections below address the way that these concerns influence design.

3. File Size and Internet Distribution Designing for Various Computer Systems

In the Web and Downloadable world, the size of a game is of critical importance to its marketability. Even though broadband adoption is growing rapidly, it has still only penetrated approximately 50% of all US households. This means that large file sizes still present a significant obstacle to a narrowband user and to a lesser degree a broadband potential buyer. Generally speaking, games over 8-10 MB suffer losses of sales due to the delay in the initial download. The exact minimum number varies from portal to portal, but smaller is universally better. In fact, RealArcade currently highlights games that are less than 5 MB as "Fast Downloads", a sign of their interest in appealing to users with slower connections. This means that developers should pay close attention to the scope of their games, and should weigh number of assets and compression issues against the final size concerns throughout the development process.

Since 50% of US households are still on narrowband connection, it can be critical to offer a free web version of downloadable games to entice users to download the 5MB or greater downloadable game version, particularly in the case of larger games. Most casual, narrowband users do not have the patience to download a 5 megabyte game file or larger for an unknown game. There are three exceptions to this rule where a free web version is not as critical:

1. Branded games like Monopoly or Scrabble. Users know what they are downloading.
2. Public domain games such as Bingo, Solitaire, Poker or other derivatives.

3. Users with broadband connection. If a user has a broadband connection, they can very quickly download and install a game and, therefore, web demos are not as critical.

Web game file sizes tend not to be greater than 1 megabyte. This file size is a quick download for a broadband user and a reasonable file size for the narrowband user.

4. Compatibility

Similarly, due to Internet distribution, developers of downloadable games need to consider issues of compatibility. Potential consumers will be using computers with a wide range of processor speeds, memory, and operating systems, with many users working on computers at least two years old.

Developers should take care to match current minimum specifications to the average home computer, and be careful to test new games on a variety of different platforms and performance levels to ensure that the game functions optimally across the board. There are limitations to the extent to which a developer can test a game for every video card and start-up application, but developers should create games that can run equally well on a variety of computer speeds, memory capacities, operating systems, and standard hardware set-ups. Typical Specs for which Web and Downloadable games are designed for 2004 follow:

```
PC
Windows 98/ME/2000/XP
500MHz processor
32 MB RAM
Sound Card
SVGA Graphics Card
DirectX 7
Mac
Mac OS X: Any version
CPU: G3 @ 500 MHz
RAM: 128MB
```

The technical requirements for Web games (web demo, web games) tend to be around the same as Downloadable games. However, due to the fact that Web games are typically run inside a "virtual machine" (Java, Flash), and the file size limits the number of assets that can be added, the richness of the Web game tends to be more limited than the Downloadable game.

C. User Interaction

The expectations and interests of the casual audience also play a major role in the design of Web and Downloadable games. As cited earlier, the consumers of casual games are a different demographic than other game players, and play games for different reasons. These differences lead to a particular set of interactive guidelines.

D. Depth & Complexity of Web and Downloadable Games

An important issue is the complexity of games. Considering the normal play periods of Web and Downloadable games (short) and the game experience of the average players (limited), it is not appropriate for Web and Downloadable games to have wildly complex systems that require careful, constant attention and deep strategic thinking. A real-time strategy game with hundreds of units to choose from, or a 3D world with miles of virtual space to explore presents an experience designed to captivate a dedicated user for hours of intense play. However, many people play Web and Downloadable games to take a relaxing break from work or to pass the time with something engaging. This means that Web and Downloadable games should be based on simple core activity that leads to emergent complexity. Initial access to the game should be easy, and the difficulty and engagement of the game should come from doing that same basic activity in increasingly challenging environments. In other words, the game should

give the player a simple way of interacting that becomes a rich experience in the game's context. More complex forms of interactivity, as the real-time strategy game mentioned above, often have steep learning curves that run against the casual interests of the audience. This desire for simple core interactivity has a number of implications. First, a casual audience is generally not interested in memorizing complex macros or commands to understand a game. Thus, Web and Downloadable games are predominately mouse-based, either exclusively or with wholly optional hotkeys. When Web and Downloadable games do use the keyboard, it is almost always limited to arrow keys and a single action key. Thus, the core activity of the game is also fairly simple: clicking on a pair of grid squares to switch two objects, moving the mouse over a deck to reveal a card, or dragging an item from a palette to a specific spot on a game field. The complexity of the game comes from the way that simple interactivity mechanic is used in the context of new levels and available resources (new things to swap, new cards to see, new terrain on the field to negotiate).

In addition, the game should require very limited help to understand. Even more than other kinds of games, Web and Downloadable games should not require players to read detailed instructions or experiment extensively to grasp basic game concepts. Anything that is so complicated that it requires more than a single page of simple help or (at most) a tutorial first level is most likely too complicated for the market. It is also important to keep in mind that many of the tropes that hardcore gamers have internalized are not part of many Web and Downloadable players' vocabularies. This means that what may seem standard conventions to gamers (e.g. asdw for movement, smashing crates to get health) will be lost on a large part of the Web and Downloadable game audience. This is all the more reason why the basic gameplay must provide clear and consistent feedback.

E. Rewarding Players

Another side of this casual audience is the desire for an immediately rewarding experience. Unlike hardcore gamers, the Web and Downloadable games audience is not as interested in struggling against a system for hard-won victories and slow progress. Instead, the casual gamer is generally looking for more instant gratification. This means that it is essential that Web and Downloadable games have clear feedback on a player's actions, and ample rewards for the fulfillment of the core activity. Basic actions can be rewarded with points, additional game content can be unlocked frequently and quickly, and simple in-game prizes such as titles and medals can be given out freely. Attention to the visual and audio rewards for all positive moves should be a priority.

Examples of games which do a great job of rewarding players include:

- ?? Big Kahuna Reef by Reflexive Entertainment (<http://bigkahunareef.com/>) – Players who successfully complete a level are able to “unlock” new fish to add to their online aquarium.
- ?? Feeding Frenzy by Sprout Games (<http://www.sproutgames.com/feedfrenzy.php>) – Players who successfully complete some levels get to install screen savers for later use.

F. Forgiving Game Play

Web and Downloadable games should be very forgiving, particularly in the early part of the game. The game should not punish players too harshly for initial mistakes, and should give new players time (whether it be in early levels or beginner's modes) to learn the core interactivity. The grace period can last quite far into the game, with the difficulty only ramping up well into the experience. Consider that the majority of this audience prefers games such as Bejeweled Easy Mode, which is very difficult to lose unintentionally. Difficulty should be less of an obstacle that players must struggle to overcome than a natural growth that matches the player's increasing expertise of the game. Overall, increased rewards for successful actions and reduced penalties for early mistakes are key components to making a successful game for the Web and Downloadable game market.

The consumers driving the Web and Downloadable games market generally do not see themselves as “gamers” looking for a deep challenge. Often, they are looking for an immediately fun and positively rewarding entertainment experience similar to the benefit one receives when tuning into a trusted primetime TV show that provides a mental escape with a minimal learning curve.

G. Game Mechanics

The contributing factors of distribution, technology, and audience have shaped the current Web and Downloadable content offering. It is for these reasons that the Web and Downloadable gaming industry does not consist primarily of first-person shooters and tactical simulations. Instead, genres have emerged that address the needs of the Web and Downloadable games market.

As mentioned in the introduction, Web and Downloadable games have been largely dominated by a surprisingly small number of game play styles. Puzzle games make up the largest single group, followed closely by a variety of simple arcade games, word games, and classic card and board games. Within these larger genres, most Downloadable and Web games segment further into a handful of specific types.

1. Matching Games

Description: Players are faced with a grid of a limited variety of objects. The objective of the game is to swap, drag, shoot, or transform these objects to create sets of two or more, which then disappear for points. These games often contain "power-up" objects that clear larger parts of the grid or award bonus points for sets including them.

Match-Three Examples: Bejeweled 2 (PopCap Games), Jewel Quest (iWin), Walls of Jericho (Full Armor Studios), Zuma (PopCap Games)



Figure 1: PopCap's "Bejeweled 2" demonstrates a match-three game mechanic.



Figure 2: "Candystand Mah Jong" (Skyworks) demonstrates another kind of matching mechanic.

2. Find Subsets

Description: Players are given a number of objects, a timed end point manifested as a clock, and a steady increase in the number of objects. The player's role is to find sets within the field objects based on a particular criterion (similar color, shape, etc.). Correctly finding and selecting these sets earns the player points and delays the end point.

Examples: Super Collapse (GameHouse), Puzzle Express (Hip Soft), Dynamite (PopCap Games)

A notable specific case in this genre is the *word game*. In this case, the rules of the game's language determine a correct set. Points are often given for correctly spelled words, with greater rewards being credited to players who spell longer words and/or words with rarer letters.

Examples: Word Whomp (Pogo), Word Jong (Pogo), Bookworm (PopCap), TextTwist (GameHouse)



Figure 3: "Adventure Inlay" by GameHouse is a variant of the finding subset mechanic.

3. System Management

Description: The player is put in charge of a small ecosystem of objects that interact in a variety of ways. The player may add, remove, or alter objects in the system to create particular effects and thus earn points.

Examples: Insaniquarium (PopCap Games), Diner Dash (gameLab), Lemonade Tycoon 2 (Jamdat)



Figure 4: PopCap's Insaniquarium uses system and resource management as its core game mechanic.

4. Breakout Variants

Description: The player controls a paddle, and uses the paddle to ricochet a ball into a set of blocks. The goal is to clear the screen of blocks. Power-ups alter the core game in a few ways including speeding up and slowing down the ball, making the paddle sticky, or increasing the number of balls on the screen.

Examples: Magic Ball 2 (Alawar Entertainment), Rebound: Lost Worlds (Reflexive Entertainment), Blasterball (Wild Tangent)



Figure 5: "Magic Ball 2" (Alawar Entertainment) is a variant of a Break Out game mechanic.



Figure 6: "Rebound: Lost Worlds Recharged" (Reflexive Entertainment) represents another popular Break Out game variant.

5. Casual Sports Games

Simple sports games that are very forgiving and generally accessible to the widest audience possible in terms of game controls and game objectives. Examples include: Table Tennis (Shockplay), Pin High Country Club Golf (Skyworks), and Backspin Billiards (Pixelstorm)



Figure 7: “Pin High Country Club Golf” (Skyworks) is an example of a casual sports game that is accessible to a wider audience.



Figure 7: “Gutterball 2” (Skunk Studios) bowling – a casual sports game that most people can play.



Figure 9: "Table Tennis" (Shockplay) – another known casual sports game that is approachable to most.

6. Card & Parlor Games

Description: This genre includes a variety of traditional playing-card games and parlor game favorites.

Examples: Ancient Tripeaks Solitaire (Toy Box Games), Hearts, Spades, Saints and Sinners Bingo (Oberon Media)



Figure 10: Nickelodeon's "Danny Phantom Dueling Decks", an online-only card game.



Figure 11: "Saints and Sinners Bingo", published by Oberon Media, brings a popular game to the online game world.



Figure 12: "Ancient Tripeaks Solitaire" (ToyBox Games).

7. Other Arcade Variants

This genre includes a variety of traditional arcade-style gameplay. Examples include: Feeding Frenzy (Sprout Games), Hamsterball (Ratisoft), Varmintz (Skunk Studios) Snail Mail (Sandlot Games)



Figure 13: "Feeding Frenzy" (Sprout Games).



Figure 14: Candystand's "Gummi Bunnies Egg Hunt" (Skyworks Games).

While this list is by no means exhaustive, even a glance at the games available in the Web and Downloadable games marketplace reveals a preponderance of games that fit within this handful of categories. There is also a strong degree of overlap among the games within a single category, such that many games have nearly identical mechanics and are only differentiated by narrative context and visual

style. In fact, there is a deluge of derivative games in the Web and Downloadable game market that seek to capitalize on the success of a proven mechanic. As the Web and Downloadable game industry grows, new game play, design and genres will emerge and evolve to the next level.

8. *Innovation beyond the Tried-and-True*

Innovation in the Web and Downloadable games field must still adhere to the principles of user interactivity and audience expectations as described in the previous sections. The casual gamer is simply a different user group than the hardcore gamer, and the kinds of experimentation and approaches that appeal to the latter may not be successful with the former. Of course, there have been examples of games that have provided different gameplay styles that have also been successful in the Web and Downloadable game market. "Insaniquarium" and "Lemonade Tycoon 2" are both games that have previously unseen game styles for Web and Downloadable games. They both have been commercially successful. Web-only games have seen even more radical experimentation. Games such as Grow (<http://www.eyezmaze.com/grow/v3/index.html>), Samarost (<http://nlp.fi.muni.cz/~xsvobod4/amanita/samorosti/intro.html>), and Squares 2 (<http://www.albinoblacksheep.com/flash/squares2.php>) all demonstrate the ways Web-only games can push the boundaries of typical play patterns. Thus, there are possibilities with the constraints provided by a casual audience for new play styles, both as modifications of tried-and-true genres or as more dramatic experimentation.

iWin's Jewel Quest is a good example of a game which evolves beyond its predecessor, Bejeweled, in a meaningful way.



Figure 16: "Jewel Quest" by iWin.



CASE STUDY

CASE STUDY: Jewel Quest – Moving Beyond Cloning Popular Games

Written by Jim Stern, Iwin

Jewel Quest

Match-Three games have done well historically and have proven to be quite addictive. We wanted to take a familiar concept that people already enjoy and raise it to a level that is much more exciting and engaging than it's ever been.

With that in mind, we added new properties to the jewels (such as buried relics that require multiple matches before they can be removed and cursed items that can wreak havoc on your progress under special circumstances), new layouts (such as different shaped boards and areas that are inaccessible), and more importantly, a specific goal to complete each board (turning all the tiles to gold).

These relatively simple concepts, when combined in different ways, allow for great variation and ramping of play levels to provide hours and hours of challenging game play. On top of this, we felt it would be fun to have a compelling storyline to engage the players -
- a thematic storyline with immersive graphics and a map to track your progress as you get further into the game.

The challenge in defining the game, though, was making sure we could get people engaged quickly enough to experience the exciting new features in the first hour of game play while not frustrating them with overzealous puzzles. It's a fine balance. The game has to set the stage for early successes (by providing easy boards and helpful hints) that will make the game playable immediately. Yet, at the same time, the game must gradually increase in difficulty and introduce new features that will encourage the player to want to find out what surprises lie ahead.

H. Incorporating Aesthetic Themes (Formatting)

Beyond the formal concerns of gameplay mechanics, there is also the question of aesthetic themes. The Web and Downloadable game audience has different cultural position and tastes than the hard core game audience. Thus, the question of the type of visual and audio themes to use in a game can be critical to its success. Generally speaking, the Web and Downloadable game audience is more closely tied to mainstream culture than the hardcore audience, and is more likely to respond to graphic styles, music, and content that relates to that pop culture sensibility. Of course, some of this is as straightforward as watching trends in media; pirate games are likely to do well when pirate movies are blockbuster hits. However, there are also a few other overarching ideas that can be drawn from the user expectations listed above. The brooding, dark tone of many console games is often a turn-off to a casual market. Web and Downloadable games appeal to a casual audience and should generally be less graphically violent, more fun, and skewed to more inviting and eye-catching visuals and sounds.



Figure 17: Themed games, as in the case of PopCap's "Zuma Deluxe" can add to the entertainment value of a great game mechanic.

1. Narrative and Character

One common way to create a consistent theme for a Web and Downloadable game is to frame the game in a narrative. In Web and Downloadable games, the narrative often serves as the center of the game's visual and audio universe. For example, a game may have an ancient Roman theme. In this case, that narrative (an ancient Roman setting) can inform a number of different aspects of the game, including menu layout, font choice, color palette, musical theme, achievement titles, etc. This narrative selection gives the game an identifying flavor and provides designers with a conceptual center for decision-making at every level of game's production.

Of course, the expectations and time commitment of the audience also shapes the way narrative appears in Web and Downloadable games. Unlike hardcore gamers, casual audiences are rarely looking for extensive stories from their games, and are not interested in reading long passages of flavor text or waiting through hours of cut-scenes of back-story. Instead, in Web and Downloadable games, narrative elements should be designed more to convey an atmosphere and a vague plot progression than to tell a detailed story with complex characters and convoluted plots. Narrative elements should be short and easily scanned, so that even if players do not focus their attention on studying the story pieces, they should clearly glean the theme.

Narratives are often used in Web and Downloadable games as a "skin" for an otherwise abstract game mechanic. A game which is simply about shuffling shapes around a grid can seem cold and detached to a player, so providing the game with a narrative backstory is often an effective way to get the player to connect with the system. In this case, it's important that the narrative have some connection to the formal quality of the interaction and gameplay. As much as possible, the game mechanic should feel like a natural part of the narrative experience. Characters are a particular narrative component that serves this reskinning purpose very well. A character can provide a friendly face and voice to an otherwise distant game, and is useful as a framing device for tutorials, in-game help, and level progression. Such characters should be designed to be fun and sympathetic to the audience, simple enough to be grasped quickly but with a clear visual identity that is consistent with the game's larger themes.

Narrative elements can also be used as rewards to keep players interested in progressing through a game. Narrative bits such as short chapters of text or additional pieces of a map can be enticements to

play the next level and to finish a game. Of course, it is essential to keep the narrative elements limited; the emphasis should be on creating a fun game and not on writing a great novel. With that in mind, it is possible to create simple stories of progress through the game. A basic example of this narrative structure is *Feeding Frenzy*, in which a map between levels charts the fish's progress. A deeper narrative reward structure can be found in *Fate: The Carnivale Game*, where a successful series of card games earns another paragraph of the main character's history. In all of these cases, the game's story is a reward that compels the player to keep complete levels and progress in the game in order to complete the narrative.



Figure 18: "Inspector Parker" uses character and narrative to appeal to its audience.



CASE STUDY

CASE STUDY: Use of Narrative and Character in Games

Written by Jane Jensen, Creative Director, and Jessica Tams,
Producer, Oberon Media

Inspector Parker

In *Inspector Parker*, a puzzle game by Oberon Media, characters and simple narrative are used to give interest and flavor to a logic puzzle game. The game has a Clue like murder mystery theme, made light and family-friendly by tending towards the cartoony rather than the dark and frightening. In the game you match up possible elements of the mystery based on clues such as "Boris was in a room above the Knife". The basic gameplay is simple, but the addition of a cast of murder mystery suspects, each with a humorous description and strong character art, made the game much more appealing.

As the game advances and you get to match up more and more elements of the crime, such as determining the motive (from a set that includes 'the will', 'the family jewels', 'the illegitimate baby' and 'rage') and body disposal method ('burying', 'putting it in freezer', 'bricking it up in a wall', etc) the tongue-in-cheek humor add to the enjoyment of advancing. Providing an easily understandable theme, such as the elements of a murder mystery, helped humanize and give instant recognition to what could have been abstract and even complex gameplay mechanics.

BeTrapped!

In a pseudo-sequel to *Inspector Parker*, the game *BeTrapped!* took another step towards character and narrative. One of the consistent customer feedback received on *Inspector Parker* was that people liked the characters and props but wanted more of a real story surrounding them. In *BeTrapped!* the player solves Minesweeper-like puzzle boards, revealing hidden booby traps based on the colors of adjacent tiles. In the adventure mode, after each room of the house has been de-trapped, the player can look around and get clues to the game's murder mystery storyline, either by questioning a character in the room or discovering a bit of evidence. These chunks of story keep the player wanting to solve the next board. A player who makes it through the entire game is given the opportunity to guess the killer, motive, weapon and so on in the final cut scene.

An important consideration in designing story and character for casual games is to keep it light, keep it family-friendly, and chose genres that appeal to women. The murder mystery theme of *Inspector Parker* and *BeTrapped!* is one example of a genre that has traditionally been popular with women. Other casual games, like *Jewel Quest*, have been successful with an Indiana Jones type adventure genre. Other female-friendly genres, like fairy tales (once popular in PC games like *King's Quest*) or romance, are still untapped in the casual game market. Genres such as heavy sci-fi and D&D fantasy are best avoided.

Similarly, when writing characters for the casual game market, keep your target audience in mind. The hard-core gaming market is all about being 'edgy' and often dark, dangerous, even freakish. A typical character might be a street punk or a blue-haired, big-breasted kung fu babe. In contrast, the successful casual game titles tend towards the cute, the colorful and the humorous – more *Donkey Kong* than *Tomb Raider*.

I. Skill-based Games Production and Design

Successful skill game sites use some type of ranking system to classify players into competitions where everyone has a similar skill level. To be legal, the outcome of online cash competitions must be based primarily on skill and not luck. Thus, a player's score range in a certain game will tend to fall within a narrow band. If all players were allowed to compete in the same competitions, a handful of the best players would win every challenge. This would discourage the losing players from playing on the site, which would, in turn, hurt even the best players by narrowing the field of potential competitors they can play against. However, the task is a lot harder than it sounds.

One issue is how to measure how "skilled" a player is. If it is done by average score, a player can "game" the ranking system by deliberately scoring low in low-prize tournaments in order to be able to easily win high-prize tournaments. Thus ranking systems are based on complex formulas that take into account many factors, such as win-ratios, lifetime winnings, average scores, and number of cash competitions played.

Another issue is how to handle new players. If new players start out at a middle rank, but are not very good, they will lose all of their initial competitions, get discouraged, and leave before the site has collected enough information to give them a more suitable rank. But if new players start out at a low rank, and are already a skillful player in the given game, they will "eat up" the competition until their rank adjusts to a more suitable level. The typical way to deal with this problem is to make a new player's rank much more volatile than a veteran player's rank, in order to move them more quickly to a suitable level.

A final issue is how to use a rank once it is established. A rank can be used as merely a guideline, in an environment where players choose their own opponents, such as in a lobby-based matching system. Or, a rank can be used invisibly to funnel players into competitions of similarly-ranked players. But what does "similarly-ranked" mean? If defined too narrowly, there are too few players to form a competitive community. If defined too loosely, an unfair environment exists wherein certain players have a slim chance of winning. This is a delicate balance which requires constant monitoring and hard decisions.

1. Types of Online Skill Game Competitions

1.1 Limited Entry competitions (also called “Fixed Entry” or “Matched” competitions)

The identifying characteristic of a Limited Entry competition is that it contains a pre-established number of competitors; generally between two and 10 players. The competition ends when the final player signs up. Thus, while the number of players and the final prize (or prizes) are known in advance, the ending time is not. A Limited Entry competition might remain open for only a few minutes, or for days, depending on the number of players on the site, and the popularity of the game in question. Players rarely enter a Limited Entry competition multiple times.

1.2 Progressive competitions (also called “Progressive Prize” or “Progressive Cash” competitions)

These are tournaments where the ending time is set in advance, but there are an unlimited number of participants. Players are encouraged to enter multiple times, and generally do. Progressives generally last for a period ranging from one day to one week. The prize (or prizes) rise with each entry, so while the end time is known, the final number of players and the final prize(s) are not known in advance. Progressives can frequently attract hundreds or even thousands of participants in popular games.

1.3 Unlimited Entry competitions (also called “Guaranteed Jackpot” or “Guaranteed Cash Pot” competitions)

These tournaments are similar to progressives, in that the ending time is established in advance and the number of entrants is not. The difference is that the prize (or prizes) is fixed, rather than rising as the number of entrants rises. The prize is often in the form of merchandise rather than cash, such as consumer electronics, jewelry, gift certificates or travel packages.

1.4 Head-to-Head Challenges

These are 2-player matches played in real-time, generally in a turn-based game such as chess or pool. Players select their opponents via some type of game lobby. If a ranking system is used, it is merely as a guide to help players choose their opponents, rather than a dictatorial matching system.

1.5 Ladders

A ladder is a permanent, or at least multi-month-long, competition composed of many sub-competitions. Players are arranged on the ladder from best to worst, based either on a preliminary “seeding tournament” or a metric such as rank or lifetime winnings in that particular game. Once qualified, a player can challenge another player who is above them on the ladder. Typically they are only permitted to challenge those who are several “rungs” above them. If the challenging player wins, or if the challenge is ignored, the two players swap positions on the ladder. If the challenger loses, both players retain their positions. Thus, players attempt to battle their way to the top of the ladder. In addition to the prizes for each individual ladder challenge, there may be prizes for the top player or players as well as the bragging rights the leaders gain from holding the top spots.

1.6 Brackets

A bracket is a series of 2-Player competitions, with winners playing each other in a progressively-narrowing field, until a final competition decides the winner of the bracket. Because of the structure of a bracket, the number of participants must be a power of 2 –16, 32, 64, 128, and so forth. Therefore, a bracket involves some type of pre-competition registration period, in order to fill the fixed number of competition slots. Players have a set period of time, such as 24 hours, to play their bracket game. If the game is not played, they forfeit the game and their opponent moves on. Like progressives, brackets can be competitions with many players and large prize pools. Unlike progressives, however, which reward a single stellar performance; brackets reward players who maintain a consistently good level of play.

1.7 *TopThis!*

Essentially, this is a one-player competition. A player is given a target score based on his or her own past performance in the game. The player then attempts to beat that target score. If the player beats the target score, a prize is awarded. This type of competition is not offered to brand new players because of the need to collect a history of player scores in order to establish a relevant stretch target score.

J. Designing for Upsell of Premium Content

Game developers who create premium versions of content (played or accessed online) hope that customers will pay money for these titles. To persuade customers to pay money for titles, developers must offer a compelling play experience that customers feel is significantly richer than the free web game demo equivalents. Since players will frequently experience the game via an online version first, and then download and install the game on their PC, there must be significant motivation for a customer to proceed to the downloadable version. Customers are typically motivated by one or more of the following reasons:

1. Deepening Gameplay Over Time

During the trial period, the gameplay convinces the player that one will want to continue to play this game over and over. Developers want to ensure the customer isn't questioning, "It was fun for an hour, but will it get any better if I purchase the full game or is it just going to be more of the same?"

2. Higher Quality Experience

Premium content offline play is usually full-screen and advertising-free, typically with enhanced graphics and sound.

3. More Competitive or Instructional Gameplay

Premium content downloadable versions of games can offer more levels and deeper gameplay, appealing not only to competitive players, but also to players who want to learn more about the game. "Untimed" or "puzzle" modes cater to players who want to improve their gameplay. Whether for skilled players or those eager to improve, good game design should provide a path for all levels of gamers to build loyalty to the game.

3.1 Benefits of Offline Play

Offline play is emphasized as it does not tie up phone lines, which is important to the majority of the dial-up connection audience and laptop users who may not always have an available Internet connection. Games that have been downloaded to a laptop can be played while traveling, and at other times when an Internet connection might not otherwise be present.

3.2 Using the free trial version to close the deal and make a sale

With downloadable games, the ultimate goal is to convince the player to purchase the full game. Sometimes this can be accomplished solely with a web version, but usually a player will evaluate a free downloadable trial version of the game before making a purchase. The trial version must be carefully designed to motivate players to purchase. It's a difficult balancing act to make the free trial version compelling enough to motivate the customer to buy the game without giving away so much gameplay in the free trial that the player has had their fill.

3.3 Content Limiting

Many games will include the first X number of levels (or the first mission pack) in the free trial version and require a purchase to play additional levels. Typically a player can re-play these demo levels indefinitely. This is how demos of retail CD-ROMs games are usually designed. Some downloadable game developers also use this model for their games. In this type of trial version it is especially difficult to decide how many levels to give away. Including too many levels in the trial version can leave little reason for the

player to buy the full version since the trial is satisfying, but not including enough levels in the demo to give the player an experience of what makes the game fun, can damage purchase potential.

3.4 Feature Limiting

A common way to differentiate the trial version from the full version is to lock out some features in the trial version. The player must purchase the full version to unlock these special features, such as: Internet high score posting, level editors, expansion packs, or special content such as power-ups or alternate game play modes. By allowing the player full access to many levels, the player can fully appreciate what makes the game fun, but those few locked out features can motivate the player motivation to the purchase.

3.5 Time Limiting

Most large distributors prefer that all their games are limited to a specific amount of play time during the trial period. After 60 minutes of play, the game becomes unusable unless the player purchases the full version. This can be a very effective way to give the customer a full, featured trial play of the game. Players are allowed to experience every feature and play every level they can reach during the trial period. This gives the player a realistic sample of what the purchased game will be like and allows the game designers to show off his best levels to convince the player to buy, without worrying about giving those levels away permanently; the player will only be allowed to play the levels for a short amount of time.

Many developers use some combination of content limiting, feature limiting and time limiting. In many distribution channels it is not possible to distribute a content limited trial version of your game. Developers may have to design the game to do an effective job of up-selling itself based on time limiting alone.

Developers who wish to sell their game through many distributors should not design their game to be dependent on content or feature limiting. The type of DRM technology used by some very prominent distributors does not allow a game to differentiate whether it has been purchased or is running in a trial mode. These distributors will require that the game be fully functioning even during the free trial period.

3.6 Pacing of new content

Many games introduce new content as the game progresses. Background, environments or tile sets may change as the player progresses through the game. An action game may have basic weapons and enemies on the first few levels and more advanced weapons and enemies as the player reach higher levels. This is an effective way of keeping the player interested in the game and seeing what is next. During the trial period, it is critical that the introduction of new content does not plateau. Shortly before the trial period ends, the player should reach new content and anticipate even more new content if he continues on to purchase.

3.7 Visibility of games size/scope

Another effective way to help convince the player to purchase the full version is to visually display how far the player has progressed in the game. It is one thing for the up-sell screen to boast "over 100 levels in the full version", it is even better if the player can visually track progress through the game and determine that he is only 10% of the way to the final goal. Showing a "world map" between levels can help a player visualize where the player's avatar will journey. Maps should show not only progress, but more importantly, how far there is to go. Depending on the theme of the game, a grid of level thumbnails, a progress bar, or a rank chart may be more appropriate than a world map. However it is accomplished, it is powerful to show the player that there is much more left to explore in the game, and to demonstrate this in a more meaningful way than just a number on the up-sell screen.

3.8 Head to head play

Providing some form of multi-player capability can give a player plenty of reason to want to play well beyond the trial period with assurance the game will never be the same twice. Playing against real opponents always keeps a game fresh and unique because each opponent is different, and even the

same opponent will change one's play over time. Multi-player can mean network play, multiple players on the same computer, and each player takes a turn on the same computer simultaneous.

3.9 High score

Competing for high scores can be the simplest form of competitive play. Having the ability to post high scores on the Internet and compete against other players worldwide can give your game the re-playability that creates upsell and viral marketing.

3.10 Viral Marketing

Some games have score functionality integrated into the game. At the end of the game, players can e-mail their friends and challenge them to play the same game and to beat their score. There is a direct link to the game inside the email.

3.11 Refreshing content

Making new content available for download periodically after the initial purchase ensures that the game will always have something new and the player will have motivation to play beyond the trial period. Many successful games allow the player to download new levels, phrases, pictures, mission packs, puzzles, or other content for the game. Including a level editor in the game can enable a community to provide endless content for your game.

3.12 Chatroom-enabled Content

Some developers integrate chat lobbies in to web versions of their games. For example, many of the online games at Pogo.com have chat rooms integrated into the game which encourage social interaction and community.



Figure 20: Pogo's online version of "Word Whomp" is chatroom-enabled.

3.13 Instant Gratification

Some DRM technologies allow the purchase of the game or level to be made during gameplay. Rather than exit the game and return to the launch page or to the web site to purchase the game, the player can purchase while the game is paused. This allows players to stop the action when a locked features is accessed or when the trial time runs out. An upsell message can be more effective when it can inform the player that he will be able to continue his game in progress if purchases right now. If this technology is used, developers can design the game to best leverage this sales technique. For example, a developer

could disable the Internet high score posting in the trial version, and then offer the player the ability to post the score he just earned, but only if he buys the game right now.



CASE STUDY

CASE STUDY: Use of Online Features to Upsell

Written by Bryan Bouwman, Hipsoft Games

Using Online Features to Upsell Your Game

HipSoft has been integrating various online features in its games since the company started. To date, all of their online features are optional and none of the games require an Internet connection to play. Early HipSoft games used simple high scores systems to make the gaming experience more competitive. More recent games have progressed into more advanced features that create increased value for the end user. HipSoft has also developed a suite of robust client and server side software that makes these features available to users with virtually no downtime. The client software has to handle all firewall and networking environments, as well as being portable to other platforms. For this reason, all HipSoft network communications employed to date use the HTTP protocol. Currently, most HipSoft games are available on Windows and Macintosh platforms and in the future they will be available on PocketPC, Cell Phones, Game Consoles and others—utilizing the same set of network servers.

Although HipSoft employed basic top ten high scores in its first batch of released products, the first game to truly employ more advanced high scores is Digby's Donuts. Digby's Donuts has a top 20 all time high scores list and a daily top 20 list for both modes of play. The daily high scores are a very popular feature because a larger portion of players have a greater chance of getting their scores on the list. After a game has been out for a while, and the number of players increases, obtaining a spot on the all time high scores list can be quite a challenge for the average player. This may create a feeling of dissatisfaction among players who want the accomplishment of seeing their name and scores published. The daily scores list solves this problem nicely; it works by tracking when a score goes live and erasing it after 24 hours. Since users are from all over the globe, this works much better than users trying to clear the whole board at some specific time every day. The users also get a ranking value if they make it on the top 1000 scores for both daily and all time. This way, even if they're not in the top 20, they can still see their rank. The goal is to make the high scores a fun, satisfying and useful feature for as many users as possible—not just the very best players.

Flip Words is the first game HipSoft produced with the capability to download new game content via the Internet. Every time a new game starts, the client can download a new batch of phrases from the Flip Words content server. Since users are able to add new phrases to play, the game remains fresh and fun for a long period of time. The game also has functionality for users to create their own phrases and send them to the server for approval. Not only is this process fun for many users, it is also a great way to acquire new content! The only cost to HipSoft for this very successful feature is operating the servers and employing an editor to approve submissions. In Flip Word's first year, HipSoft received nearly one million phrase submissions, of which around ten thousand were approved (most were automatically filtered by the server software because they were duplicates or contained prohibited words.)

Puzzle Express is another HipSoft game that can download new content via the Internet. In this game, the content is image data instead of text phrases. Although the game ships with over 100 images, hundreds of additional images are available via the content servers. This allows HipSoft to keep the download size reasonably small while still providing a large amount and variety of content for the users to enjoy (as opposed to seeing the same images over and over.)

Trivia Machine is the first HipSoft game to have an automatic content updater. In addition to downloading new content (in this case, more trivia questions) the content updater

feature allows the existing game content to be updated, should an error or necessary change be needed. For example, some questions in Trivia Machine were determined to be more difficult than their original ranking. The content update feature allows the ranking to be adjusted even after the game has shipped. This feature is also very useful for fixing minor typos that users may report via support emails.

Future HipSoft games will employ all of the features described above as well as introduce new multiplayer capabilities. By creating a reliable server back-end system and simple-to-use client side interfaces, HipSoft games are able to deliver additional Internet features without added complexities that are inappropriate for the casual gaming audience. The end result is a product that can provide a more enjoyable and lasting gaming experience for the user.

K. Production Issues

The lower financial stakes of Web and Downloadable games make it possible to explore a variety of innovative and unusual topics and game mechanics. However, even a small game can go over budget and schedule without proper planning and management. Developers of Web and Downloadable games face numerous production constraints.

1. Process Differences

The differences between Web and Downloadable games as compared to consoles and other more traditional game platforms (e.g., GBA, PS2, and Xbox) are the following:

1.1 Smaller teams

The smaller project size of Web and Downloadable games usually means smaller development teams in which each team member must wear multiple hats. The game designer or programmer may double as producer; the concept artist, lead artist, and art director may actually be the same person; and everyone on the team will put in time as a QA tester. As a result, management overhead may be reduced considerably and breakdowns in team communication can be less of a risk. However, projects may be more complicated to plan and budget when a single person is doing multiple tasks. While the smaller scope of Web and Downloadable game projects would seem to make the project management simpler, in reality this simplicity is offset by the fact that most developers of such games need to produce several games concurrently in order to meet their cash flow requirements.

1.2 Working with distributors to publish your content

Although the distributor/developer relationship in the Web and Downloadable space is often likened to the publisher/developer relationship in the traditional retail space, they are actually very different, since distributors in the Web and Downloadable space do not typically share the financial risk of development. The developer assumes all of the up-front risk, while the distributor is typically not involved until much later in the development cycle when the game is nearly complete. However, even at this stage, the distributor can provide invaluable feedback and beta-testing resources to help guide the final tuning and polishing of the game. For downloadable titles that are being self-funded by the developer, there is often no specific budget, but instead a more flexible number that evolves out of a compromise between the cash-flow reality and a sense of the product that is needed to compete in the marketplace.

Developers working on self-funded original titles may be able to enjoy a more organic, iterative process of creating games. When a publisher's financial oversight is replaced by the developer's, the development process can be more flexible, but developers need to be careful to take advantage of this flexibility rather than fall victim to it. Developers also need to be aware of the additional effort involved in working with distributors. Often, the distributor will require that their branding be incorporated into framing and peripheral elements of the game. For web games, developers may be required to integrate distributor features for server-based services such as chat, rewards/loyalty points, high scores, etc. For downloadable games, additional time will also be needed for wrapping the game within the distributor's

DRM solution and possibly for producing promotional graphics and copy that can be used on the distributor's website. All of these things can add days to the end of the production cycle and should be planned for by the developer.

For Web and Downloadable games that are being developed to promote a particular consumer brand or product, budgets and timelines are usually immutable and therefore call for a more formalized management approach. Also, a significant portion of the development time is often consumed in incorporating the client's brand identity and getting approval for the brand's representation within the game.

1.3 Self-publishing

Whereas in the videogame space there is a clear cut between the publisher (i.e.: Activision), and the distributor (i.e.: Target), in the Web and Downloadable space the line is blurry. Online portals behave as the distributors and as the publishers in many cases, and this is a trend which will grow in the next couple of years. On the other hand, when there is not an exclusive distribution agreement with a portal, nothing stops a developer from publishing their game to their own web site. Attracting traffic is a big challenge. Please refer to the business model section of this paper for more information.

1.4 Working with Clients on a Work-for-Hire Basis

In many cases, developers tend to own their Intellectual Property (IP), whereas traditional game developers are often working for a larger publisher and/or with big licensed names on a work-for-hire basis where they do not retain rights to the IP they develop.

2. Project Constraints

2.1 Money

Games developed for the Web and Downloadable market are typically smaller in scope than retail PC and console games. Project timelines are much shorter and budgets are smaller. Whereas it is not uncommon for a PC or console title to have a development budget of \$5-10 million (US), downloadable games are typically produced for approximately \$50,000 to \$150,000 USD. Publishers rarely pay advances for original downloadable titles, so the risk usually lies with the developer. Smaller budgets mean smaller teams in which each member must possess a diverse skill set. The implications of this are discussed in more detail below under "Process Differences".

Advergaming typically have a fixed budget that is restrictive relative to the desired deliverable. The clients who outsource these games are looking to get as much out of their budget as possible and may not have a particularly deep understanding of what it takes to develop a game. Skill games usually take the form of lightweight Web playable games and have some additional constraints.

2.2 File Size

File size is an issue wherever digital distribution is concerned, and the mass-market audience targeted by successful games in this space is especially sensitive to large downloads. The most downloaded titles are typically less than 9 megabytes, and there is a sharper drop-off at 13 megabytes. This is particularly relevant to those publishers who are looking to extend the lifespan of titles in their back-catalog; titles that were originally designed for retail distribution are usually quite large in file size. The size constraints for web games are much smaller, with a 50-500KB initial download being the norm.

2.3 Technology

While hardware support is a concern for anyone developing computer games, it is particularly important for the casual market, where players typically are not interested in buying special equipment to make games run better. Developers should assume that their games are being played on machines that are a few years old and that were probably not even state-of-the-art at the time of purchase. Sound and video cards are not as robust, processing speeds are slower, etc.

Since downloadable game budgets are not usually large enough to support the development of custom technology, many casual game developers use higher-level middleware such as Macromedia's Director or Flash to develop their games. With these environments, developers can produce both Web and Downloadable versions of their games from a single source. It should be noted that reliance on middleware does mean working within the limitations of the latest version of the software. These technologies are discussed in greater detail in the Technology section of this White Paper.

2.4 *Deadlines*

The Web and Downloadable game market is less sensitive to seasonal purchasing patterns than the retail PC and video game industry. While this creates an opportunity to make the games highly polished before they are released, developers should be careful not to invest so much in the polish cycle that the games become unprofitable. Games that are created for a client, such as advergaming, typically have a much more rigidly defined schedule, especially if they are tied to an external event, such as a movie launch or product rollout. Seasons and holidays have a small influence in overall sales and traffic. It is better to spread out releases over the year to secure launches with distributors and portals.

2.5 *Publishing & Portal Needs*

Each publisher or portal may have different needs. One way to quickly understand what a publisher or portal desires is by reviewing what content is heavily promoted on their web sites. If possible, the best way is to talk directly to the portal or games site management. You never know how many developers are making another clone, and by the time you submit your game to the publisher, he may have another 10 games that are very similar.

Try to always provide something new. Revolutionary ideas can be risky, but very rewarding. At the same time, small improvements to proven formulas tend to be very successful as seen by Iwin's Jewel Quest.

2.6 *Builds*

Unfortunately, there is no standard in the way builds are submitted to publishers and portals. Most likely you will have to create 10 versions of your game for 10 distributors who will each have their own requirements. It's very important to abstract your calls and have separate functions for different DRM calls (see below on the DRM section). It's the same case with Publisher's and Portal's logos.

2.7 *Different types of DRM and their requirements*

- ?? Wrapper friendly exes (no self modifying),
- ?? Integrating DRM APIs,
- ?? Making games patchable (regardless of multiple wrappers)

2.8 *Summary*

Clearly there is no shortage of constraints for the developer producing Web and Downloadable games. However, these constraints can also be viewed as potentially useful design parameters that can help focus the development team (and ultimately the player) on the essence of the game experience they are creating. The key lessons from this section can be summarized as follows:

- ?? Know your customer
- ?? Build the game at the customer's skill level....not your skill level
- ?? Gameplay is king – make sure you have a solid game design
- ?? Differentiation: How is your game better or different from what is in the marketplace?
- ?? Consider building a game with a free web, downloadable and skill-based gaming component. Why leave money on the table but only focusing on one gaming version? Advergaming is probably the one area that is specific.

3. Risk Management

The keys to successful risk management are:

- ?? Continuously identify what can go wrong (risks);
- ?? Rank the risks at each stage;
- ?? Create a plan how to handle the risks.

From the very beginning of prototyping to working with distributors after all the work is done, risk management, like any project, big or small, is always a concern. The following section gives an overview for each section and identifies possible hazards that are relatively common in the Web and Downloadable production process.

The best way to limit your risk is to have a thorough schedule and adhere to it. Concept, proto, alpha, test, beta, test, gold are stages that need to be managed. The main fears are: "Have I spent enough time on any one and/or did I spend too much on any one." Another risk is that at any time during the production process, you may just not be satisfied with the games and may want to stop production wasting time and money for nothing. Finally, you could even end up with a great game but it may not sell. A game not selling well in the marketplace is probably the biggest risk, but let's discuss some of the other possible risks with individual elements and questions that you should be asking yourself before (if ever) you get to that point.

3.1 Prototyping

You have a great idea but not sure what to do with it? When does prototyping end and play testing begin? Is this the kind of game that you think is cool or is it the kind of game that you think will sell?

3.2 Play Testing & Beta Testers

Play testing is just feedback. The most difficult part is interpreting the feedback. Knowing your audience versus knowing your beta testers is critical to judging their comments and making changes to the game. It is critical to gather feedback from one's target audience if designing a word or puzzle game. Conduct user surveys, invite players to your office to play your game and *watch* them as they play. Don't invite experienced players – but try to find the mainstream casual gamers who will be your primary target audience.

3.3 Production assets

Did you build that game with the ability to quickly integrate assets, swap and modify with limited risk and time? Waiting for art assets can be a time sink but should not stop the production process.

3.4 QA

Even before prototyping, you need to ask yourself: Who is the audience and what kind of machines are they using? Who or what is going to do your QA and what are their qualifications? Do they have the right tools to efficiently cover your needs?

- ?? Testing guidelines such as how to conduct a usability study
- ?? Types
 - o Compatibility testing
 - o Looking for bugs
 - o Usability testing
 - o Play balancing

3.5 Tracking Versions

Keeping track of which versions has which fixes/art/brands/upgrades might seem time consuming but at the end it will save you time, money and frustration.

3.6 *Good Client Relations*

Good communication with your clients will help you not only build a better game but also strengthen your relationship with the client. Your end goal is to ensure the client's expectations and goals are met.

Distribution partners can help you advise you as you create the game so it will appeal to the partner's audience, and being part of the process helps distributors be excited about your title so that when it's finally finished, they are ready (and motivated) to properly market and distribute it. The first time working with a distribution partner might be frustrating as one is learning their requirements but it should be an easier process with future games.

3.7 *Technology Choice*

When choosing a technology, it is critical that one knows the audience you are creating the game for as well as the requirements of the distribution partner. For example, AOL Games currently does not accept web games created in Shockwave. Furthermore, the following questions should be addressed: Does your audience use Open GL? Do they update their video drivers religiously? Do they even have the latest version of DX? Is Macromedia Director going to serve all your needs over C#?

3.8 *Smaller Project Size, Smaller Teams*

Obviously smaller project size can mean smaller teams. Does your team still have all the basics requirements that it needs to develop the game. Do you have the right artist or developer to do the job? Who will be driving the project if not you? Are you wearing too many hats as the designer/producer/lead developer/business development lead? When teams are small it is obvious that individuals will have to take responsibility for different roles. The question becomes can you manage continuity and capability of the team with the least amount of risk?

3.9 *Funding*

You have a great idea for a game but you need funding. What are you willing to give up for that funding? Are you willing to have someone supervise the entire project? Did you give up distribution rights? Did you retain control of the IP but lost the platforms? We all want to see projects become games, but there is a tradeoff between control and funding.

D. Localization

Production covers a wide range of localization tasks and contains several areas in which things can quickly get out of control. Production pitfalls can be easier to rectify than technical pitfalls, since they do not need to be fixed by adding new game code. Most production pitfalls can be avoided if the localization process has been thought out thoroughly and planned for accordingly.¹⁰

3.10 *Poor Planning*

Poor planning is the number-one cause of difficulties during localizations. As discussed throughout this book, a number of items must be planned for and considered when developing localized versions. For example, localization-friendly code is not something that happens late in the project, it must be planned for in advance.

People often make the mistake of putting localizations on the back burner instead of working on them throughout the production process. Localizations should be an integral part of the production planning because there are many external and internal resources to coordinate. Items such as translations, foreign voice recordings, and linguistic testing all need to be planned ahead of time. These things can't be planned until the developer knows the scope of the localization, which includes what the code can handle, how the assets are organized, and how many assets there are to localize.

¹⁰ From the "Game Localization Handbook" by Heather Chandler. Copyright 2005 Charles River Media. Reprinted with permission.

3.11 Linguistic and Functionality Testing

Linguistic and functionality testing are time-consuming tasks, and developers have a tendency to underestimate the testing schedule. If the developer has no experience developing localized versions, testing may be thought of as something that can happen on short notice and not take a long time.

Even if the localized versions are using the same code base as the English version, linguistic testing is time consuming. In addition, checking French, German, Spanish, and Italian language assets with four different sets of testers requires a lot of time just to coordinate the bug-fixing process. If the developer is in charge of fixing the linguistic bugs, a lot of time is spent looking over bug reports for all these languages and making fixes.

A general rule of thumb is that it takes a linguistic tester about three to five days to do a first pass on the game, and it takes the developer one day per language to make the fixes. Add in time for making a new build and getting it back to the testers, and the schedule extends quickly.

3.12 Quality of Translations

The quality of translations is something the developer has no direct control over, but is a problem for localized products in general. If the translator does not thoroughly understand the main concept of the game, appropriate translations will often not be provided. For example, if the game features a character that uses a lot of goofy puns or sarcastic one-liners and the translator does not understand these jokes, the phrases and jokes will likely be translated incorrectly. Therefore, instead of having a goofy character in the French and German versions, the character may appear to talk nonsensically.

Voiceover acting can also contribute to poor quality localizations. If the voice actors and director for the localized voiceover do not understand the context and delivery of the lines, the localized voiceover may not match the game's context. For example, if the characters in the game are human and interact in a realistic environment, the voice acting should match this style. If the voice actors for the localized versions deliver their lines in a cartoon-like, over-the-top fashion, the localized versions will appear less realistic.

Due to cost, travel, or scheduling issues, it is unlikely that the developer will be able to send someone to direct the localized voiceover sessions. However, it is something to consider, especially for high-profile titles. It will be difficult for a non-native speaker to direct voice actors, but if onsite, the developer can assist in the session and provide some context and direction for the lines in general. If possible, the developer should talk with the directors of the localized VO sessions to explain the game and provide examples of how the lines should be delivered.

The developer must provide resources for directing the actors in the localized voiceover sessions. By sending a build of the game to the voice director, the actors can see how their voiceovers will be used in the final product. The final English voiceover files are also helpful because the actors can hear how the line is delivered in English and adapt their line delivery accordingly. The developer can also include context and voiceover direction for each line in the script. Any other resources, such as detailed character notes, pictures of the character, or sample line readings in the appropriate language will also help the performance of the voice actors.

3.13 File-Naming Conventions

File-naming conventions themselves are not a pitfall; it is the lack of a file-naming convention that can cause problems. Because localized versions require the involvement of so many external people, things can quickly get confusing if there is no standard way of referring to the assets. If the filenames are consistent throughout the project, the developer and translator will better understand what information has been sent.

A file-naming convention for the language assets is also important. If the asset names provide some information about what information is contained in the assets, the developer will have an easier time organizing and tracking what is sent to the translator. For example, a text file named "Game Text" does not provide any information about which part of the game the text is from. If this file is the only text file from the game that needs translated, then this is not a problem. However, if several text files need to be organized for translation, and they are named "Game Text 1," "Game Text 2," "Game Text 3," and so on, it will be difficult to provide specific context on what the file contains. A good filename is more descriptive,

such as using "Mission 01," "UI Text," "Help Text," or the name of the character. Of course, the developer can always open the file to check the contents, but this can get time consuming if there are many of them. Informative filenames are especially important for voiceover files. Some games contain hundreds of voiceover files, some contain thousands. If they are named in a consistent manner, the developer can tell what the file contains just by looking at the name and will not have to open every file to check the contents.

3.14 Design Pitfalls

Game design pitfalls are harder to define because game design is subjective. What one person decides is fun to play may be boring to another. However, developers should still take into consideration other cultures and languages in order to design games that appeal to a global audience. Developers do not want people who buy the localized versions to feel short-changed by a game that is very Euro- or U.S.-centric if this is something that can be avoided. However, a global game is heavily dependent on the game's context. As an example, *True Crime: Streets of L.A.* is obviously a U.S.-centric game based in Los Angeles. Changing the setting for a global audience would take away the game's flavor and context.

3.15 Cultural

Cultural issues are best identified by having the game design elements reviewed by people from other countries. If the developer works for an international publisher, the company will have access to people in international locations who can provide some basic feedback on how suitable game design and features will be for gamers in their country. They will provide information on cultural taboos, such as language or actions that are considered offensive. They will also know if the game will appeal as a whole to their country and culture. If international resources are not readily available to a developer, feedback can be solicited from international people available locally, such as at college campuses.

3.16 Content

Actual game content can also create some issues for localized versions. In some cases, the content is not offensive; it is just not the best choice for the localized versions. For example, *Shanghai: Second Dynasty* is a tile-matching game that contains a set of tiles called "Spelling" in the English versions. The basic premise for this tile set was for players to match pictures of objects with written words, thus the name "Spelling." The artwork for the tiles had the text and pictures embedded into the .bmp files.

This tile set caused some concern when the game was localized into German and Japanese. Both countries wanted the tile set localized into their language and were distressed that a tile set of this nature had been included in the game without a plan for the localized versions. Due to the production schedule, there was no time to design a set of words and pictures for the German and Japanese versions, or to completely redo the tile artwork for each language. Completely removing the tile set was briefly considered, but was rejected because it meant altering the game code and putting the release schedule at risk. In the end, each country decided to just rename the tile set to "English." This was an appropriate compromise since English is something taught to children in Germany and Japan.

Developers must be aware of potential content issues sooner rather than later so they can be fixed before the game assets are in full production. The best way to do this is to gather international input early in the pre-production process and solicit this input through the game's production.

4. Conclusion

Developers of Web and Downloadable games face a unique set of production constraints, most of which grow out of financial and technical limitations. However, these constraints can be embraced by the optimistic developer and used to guide a more focused development process. This focus is also the first step towards managing the risks associated with game development for this market. Though the budgets are small compared to console and PC games, the risks are still significant for the small developer and require continual vigilance and creative management solutions.

Game design for the casual market demands a great sensitivity towards the less-experienced user and a tremendous respect for the player's time. The casual game audience's level of patience and tolerance

toward learning a new game is very low. However, while their level of initial commitment may be low, casual players also have few preconceptions about gaming genres and conventions. There is still plenty of room for innovative core game mechanics that build on these players' experience. Choice of thematic content is critical and has the promise to hold player's attention while they are gently introduced to new game mechanics. Ultimately, players' equity in the game experience should be the goal for any developer and at some level, all of the production and design considerations discussed above feed into that goal.

Lastly, as the taste of the casual game user evolves and online features such as match-making services and micro-transaction billing appear in the marketplace, new opportunities for developers will arise due to the complexity of games that can be achieved. Still, we believe that the core of casual game design will be simplicity, so a good balance must always be achieved.

V. Technology Overview

A. Topology

With this section, we will describe the main characteristics of Web and Downloadable games, from the technical point of view. Web and Downloadable games can be classified according to four main characteristics. The first characteristic concerns their delivery model or how they are distributed to the user. The second characteristic is about their architecture and how the game is built. Next we will describe the playing mode, based on the number of players that play the same game instantiation. The last characteristic would concern the network protocol and how these games send information to the players.

1. Delivery Models

The delivery model can be defined as the way for the players to reach the game. Depending on the game, the players may have to download a program and then install it, or sometimes, directly play the game through their browser, most likely through an embedded plug-in of some kind. Following is a brief review of the most commonly used delivery models.

1.1 Web Browser Games

Web browser games are arguably the simplest form of Web and Downloadable game (from the user's point of view); most are developed in Flash, Shockwave, PHP, or Java and execute directly in the browser with no need for the player to execute a separate download and installation. Additionally, technologies from Groove Alliance, Virtools, and Wild Tangent are starting to gain traction in the market as a means of quickly producing professional looking content from within a browser window. There are substantial issues with regard to browser security and integrity in taking this approach: for example, it is very difficult if not impossible to save files locally on the users machine (with the exception of "cookies"); there are currently very few technologies that support full screen play (other than maximizing the browser window on the desktop), and; it is unlikely that the developer will be able to block out other applications on the user's machine. In spite of these limitations, users flock to browser-based games because of the ease of use: at most they have to install a plug-in, and at best they simply have to click on a hyperlink to begin playing.

1.2 Downloadable Games

Downloadable games execute directly on a particular native platform, such as Windows XP or Macintosh OS X (although not always). Generally speaking, developers will package all files necessary for execution into a Windows and/or Macintosh installer. Users download and execute the installer appropriate for their operating system and then run the game from their desktop. It is common for developers to release both Web and Downloadable versions of the same game, using the web version to generate awareness and advertising revenue and the downloadable version to generate consumer sales.

1.3 Downloadable Clients with Web-Based Services

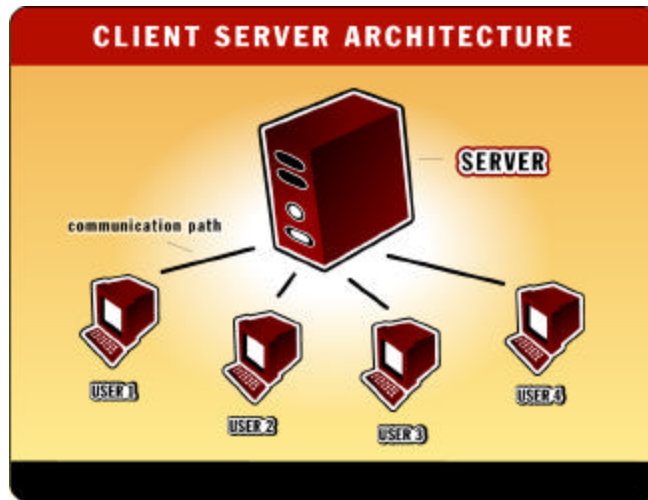
It should be noted that even in the downloadable games described above; it is now possible and often appealing to use network services in conjunction with the downloaded client. This is often done for customer support interaction, but is also used for things like high-score lists, brag sheets, player forum links, etc. Even though the game itself exists locked on the client and the network is not a part of the game play, the Internet is still used to provide experiences that are perceived valuable in relation to the game. This is increasingly the model of choice for downloadable games, as it allows the developer a way to contact the player for a variety of reasons.

2. Architecture

In this section, we will define the game architecture as the structure and organization the game software. We will briefly describe the three possible architectures for Web and Downloadable games which are: the client server architecture, the peer-to-peer model, and the standalone game.

2.1 Client / Server

In a client-server system, each player sends packets to other users via a server.¹¹ Packets are received via the same server. However, servers slow down the exchange of entity state messages in Web game. Despite being likely bottlenecks, servers do have multiple purposes. First, servers can reduce message traffic to individual users by not sending packets to those users if the packet in question is out of the area of interest of the potential packet recipient. Second, servers can compress multiple packets into a single message, eliminating redundant and unnecessary message flow. Third, servers can also convert bursty packet reception into smoother packet rates, thus delivering packets at a slower rate than they are generated by the individual users. Then, servers can also be configured to communicate with their user clients reliably, as reliability becomes important for Web games. Finally, client-server architectures are also preferred if there is an administrative or control task that must be performed, such as accounting for time spent in the game on an individual basis.



When a Web game relies on a client-server architecture, the server is responsible for receiving input commands from client, updating the game state, and sending out updates to the concerned clients. The server's biggest job is keeping tracks of entities (i.e., avatars, monsters, rockets, etc.). The server must calculate when a player is hit; use physics models to calculate the position of moving objects; turn key presses into jumps or weapons fires, etc. The server also informs clients of world state: gravity, lightning, and map information. Aside from its role in gameplay, the server is a session manager that starts and ends games, accepts client connection and performs numerous other administrative tasks.

The client usually sends simple avatar control commands (movements, tilts buttons) to the server. It then uses its cache of the game state, plus dead-reckoning and any updates from the server to render a representation of the avatar's area of interest of the virtual world. The graphic rendering is performed on the client side. The client has long been the main area of interest in the game developer community because it is where all the *cool graphics* are done. However, from an architectural point of view, the client is relatively simple compared to the server.

¹¹ J. Snyers d'Attenhoven. *Management of Networked Virtual Environments*, Free University of Brussels, Belgium, 2002.

2.2 Peer-to-peer

In peer-to-peer architecture, we have a set of equal nodes (i.e., users) connected by a network.^{12 13} Since no node is more special than the others are, they must be connected to each other. There is no intermediary and each node broadcasts (or multicasts when possible) its messages to every node in the network. Peer-to-peer means that communications go directly from the sending user to the receiving user, or set of receiving users, to whom the information must be communicated. Peer-to-peer is widely used for some types of multi-player computer games (i.e., Quake...), because it is easy to realize and to expand from a single player game. However, it does not scale up easily due to the lack of hierarchical structure. It is useful when the number of participants is small or they communicate in a LAN.

Among the disadvantages of the peer-to-peer architecture, we may list its inadequacy to provide control to the game administrators. All nodes being equal, none of them has a control on the entire simulation.

2.3 Standalone

A stand-alone game is a game that once installed is capable of operating without other programs, libraries, computers, hardware, networks, etc. As they do not rely on connectivity, stand-alone games are often single-player games or require 2 players to use the same computer simultaneously (sharing the keyboard) or alternatively. Traditionally, stand-alone Web and Downloadable games are written in Java or Flash or Visual Basic, although C# is now also becoming a small player in the market.

3. Playing mode

The playing mode characteristic of a game covers the number of players involved in a game session and the duration of the game session. While computer game sessions can often require several hours or even multiple sessions of several hours to reach the game end, successful Web games, with the exceptions of MMORPG's or MUD's show a tendency to have short simple and repeatable sessions of only a few minutes per session.

3.1 Single-Session Single-player Games

Playing games is the most fun if other people take part. But other players are not always available if you need them, which led to the invention of single-player games. The goal of a single-session single-player game is usually to make "moves" until one reaches a final state of the game, which results in a win or loss, or a score assigned to that final state.

Thousand of single-players games have spawn all over the Internet during the last years. While some are simply Web versions of old arcade games or existing bundled game (like *Solitaire* or *Minesweeper*), several new completely games emerged. Often, the success of these Web games resides in their simplicity to play and the strong addiction they generate.

3.2 Single-Session Multiplayer Games

Single-session multiplayer games represent the largest category of multiplayer games. Nearly any game that allows two or more players to join play over a network connection falls into this category. Every genre of game is represented in the universe of single-session multiplayer games, including: classic board games such as chess, checkers, and backgammon; card games such as *Hearts and Spades*; casino games; first-person 3D shooters; and sports arcade games ranging from snowboarding to billiards.

Single-session multiplayer games save little information about the player between sessions. Exception examples include user authentication data, player ratings and casino winnings. These data chunks can

¹² S. Singhal, M. Zyda. *Networked Virtual Environments - Design and Implementation*. Addison Wesley, 1999.

¹³ J. Smed, T. Kaukoranta, H. Hakonen. *Aspects of Networking in Multiplayer Computer Games*. In Virtual Reality Annual International Symposium, 2001.

be either stored on the end-user's machine or on the server (the latter being a requirement whenever a secure solution is desired).

From a design perspective, successful multiplayer games work best when the social experience is tuned to the audience. This may vary significantly from genre to genre. For example, some 3D shooters could be described as games that "allow teenage boys to trash-talk while fragging each other". Parlor games allow users to leisurely chat without negatively affecting the pace of play. Another important design component of multiplayer games is the lobby system. A successful lobby system allows users ample time to socialize before entering a game. More importantly, it gives users the power to select their opponents.

3.3 *Persistent World Multiplayer Games (MMOG)*

MMOGs arguably represent the leading edge of Web games development in terms of technological complexity and resource requirements.

A persistent world is called "persistent" because when a player quits the game, the world still operates without him. Even if all players would leave the game at the same moment, or if the server supporting the game would be suddenly disconnected from the Internet for any reason, the world would keep running.¹⁴

Examples of MMOG games in the CD-ROM space include *EverQuest* and *The Sims Online*. Graphical MMOG games in the Internet space (as opposed to text-based MUDs) have been steadily increasing in quantity since the mid-1990s, and we expect to see several launch in the next year. They operate as a service over the Internet – players connect via client software to a central server array where the game world is stored and managed. The technical problems of such client-server systems are substantial, requiring specialized and non-trivial engineering and operational (up-time, customer support) capabilities. MMOG games are generally offered for-pay only, with a short trial period to allow potential customers to grasp the game play experience. One can obtain the 2004 Persistent Worlds White Paper at the IGDA web site which was just released in December 2004.

3.4 *SKILL BASED GAMING*

From a historical perspective, skill-based gaming as we know it today can still be considered nascent in that the concept of skill-based games only began achieving material market awareness in 2001. As a result, the genre can be characterized as being a fairly "early stage" sub-category of the Web gaming sector.

In an effort to convey skill gaming's most relevant technology issues, this section will focus on the three most technology-affected areas of the sector, which in turn drive technological evolution: User Accessibility, Fraud Prevention, and Game Play Expectations.

i User Accessibility

The concept of "pooled liquidity" has arguably had the greatest impact on the technological evolution of skill-based games. In theory, the skill-based game service providers with optimal "pooled liquidity" will succeed relative to the competition because of their ability to consistently offer more skill-based game options, faster match-making and larger prizes.

As a result, in an attempt to appeal to a critical mass of users, the most successful skill gaming companies embrace a "least common denominator" technology development approach, whereby the principle technological objective is to provide a user experience that is accessible to the largest number of potential skill gamers. For this reason the most successful skill-based games are inherently quick to learn, quick to play (less than 5 minutes), and readily accessible by the user whose PC may be limited to 266 MHz of processing power and a basic dial-up Internet connection.

The desire to offer the most readily accessible skill gaming platform has inspired a cold war-like arms race within the community of skill-based game service providers. As would be expected (within a

¹⁴ J. Snyers d'Attenhoven. *Management of Networked Virtual Environments*
Free University of Brussels, Belgium, 2002.

relatively early stage competitive technology environ), myriad programming languages are being deployed in an effort to identify the optimum technology solution.

The web-based client-side portion of a skill-based gaming system can be built using several technologies, including Shockwave, Flash, Java, C++ and ActiveX Controls. These client technologies, in turn, communicate with backend systems capable of large transaction volumes, often built on Sun J2EE, Microsoft.NET, or other appropriate backend platforms.

ii **Fraud Prevention**

Game-related fraud represents the single greatest impediment to the large scale acceptance and subsequent mass popularity of skill-based gaming. In skill games, where cash prizes are on the line, the impetus to cheat is higher, and the need to quash both cheating and the perception of cheating is much more important. Skill game providers must earn the trust of players to build a successful business; therefore it is critical that they thwart cheating of any type.

And while the overall incidence of fraudulent activity experienced within skill-based gaming compares favorably to that of Las Vegas casinos (whose incidence of game-related fraudulent activity is in the low single digits), a misperception of the fraud-related risks associated with skill-based gaming could be detrimental.

Of particular note is the fact that the increasing popularity of skill-based gaming will translate into the availability of more and larger cash prize awards. Consequently, the persistence and technological sophistication employed by would-be "fraudsters" will continue to present a challenge to skill-based game service providers. The first lesson in battling cheating is remembering that it is an ongoing battle, requiring a site to spend money on maintaining an experienced anti-fraud team. New techniques are constantly developed; existing techniques are constantly revised and strengthened.

Another important lesson in preventing cheating is not to rely on a single method. If a cheater manages to foil one or two cheat-detection systems, a third will catch him/her. Having just one system is like relying on just an alarm system to safeguard your house; having multiple systems is like have an alarm system, hidden cameras, a trained Doberman, a moat filled with hungry alligators, and a yard filled with land mines.

The most successful skill-based game service providers have been able to effectively minimize game-related fraud by utilizing comprehensive technology-enhanced fraud prevention techniques. These techniques include, but are not limited to, Move Tracking: which allows the skill game service provider to play back and review all moves made by a particular player in a particular contest; Server-Focused Communication Protocols: which reduce the technical vulnerability associated with client-side communication protocols; Event Probability Assessment: which allows the skill game service provider to determine the likelihood of a particular event (i.e., a winning score, the likelihood of a particular move, etc.) based on statistical precedence; and, Strong Encryption Protocols: which securely encrypt client codes and events rendering server communications cryptographically indecipherable. We discuss game security in further detail later in this section.

In terms of detecting "hot spots" for fraudulent game play, a good rule is to "follow the money." Players winning large single prizes, or with a large amount of cumulative winnings, are deserving of a greater level of inspection.

iii **Game Play Expectations**

As the skill gaming sector continues to evolve, so will the game play expectations of the skill gaming consumer population. Subsequently, successful skill-based game service providers (like all successful game developers) must contend with the challenge of providing an increasingly more compelling (better graphics, faster processing, better sounds, etc.) game play experience.

However, because of self-imposed technological constraints (derived from the desire to maximize users' accessibility), skill-based game service providers are faced with the conflicting challenge of simultaneously maximizing the game play experience while maximizing user accessibility. Compounding this challenge are the consumers' game play expectations, which have been fueled by the game consoles

(Xbox, PlayStation, Game Cube, etc.) and CD-ROM games which, unlike skill games, are not constrained by bandwidth limitations.

Consequently, the ability to deliver a secure and readily accessible skill-based game that has the production values (i.e., 3D graphics, accelerated processing power, etc.) of a console game, equates to the "Holy Grail" for skill-based game service providers and represents the logical evolutionary path for the skill-based game play experience.

4. Network Protocols

A connection or network protocol describes the set of rules that two applications use to communicate with each other. There are thousands of different network protocols in use nowadays, ranging from downloading documents from the Internet to exchanging real-time audio and video. In fact, when two applications communicate with each other, they will most likely use several protocols simultaneously. This section discusses the common protocols broadly used in networked Web games.

Naturally, stand-alone games as described previously do not require any network protocol while played, and generally use Internet standards such as HTTP or FTP in order to be downloaded. Rather, network protocols apply to client-server or peer-to-peer architectures, and to single-session and persistent-state worlds.

4.1 Internet Protocols

Most hosts on the Internet today use the Internet Protocol (IP) to communicate with each other. IP is a low-level protocol used by routers and hosts to ensure the packets travel from the source host to the destination host.¹⁵ IP hides the transmission path and the recipient host has no way to know if the transmission path included phone lines, LAN, satellite links, or whatever. IP splits the packets into small fragments when they traverse networks links that cannot support large packets, and for reassembling the packets at the other end. Finally, the IP header also includes a "Time-to-Live" (TTL) field that specifies how many network hops may transfer the packet before the packet is discarded. This prevents packets from being accidentally routed in infinite loops around the Internet.

Applications generally never use the IP directly. Instead, they use one of the protocols that are written on top of IP. These higher-layer protocols include services for acknowledgements and retransmission, or support for application port numbers.

The Transmission Control Protocol (TCP) is the most used protocol on the Internet today. It is usually layered on top of the IP and referred to as TCP/IP. This protocol provides the running application with the illusion of a simple point-to-point connection to another application running on a separate computer. Each endpoint can consider a TCP/IP connection as a bi-directional reliable stream of bytes between the source and the destination.¹⁶

TCP/IP is reliable as it automatically transmits acknowledgements and retransmits data. Furthermore, TCP/IP verifies the integrity of received data using a data checksum contained in the data packet header and both endpoints use a data flow control technique to ensure that the sender does not transmit data packets to the network faster than the network can support or than the recipient can process them. TCP/IP even allows the application to detect when the other endpoint disconnected.

Unfortunately, such reliability comes with a cost. Because of it, TCP/IP must transmit more information in order to accurately describe the data ordering, detect corruption using checksums and transmit acknowledgement or retransmission packets. Moreover, the recipient must receive and accept the entire data stream in the order that the sender transmitted it. Therefore, the TCP protocol handle may arbitrarily hold or buffer transmitted data in order to preserve the packet ordering. Consequently, TCP/IP is not suitable for applications that do not necessarily need a strict ordering and consistency.

¹⁵ S. Singhal, M. Zyda. *Networked Virtual Environments - Design and Implementation*. Addison Wesley, 1999.

¹⁶ J. Snyers d'Attenhoven. *Management of Networked Virtual Environments*. Free University of Brussels, Belgium, 2002.

The User Datagram Protocol (UDP) is a lightweight communication protocol differing from TCP in three respects: connectionless transmission, best-efforts delivery, and packet-based data semantics. UDP does not establish peer-to-peer connections as the sender and recipient of UDP data do not keep any information about the state of the communication session between them. With UDP, data is sent on a packet-by-packet basis. While TCP used such information to detect packets loss, request retransmission or dynamically adjust the data transfer rate, UDP simply provides *best-efforts delivery*, making the attempt to guarantee that data is delivered reliably or in order. In addition, the *datagrams* must not be too big, because if they have to be fragmented, some fragments might get lost in transit.

While UDP might appear at first as too weak to be powerful, it has in fact several major advantages. The first one being its extreme simplicity. As UDP packets do not contain any of the information guarantying reliability used in TCP, they require considerably less processing for both the sender and the recipient. Then, UDP does not maintain the illusion of data stream. This implies that packets can be transmitted as soon as they are sent by the application instead of having to wait in line behind other data stream. Similarly, data can be delivered to the application as soon as it arrives at the recipient host instead of waiting in line behind missing data. Thirdly and finally, as many operating systems impose limits on how many simultaneous TCP/IP connection they can support, UDP/IP seems logically more appropriate for large-scale distributed systems (including MMOGs) where each host can communicate with many destinations simultaneously.

There is however one aspect of UDP/IP that can make it rather unsuitable for some environments. When a socket is receiving data on a UDP port, it will receive packets sent to that port by any host, whether participating to the application or not. This can become a security problem for applications that do not make any difference between expected and unexpected packets. For this reason, some ISPs still block UDP packets, or block UDP in particular port ranges. While this is generally less of an issue than it was a few years ago, any large deployment should still check with major ISPs for UDP support and port ranges.

4.2 Flash Communication Server

The Flash Communication Server from Macromedia allows Flash and Director developers to implement multi-user solutions for clients. As well as standard data transfer, it includes the facilities for multi-way video and data, offering a rich out of the box solution for content developers. The latest 1.5 MX release added HTTP tunneling functionality and Linux support.

Applications will be able to add video conferencing, shared whiteboards, audio and text chat, and other features to their applications in an easy, straightforward manner.

The server comes in 3 flavors:

- ?? Developer Edition (Free): Allowing a maximum transfer rate of 250 Kbytes/sec, or 5 active connections, this is really only for testing purposes.
- ?? Personal Edition (\$499): This allows for a transfer rate of 1Kbit/sec, or 50 connections. This would suit small, light websites.
- ?? Professional Edition (\$4,500): For sites with a lot of traffic, this allows for a 10Kbit/sec transfer rate, or 2500 connections.

If you are having a particularly busy quarter, you can purchase an additional 90 day unlimited capacity pack (\$7,500), which has no restrictions of transfer rates or connections for the duration of that period. You can purchase any number of these, and use them in succession.

The Flash Communication Server is also offered as a solution for multi-player games, via its ability to also transfer simple packets of data. As most games will be transmitting relatively small data packets, rather than constant streams of video or audio, the maximum number of active connections will be more of a concern than the maximum data transfer rate when considering what edition of the server to purchase.

There are certain multi-player features that it doesn't support, such as peer to peer networking, but if your Flash or Director game uses a server based approach, this is certainly the technology that Macromedia would like you to consider.

4.3 Shockwave Multi-User Server

Since Director MX, the Shockwave Multi User Server (SMUS) has been depreciated somewhat. Although it still operates with all versions of Director and has been ported to OS/X, development has been frozen on it and the above Flash Communication Server is recommended as an alternative.

However, a number of Director multi-user game developers still use SMUS for a number of reasons, including the fact that it supports features not available in the Flash Communications Server solution, including the ability to implement peer to peer networking capabilities.

4.4 Alternative and helper solutions

One alternative option to using the SMUS server (but still using the client SMUS Xtra) is the Nebulae Multi User Server, available at <http://xtras.tabuleiro.com/>, which is a third party implementation of a server system that meets the SMUS spec. Also, a useful set of routines for developing SMUS applications for first time developers can be found at <http://gomu.rebus.gr/>.

B. Base Delivery Technologies

1. Director Shockwave / Shockwave 3D

Shockwave is one format for creating Web games. Its ability to handle fast bitmap blitting operations has given it the performance edge over Flash for certain types of games, and with the introduction of a real-time 3D engine and Havok physics, it has a huge potential for developing small, fun 3D games. Director can be used to develop a Shockwave web demo version of the game, as well as a standalone projector version of the same game which can be sold online for additional revenue. In MX2004, Director added the capability to manipulate DVD content, and to access all of Director's features through a new, ECMAScript 1.5 / Javascript syntax (which is very similar to Flash ActionScript), in addition to the Lingo language the product has used for years.

Director is cross-platform, and can be used to develop content for PC and Mac (although a copy of Director for each platform is currently required).

Shockwave3D, the 3D package that sits inside Director, offers a vast range of both standard and advanced features such as level of detail, sub-division surfaces, skinning, multi-texturing, particles, the list goes on. Using Lingo or Javascript syntax, you can create meshes at run-time, or can use content from all of the major modeling packages using the available exporter plugins which exist for 3D Studio Max, Maya, Lightwave, SoftImage, TruSpace and more. Stand-alone converters are also available. The engine supports Direct3D and OpenGL, and even has a software renderer to ensure that everyone can view the content created in Shockwave.

The real-time physics capabilities offered by Havok, although a subset of their full v1.x package, are quite extensive, and can allow for some very impressive simulations that previously would have been out of the scope of most Director based projects.

2. Flash

Flash has an unprecedented popularity compared to any other web based plugin (literally across all platforms, from Windows to Macs to Linux to a number of PDA's), and as such offers developers a huge installed client base. Its core engine is primarily a non-hardware accelerated vector based system, and as such has no game-specific features, but a number of innovative designers have managed to develop some excellent small games using it.

Its ActionScript language, like any scripting language, can be slow at times, although a number of disassemblers are available to allow developers to see exactly what is happening under the hood with the scripts, and some of them have used this knowledge to code their games at this level (almost akin to assembly language coding) to get the maximum performance out of the scripting engine.

Flash doesn't have built-in 3D support, although because it can draw polygons that can be re-positioned at run-time, some rudimentary real-time 3D environments have been designed and implemented. Some utilities allow for the optimized export of 3D model screenshots and animations from popular modeling

packages, which basically take each 3D image and break it up into a vector based image (some of the more advanced ones break the image up into layers, and try to “tween” between the various frames to help optimize further).

The lack of hardware acceleration within the main player will always result in slower performance than if the hardware were handling the rendering of the scenes, so for certain types of games it'll never really be feasible. However, the popularity, flexibility and portability of the engine is unparalleled. Currently within the marketplace, Flash reigns supreme in terms of creating energizing graphical content through a high level scripting language. Additionally, its recent addition of the ActionScript 2.0 syntax offers a much more mature, class-based OOP architecture, as opposed to the initial offerings of previous versions.

3. Java / Java WebStart

Java (<http://java.sun.com>) began life with the promise of ‘write once, run anywhere’. While this is certainly more so than with any other comparable, contemporary language, it hasn't become the panacea once envisioned. On the other hand, Java has become a viable and practical platform, and of all the tools mentioned in this paper it is the only one that is entirely free. (There are many third party development environments and class libraries that are not free, but there is no charge for the core Java libraries and run time.) It is important to wade through the rhetoric and see Java for what it is and isn't in the context of game development.

Java was originally developed to serve as a portable platform for content delivery on interactive set-top boxes. The media group within Sun found themselves grappling with an explosion of portability, compiler, library, and security issues as they attempted to develop atop a variety of commercial hardware platforms, and they invented Java to soothe the pain.

Since those early days, Java has evolved considerably. Java 2 was launched as a successor to the original Java and comes in three ‘editions’ – each one tailored for a specific class of problems. The original Java has gone on to become Java 2 Standard Edition (J2SE) – a Java platform targeting a desktop environment. The Java 2 Enterprise Edition (J2EE) has emerged as a superset of the J2SE intended for deployment in enterprise and server-oriented environments. Finally, Java 2 Micro Edition (J2ME) has emerged as a slimmed-down Java platform for resource-limited devices (CPU, memory, interface, connectivity, etc.) that still might benefit from the Java platform. We'll now go on to consider the J2SE and J2ME platforms as these are the two most relevant to game development and deployment. J2EE is a set of enterprise-grade technologies not directly relevant (though not un-useful) to game development. Each of these editions were given extensive coverage in last year's report, and readers making decisions about Java implementations are encouraged to review those notes.¹⁷

Since last year's report the Java 1.5 platform has shipped, which offers significant architectural changes, support for literal arrays, and several enhancements, but as of this writing the 1.5 architecture has not yet been extensively used within the game development community. We expect that next year's section will have significant coverage of how games are taking advantage of the new features in the language.

3.1 Extending Java

Java provides a standard mechanism for platform extension via native code called Java Native Interface (JNI). This makes it practical to use Java as a scripting language while leveraging any existing libraries and allowing you to implement more performance-oriented operations in native code.

In particular, the Java 3D API (<http://java.sun.com/products/java-media/3D/>) is one such extension that provides advanced 3D APIs built atop existing underlying graphics technologies (OpenGL and Direct3D). While this extension is available only on a limited number of platforms, it is a strong candidate for mid-tier 3D game development (compare to Shockwave w/ the 3D Xtra). Until Java 3D becomes a core component of the Java platform, however, you will need to ensure that your customers install the Java 3D extensions alongside your Java 3D-based games.

¹⁷ Technology Section, 2004 Web and Downloadable Games White Paper.

There is now a second development effort in Java circles to promote the use of 3D – the Java Open GL (JOGL) project – which while community run, is now regarded as one of the best opportunities for 3D through Java. More information is available at <https://jogl.dev.java.net/>.

3.2 Java Delivery Mechanisms

A variety of delivery mechanisms exist for packaging and delivering Java-based content to your audience. These include:

- ?? Applets
- ?? The Java Plug-in
- ?? Java Web-start
- ?? Pre-packaged applications (w/ and w/o the JRE)

The two major delivery mechanisms for Java on the web at this point are the Java Plug-in (<http://java.sun.com/products/plugin/>) from Sun and the Java Web Start (<http://java.sun.com/products/javawebstart/>).

The final area in which Java delivery is becoming critical is mobile game development. You can learn about these efforts in our Mobile Games White paper that will be distributed in 2005 at <http://www.igda.org/SIGs>.

4. WildTangent

WildTangent (www.wildtangent.com) is a plug-in framework that is programmable in a variety of languages. It consists of a high level API for Java, JavaScript, and other COM enabled languages such as C, C++ and Visual Basic, and has a powerful graphical engine underneath. The API provides 2D/3D support by layering on top of the Direct3D graphics API from Microsoft. Installation of the plug-in is largely transparent to the user, and there is an active updater to ensure that clients have the latest version.. Access to advanced 3D through the WildTangent interface is a key feature of development in this platform – web based 3D being impossible to deliver without the use of some kind of downloadable engine or plug-in architecture. WildTangent is not cross-platform, and requires Windows 98 at a minimum.

The WildTangent engine is a descendant of the Genesis3D engine (www.genesis3d.com) which is still available under open source licensing agreements. The core Genesis3D engine does not contain the capability to play in a web browser, but can be a great starting point in creating a downloadable 3D game.

5. Python / PyGame

Python is most often thought of in game development circles as a scripting language, as something that controls a lower level C/C++ core. Python in particular has been used in a number of recent projects including ToonTown (Disney), Eve Online (CCP), Blade of Darkness (CodeMasters), Star Trek Bridge Commander (Totally Games), and Earth & Beyond (Electronic Arts) [Dawson][Riley].

A new generation of games is springing up using Python in combination with PyOpenGL and/or PyGame (www.pygame.org). PyOpenGL provides a wrapper to the standard OpenGL library and is thus suitable for developing 3D games, PyGame provides a wrapper to the Simple DirectMedia Layer (<http://www.libsdl.org/index.php>) which uses GL or DirectX depending on platform, and provides cross-platform access to hardware accelerated graphics as well as input devices and other common game-engine requirements.

Libraries exist for Python to do its own networking, and there are now several small downloadable client-server games built with Python/PyGame, with more popping up every day. While most game designers are still looking at Python as a scripting language, its ease of use (it is an incredibly easy programming language to use), its cross-platform capability (Windows, MacOSX, and nearly every *nix variant), and its ability to call C/C++ code when needed make it an ideal language for small downloadable games. There are currently no known technologies that play python games natively in a browser.

6. *PHP + HTML*

The Hypertext Pre-processor language (PHP - www.php.net) is a widely used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. It features a simple C/C++ style syntax that at the beginning only proposed structured code but that now supports object-oriented mechanisms. PHP excels at its ease of use in building low to complex systems. PHP is completely free with many modules available for most popular Web servers and platforms.

PHP is primarily designed for server-side scripting, therefore it can do anything that a CGI script can do, from collecting data to generating dynamic page content. The difference between PHP and other scripting languages like JavaScript is that PHP is executed on the server hosting the file. As such, the client only receives the results from this script, without any access to the code that generated the result.

PHP can also be used for command line scripting. This type of usage is ideal for scripts regularly executed using Cron or Task Scheduler. PHP can also be used in client-side GUI application as it can indifferently output HTML, dynamically generated images and graphics, or even Flash movies generated on the fly. One of the strongest and most useful features in PHP is its support for a wide range of databases, from MySQL, PostgreSQL, or even Oracle to ODBC.

Despite what many people think, PHP can also be used in client-side GUI application as it can indifferently output HTML, dynamically generated images and graphics, or even Flash movies generated on the fly. This ability, coupled with a few nice JPG or animated GIF pictures and java scripts, enables it to design and display some awesome fully interactive web pages.

PHP is often selected to create small to medium Web persistent multi-player role-playing and/or strategy games, most likely due to its cost, and the fact that it is a solution which allows the implementation of a client-server architecture relying on a database system.

These games can be played directly through a client browser written in PHP or through a downloaded client written in another language. Numerous examples of persistent PHP-based games are available through the Internet with the membership ranging from a few dozens to thousands of players.

Among the most successful PHP Web games, we may list the Legend of the Green Dragon RPG (www.lotgd.net), developed under the GNU license and hosted on a few dozens servers, each of them supporting a few hundreds players. Another interesting example is the Star Wars Combine (www.swcombine.com), a free and non-commercial massively multiplayer Web role-playing simulation game, based on the Star Wars universe, being developed by amateurs during their spare time. It gathers over 1,500 active players in a persistent gaming universe.

7. *DarkBasic*

DarkBasic has gained a small following over the years primarily as a “first programming language” – but one that is very capable of producing interesting and exciting content. The libraries included with the product allow access to DirectX and provide what amounts to a fully functioning 3D engine. Projects produced with DarkBasic cannot run native in a web browser, but must be downloaded to a client’s machine and installed. The engine is currently geared at creating stand-alone 2D and 3D games, and does not have tools for networking capability (although experienced programmers could certainly add them). Nevertheless, the graphical capabilities are quite well documented and easily employed.

8. *VirTools*

VirTools has long been a staple of the more traditional games market, from PS2 and Xbox development houses to the big PC Game makers. Recently they have added a plug-in for web delivery of 3D content, as well as server technology to push the games. While more expensive than most of the other technologies listed here, VirTools is also one of the most complete – offering near-seamless integration with Maya and 3dsMAX, a “C-like” scripting language, and a wealth of pre-scripted game scenarios, built-in collision detection and even some AI. When compared to several of the technologies above (Director, Flash, Java, etc.), it is apparent that VirTools is an engine designed specifically for games and game creation, as opposed to a general purpose tool that can be used as such. One issue to note is the relatively small market penetration of the VirTools plug-in, although that may change as more adopters begin to push content.

C. Security and Cheating

As Web and Downloadable games have become a more serious business, security and measures to counter cheating have become more important. Where once a cheater simply boosted his high score, hacked his games with “friends”, or disrupted game play and made a nuisance of himself, now these activities cost customers and dollars directly. As security is a new technology topic for IGDA’s Web gaming presentation, this year’s report will focus on developing a common framework for discussion of the issues, categorizing solutions, and introducing early solutions. Security is a large discipline that spans the entire lifecycle of a product or project and includes both technical and non-technical aspects. This discussion will briefly review the standard IT security technologies that are relevant to Web games, but will focus on those that are unique to this field.

Security is intimately tied to the operational integrity of a Web game. While computer games were once products, in many cases, Web games today are services. This changes the essential nature of the business – Web games are not just “published”, they are “run”. Customer service, retention, and acquisition depend more on persistent quality than on flashy packaging and cool graphics. Development and delivery of a game is not the end, it is just the beginning.

The security threat for traditional computer games used to be copy protection. Various proprietary schemes have been created with each one a balance of protecting sales versus annoying customers. Typically, not annoying customers has won out over security techniques – just as with other traditional software, the belief was that a satisfied “thief” today may be a good, paying customer tomorrow. The effectiveness of the available anti-copying techniques also was (and is) an issue.

It is always important to remember – the bad guy does not need to break your security system, he just needs to beat the game.

The 2004 Web and Downloadable Games White Paper identified 3 major thrusts for security related issues: Hacking, Cheating, and Griefing. The following represents an updated list of the types of attacks and common exploits, but should be considered an extension of, not a replacement of, the previous work shown in last year’s report. In particular, detailed topics such as packet tampering and information exposure have not been reprinted; instead a number of new threats are documented.

Also in keeping with last year’s report, there is unfortunately not a wealth of products focused on Web game security. Rather it falls to the developer to defend against the exploits described below when implementing with any of the previously mentioned toolsets. This is unfortunate, and can significantly impact development time and technological implementation. Some known software solutions to these types of attacks are listed in sections below, although each of these will require careful integration with your game and its development process.

1. Common Exploits

In the following sections, we will review the most common methods used in Web cheating, and the protections against them. This section is based on the observations compiled from the sources listed in the footnotes.^{18 19 20}

1.1 Network Game Security Issues

With the rise of Web and Downloadable games, security has become a much more serious challenge. While the game industry has always been concerned about piracy, new platforms, new business models,

¹⁸ M. Pritchard. *Cheating in Multiplayer on-line Games*. The 2001 Game Developer Conference Proceedings, San Jose, California, 2001.

¹⁹ J. Smed, T. Kaukoranta, H. Hakonen. *Aspects of Networking in Multiplayer Computer Games*. In Virtual Reality Annual International Symposium, 2001.

²⁰ J. Snyers d’Attenhoven. *Star Wars Combine: Strategic Overview 1.0*
http://dark.swcombine.com/documentation/pdf/SWC-SO-v1_0.zip

and the power and speed of networks have created new security problems for game developers, publishers and operators. These problems rapidly become more serious for networked games since word-of-mouth and long term relationships drive sales and revenue more than just slick packaging and marketing. Network game operators also face costs associated with customer support and charge-backs that traditional computer game publishers and developers have not had to confront. The discussion that follows will try to establish clearer definitions of game security issues.

1.2 Piracy

Piracy continues to be a problem for network games. In some ways, it is worse. Digital Rights Management tools have joined older physical media protection and various licensing tactics to protect against unauthorized duplication. Unfortunately, once these systems have been defeated, there is no way to restore the game to a secure state. Web game services do not have this problem as the operation of the service provides some measure of protection against piracy. Web game services do not protect against duplication of legitimate copies of a game – at best they typically prevent concurrent use of a game account. In addition, it is also necessary to protect not only the game itself, but all copyrighted materials contained within the game, any and all music, sounds, artwork, storylines, etc. that are created or derived from copyrighted work. A detailed discussion of these issues as they relate to piracy can be found in our discussion on DRM.

1.3 Ghost Servers & Doppelganger Services

Web games have given rise to a new problem – creating pirate servers and services, not just pirating games. Though this problem is new, it is in some sense worse than traditional piracy. The game server or service operator has often invested substantial resources in the game infrastructure. Whether the game service provider is trying to operate a subscription service or simply providing a quality Web service with marketing and license registration features, the game service is an important business asset. In the US, the BnetD application that emulated Battle.Net is a recent example. In Asia, the problem has been more serious. Due to widespread software piracy problems, subscriptions are virtually the only viable business strategy for game developers. Unfortunately, pirates have set up alternate game servers and hosting services threatening the subscription revenues of legitimate game developers and operators.

1.4 Data Spoofing

One of the simplest means to attack games is to spoof the data passed between participants. We distinguish this from “State Spoofing” described below as altering the local game state. Data spoofing may consist of altering player actions, updates to game state, or any other information exchanged between game players. This can occur at two levels: “on the wire”, after the data has been sent; or internally, before the data has been packaged and sent to the remote location. Traditional security tools such as encryption and digital signatures are powerful methods to protect against “wire” based or third party attacks.

Unfortunately for game developers, these attacks are the least likely – game players themselves are the most serious threats to networked games. The malicious alteration of data by a game player can only really be stopped by effective verification of the incoming data itself. This does have serious design implications for networked game programmers. If a game sends raw game state updates to remote players, the ability of the receiving game instance to validate the changed state may be difficult. Data exchanges that map to “player actions” may be easier to validate as they correspond to inputs to the game rules. Chess provides a straightforward example: it is easier to validate whether a Knight can move from one position to another than to compare the game board before and after the move to determine if the new board could have resulted from the old one.

1.5 State Spoofing & Disclosure

The local game state is inherently vulnerable to attack. It sits on the computer of the potential hacker and, if the game is going to work, the game code has to operate. The reverse engineering of the game state and rules is virtually inevitable. While there are tools to obfuscate code and data, they probably only delay the problem. They may also introduce performance and testing issues for the game developer. The best

approach is to design game software so that the known game state does not damage the security of the game. This may not be practical for games with rigorous performance requirements and low bandwidth. As discussed above with data spoofing, the alteration or manipulation of the local game state should not permit an advantage against other players. The worst-case scenario should be the cheater simply falling out of synch with the rest of the players.

1.6 Net Time Manipulation

“Time Hacks” have been one of the most persistent problems for network games. By manipulating the apparent lag between players’ computers, cheaters can give themselves a performance edge. A hybrid between time hacks and data manipulation hacks is to overload a receiving system with more actions than should be allowed within a given time interval (more moves or shots than should be permitted). Part of the rules validation discussed above should be temporal rules, not just state-based rules. Maintaining time synchronization is a problem for computer games, but actually Web Chess faces a worse problem – trying to control the game clock in a manner that is fair to all players.

1.7 Score Spoofing

One of the simplest ways to encourage participation in Web games is through a shared high score board. Unfortunately, some players will spoof their score to get on the high score board. If there is no interaction between the game application and the game provider, it is very difficult to detect such spoofs. Hackers will reverse engineer the game application to determine what they need to do to submit a high score. If the game is implemented so that it is completely interactive with the game host, such spoofs can be stopped; the problem with this approach is the bandwidth and processing requirements to support this approach.

1.8 Tournament Collusion & “Playing with Yourself”

One of the fastest growing portions of the network game business is offering tournaments. As usual, hackers follow the market. For tournaments, players can collude with other players or create fake player accounts to boost their ranking. This problem is worst for free tournament systems (the cost of registration and play tends to naturally deter this tactic), but could be a concern in games with substantial prizes or other incentives. Though various means can be used to monitor who plays with whom, the best method for official tournament games is probably to randomly assign opponents and change them regularly. This is well proven in the traditional games world for card rooms.

1.9 Optimal Play

The problem of a “perfect player” or “aimbot” is not exclusive to computer games. In some sense, a card counter in Blackjack is exactly the same – a player following the rules of the game who is using all of the information available to him to his best advantage. This problem is more of a game “system” or design issue than a security problem – it would be much better to remove optimal strategies from computer games. It is more fun, after all if there are meaningful strategic choices. A good “aimbot” will be nearly indistinguishable from a good player (barring other cheats, of course).

1.10 Griefing

The in-game abuse of other players has been a problem as long as network games have. These players are carrying out activities that are legal under the rules of the game, but detrimental to the fun and game experience of the other players. This is no less important an issue than cheating or hacking, but it does need to be countered differently. Spawn killing (killing characters where they enter or re-enter a game) and camping (waiting in a location where a high value creature or item will appear) are both examples of the problem. Once again, good game design practices are probably the best mechanism to counter these issues. For example, instead of having monsters created at a fixed location, they could be created through a probability model in an area where an individual or party is roaming. By eliminating the fixed location, the incentive and advantage to camping goes away.

1.11 Outsourcing Play

Recent news reports have discussed MMOG players outsourcing the “operation” of their characters while they work or sleep to other players in Russia and other countries. Players hiring other players to play on their behalf may or may not be a security issue for Web game services today, but it could become a problem if it distorts the experience of the game for other players. Since most Web game services are protected solely by user name/passwords, they do not have a good method to protect against this problem. Also, game service providers must balance the convenience of allowing players to use multiple computers (such as a home PC as well as a laptop) with security requirements. It is interesting to note that the older model of metering gameplay by time would naturally address this issue.

1.12 Denial of Service

The problem of denial of service attacks against games and game servers is shared with all other Web transactions. There is no way to completely stop an attempt to bring down a network service. However, game software should be designed robustly to only accept “good” data from valid sources and generally resist buffer overflow and other traditional attack methods. Centralized commercial game services can use rate filters, intrusion protection systems, and other tools to harden themselves against these attacks.

2. Game Software Security Tools

There are a number of game software security tools. These products attempt to detect and counter cheating software by various strategies. Typically, they are built for client/server games where the server is assumed to be trustworthy. Some current products in this area include HLGuard, Cheating-Death, nProtect’s Game Guard, and Even Balance’s Punkbuster. Each of these products must be tailored for a specific game and must be updated as new attacks are found. Since they are a separate software package, these tools can be added in to an existing game.

The server portions of such solutions look for anomalous network traffic that corresponds to various cheating packages. This is very similar to conventional Intrusion Detection Systems (IDS) that have a catalog of signatures that they continuously search for. This catalog is continually updated with new “cheat signatures”. The server may also use heuristics to attempt to detect new forms of cheating. Some of these server tools probe the client-side player platforms to determine if the corresponding client security software is in-place and operating properly. The server may also support a registry service for good and bad players.

The client portion of these solutions also is looking for cheating software (sometimes referred to as “warez”). The security client software faces a particularly daunting task as the player typically willingly, if not eagerly, has installed the malicious code. These solutions work similarly to anti-virus software – looking for “warez” signatures. They may also work in a more intimate fashion with the game to make certain types of cheats impossible (Cheating-Death relocates the local position of illegitimate targets to a point where they cannot be attacked).

Makers of these security tools are in a continual “arms race” with the cheating community. Cheaters will reverse engineer and circumvent each version of security code and the toolmakers must continually work to keep up.

2.1 Game Protocol Security Tools

By their nature, Web games can be attacked both within the local software and on the network connection between players or between a player client and the game server. Encryption and digital signatures can prevent manipulation of game data and against disclosure. This can be very effective against third parties but, as noted above, may be less effective against a malicious player client.

A different approach is to secure the game transaction between the players. The SecurePlay library does this by implementing game transactions in a manner that is mutually suspicious. This approach means that the participants in the game do not need to trust the other players’ software – as long as the transaction is valid, the game is valid. These basic transactions can be combined together to implement the various game rules and provide overall game integrity. The advantage of this approach is that the

Web game can be assessed secured entirely through the network transactions between the players (or a player and the game server) without requiring any trust in the remote party. The challenge comes from building these transactions into the game, rather than adding an after-release security tool.

2.2 Piracy & Digital Rights Management (DRM)

Game developers need to be concerned both with the protection of media assets as well as the game itself. Art, music, and other third-party copyrighted assets may be used under license in a game. This discussion covers both general DRM and addresses issues specific to games.²¹

3. The Digital Media Life-Cycle

To understand the role of digital security, one must begin with the lifecycle of digital media from creator to consumer. The process described below highlights the major stages of this lifecycle and they vary from music to video to films to games, but the essential steps are the same:

- ?? **Creation** — the creation of the media in its original format. Content may come from other sources. There is no real means today to provide or mandate appropriate copyright citations or pay royalties.
- ?? **Mastering** — the conversion of the original work into a format suitable for distribution.
- ?? **Production** — the printing, stamping, and reproduction of master onto physical media.
- ?? **Vendor Distribution** — the distribution of media to retailers or end users.
- ?? **End-User Distribution** — this stage moves copies of the media to the end consumer or audience members.
- ?? **Conversion to User Acceptable Format** — the delivered media is read by a device or application and converted into a format that the user may see, hear or otherwise comprehend.
- ?? **User Experience** — the user is able to experience a replica of the original material.

The critical challenge that security systems for digital media face is that an adversary attempting to circumvent the security system must deliver a comparable or identical User Experience. Thus, security measures must only be separated from a "User Acceptable Format" (UAF) as opposed to actually being defeated (*Why break down a locked door when there is an open window nearby?*). The existence of common, non-proprietary or non-royalty bearing encoding systems such as MP3, JPEG, etc. gives an adversary a means of distributing media in a (UAF) at low or non-existent cost. The adversary's objective, therefore, is reduced to migrating from a secured format to a UAF.

This is not true for many games where the game engine itself prevents creation of a UAF version of the game itself, but not art, sound, or other assets.

4. Current Security Solutions

The current solutions for securing digital media can be divided into the following general categories. Some systems combine elements of several of these categories (i.e, combining a digital signature with a fingerprint and proprietary encoding):

4.1 Proprietary Encoding

Proprietary Encoding is the use of distributor-controlled medium for the distribution and reading of digital media. This solution has been used most widely for DVDs. Proprietary encoding enables post processing and a multitude of other security controls to be implemented – whatever the developer of the proprietary encoding system wishes (as also noted with DVDs that include regional controls over and above traditional copyright protections that limit the use of DVDs to certain geographic regions based on configurations of DVD players).

The practical problems associated with proprietary encoding include their limitations on artists and distributors for the production and control of media as well as issues of royalties to the owners of the

²¹ Davis, Steven B. "Beyond Digital Rights Management – Toward a Digital Media Marketplace". IT GlobalSecure, Inc., Copyright 2000, <http://www.itglobalsecure.net/pdf/BeyondDigitalRights.pdf>

encoding technology (as witnessed by the recent and ongoing battles over DVD RAM and previously with VHS and Betamax).

The security problem with proprietary encoding schemes is that they are subject to reverse engineering (DeCSS for DVD that allows DVDs to be read and processed in software by PCs with open source tools) and, in the hands of pirates, to the regeneration of media into any form and format desired. DeCSS showed that the reverse engineering of the DVD proprietary encoding system was not difficult, so a pirate would be able to gain access to the program or do the reverse engineering herself and still can. There is a general security principle that must be recognized: any security system that is mass-produced by the millions can and will be broken by the few for the benefit of many. Economics and engineering all favor the adversary. Cable scramblers, DVD encoding, and file protection schemes for games have all shown that virtually any security system can be broken.

The approach of most DRM and other security solutions today is to “buy time”. Games and most other media have a very short “shelf-life”. By protecting a game or other media against piracy for days to weeks to even a month, many sales can be protected.

4.2 Post-Processing

Post-Processing is the alteration, encoding, or other modification of digital media during the act of copying, playing, or distribution. DVD is again an example of this type of system where DVD players output a signal that cannot be easily transferred to videotape. This can be used in conjunction with counters and other means to track the number of times that a piece of digital media has been copied and so trigger limits on copies and redistribution (either stopping the redistribution or degrading the copy through subsequent generations).

The security problems with post processing are identical to those with proprietary encoding and fingerprint systems. If the post-processing system can be reverse engineered or bypassed, then a product can be produced to “reset” the media to a pristine state. Or, if the post-processing uses some fingerprinting approach, a “BEFORE” copy can be compared with an “AFTER” copy to identify and remove the security fingerprints. Finally, it is quite possible for an audience member to be able and willing to accept imperfection – the adversary objective is user acceptance, not perfection. It is notable that these security mechanisms are most effective against individual audience members, not large-scale pirates.

4.3 Physics & Engineering

Certain anti-copying technologies rely on the low-level physical characteristics of physical media and the engineering design of digital media readers. These techniques are subject to the wide range of design and specification of consumer electronics (either causing the security technology to fail or resulting in the media being unreadable by legitimate customers). These solutions do not work at all for downloaded electronic media since there is no standard physical media or writing process. They can be circumvented by using low-level copying or production tools to preserve or bypass these technologies.

4.4 Watermarking

A “watermark” is information that is embedded in all copies of a piece of digital media. The information is either identical for all copies or divided into large categories. (The most familiar “watermarking” system is the regional encoding used for DVDs.) Watermarks can more easily be engineered to reduce the amount that they degrade a digital media source and are also much easier to produce than fingerprinted systems. (See production challenges under “Fingerprinting”.) Watermarks are typically used with proprietary encoding or post-processing systems to limit copying or other use of digital media. Watermarking is much more a forensic than a digital rights security tool – only special devices can read out the watermark. In this scenario, the source of large-scale pirated copies can be identified by determining the “batch” and source of the security leak. Theoretically, watermarks can be used for digital rights protection. However, the fact that the watermark is common across all copies and that all audience media players will have a copy of the “watermark checker” invites circumvention.

Watermarks can be removed or altered if copies are available with different watermarks. They can also be removed (or inserted, if necessary) if the watermarking scheme is reverse engineered.

4.5 Fingerprinting

These are copy unique identifiers embedded in a piece of digital media. Fingerprints are actually placed inside of the media file – modifying it in small, undetectable ways that ensure that the fingerprint is present without distorting the base media. The digital fingerprint must match the identifier of the media player in order to be used as a digital rights tool. This technology has been proposed in order to track user authentication and limit copying. There are several fundamental challenges to the use of fingerprint systems: production of unique media for every user, ensuring that the “unique ID” of the player cannot be duplicated, and ensuring that the fingerprint cannot be removed.

4.6 Covert Fingerprinting

Like Fingerprinting, Covert Fingerprinting embeds unique identifiers into each individual a piece of digital media. With this technology, customer media readers do not process or identify fingerprints. Rather, media distributors or their agents will scan widely distributed copies and use the covert fingerprints to determine the source of unauthorized copies.

Three challenges exist in the implementation of digital fingerprinting systems. The primary obstacle in the deployment of digital fingerprint systems is the registration of authorized consumers. While authorization can be integrated into an on-line sales process, this system does not mesh well with current traditional sales approaches (such as CDs or DVDs). The other practical problem is the creation of unique fingerprints for each copy of a base product (also technically difficult for traditional distribution). Finally, the main security challenge for digital fingerprint schemes is that fingerprints are easy to detect and alter, especially for large-scale pirates. The following process provides an example of how a pirate may work around digital fingerprinting.

1. A pirate can buy two legitimate copies of the media (COPY1 and COPY2).
2. She can then "add" the two copies together:
3. (COPY1 + COPY2)
4. Since each has the same base media that has incorporated the fingerprint, she can identify the fingerprint:
5. $COPY1 + COPY2 = MEDIA + FINGERPRINT1 + MEDIA + FINGERPRINT2 = FINGERPRINT1 + FINGERPRINT2$
6. Thus, separating the media from the fingerprint
7. The media components cancel out and the fingerprint can be identified and either 1, garbled so it is ignored or 2, removed entirely. Thus fingerprinting becomes much better at protecting against casual "fair use" than against large-scale piracy. This approach will work with as few as 2 real copies, so even small-scale piracy is not too difficult.

Because many games support Web play, registration and download systems can incorporate watermarking and fingerprinting into the distribution process with much less effort than for physical media. Web game services themselves are a powerful DRM tool.

4.7 Security Labels or Tags

Security Labels (or “Tags”) are supplementary tags that are appended to a piece of digital media and may also be bound to it by a digital signature (see “Signatures” below). Tags are typically used with proprietary encoding and post-processing systems to limit copying or other use of digital media. They can include simple copy counters, serial numbers, or other identification and use control information.

Tags are easily removed or altered, as they are a distinct portion of a digital media file or stream.

4.8 Signatures

Signatures wrap a piece of media with a tag that includes additional information but is also derived from the media itself. Signatures are used in combination with one of the other means of protection. The important attribute of signatures is that a signature verifier cannot also create a valid signature.

Signatures are most useful as part of an individual identification scheme and thus have the same problems with registration noted for fingerprints. Also, the signature is additional data that can be removed either directly or via the same type of scheme as described above for removing embedded fingerprints. If a signature is required by the media player (or game engine), then the discussion of attacks on proprietary encoding applies. Once the signature has been stripped, the data can be translated into an alternate format that is freely readable and does not require a digital signature for use. Thus, the attack circumvents the signature and does not defeat it.

As noted previously, because of the complexity of game engines, a signature-based solution, if properly designed, can be effective.

4.9 DRM and Anti-Piracy Solutions

There are a number of standard commercial anti-piracy solutions. Macrovision and Aladdin Data Systems have targeted the games industry and provide physical media security, software security, and token-based security systems. There are also shareware distributors like Esellerate that include DRM and anti-piracy as well as e-commerce features. There are a growing number of DRM companies that are focusing on the games industry. Most of these companies deliver an integrated distribution, DRM, and e-commerce solution (with try-before-you-buy, limited use, expiration, and other features). Exent, Real Arcade and Trymedia are in this category. Some game companies, such as Valve, with its Steam service, and Blizzard's Battle.net, have created their own solutions. IT GlobalSecure has linked Web game play to anti-piracy and DRM with its SecurePlay Keeper product.

VI. Games to Market: Working with Publishers and Distributors

A. Overview

In the retail console and PC side of the game industry, games do not go to market without the involvement of a publisher and a distributor. Production and marketing budgets are massive and few developers can pay the bill on their own. Retail shelf-space is also at a premium and tightly controlled, making the choice of a distribution partner a critical factor in selling your game in the marketplace. Within the Web and Downloadable games space, there are both similarities and differences to these situations.

With vastly smaller production budgets, web/downloadable games can often be funded by the developer. Retail outlets, in the form of large Internet portals, are still quite accessible relative to the game section of your local Best Buy. Nonetheless, publishing and distribution partners can add significant value to the process of creating a product and bringing it to market. They can relieve a developer of much of the business development and logistical effort of ensuring that a game is distributed as widely as possible.

Since developers are negotiating multi-title deals with distribution channels, they may also be able to negotiate better revenue-share deals and better promotional placement. A small developer may also consider the peace of mind gained by offloading some or all of the financial risk to a publisher. As production values (and therefore production costs) in the downloadable space climb steadily in order to keep pace of consumer expectations, we can expect publishers to play a more central role in this space.

On the distribution side, web/downloadable games would seem to be a dream come true for a small, independent developer. Just make the game, launch it on your website, and let the money roll in! Sadly, this is far from the reality. With average conversion rates for downloadable games in the 1-4% range, the key to success is generating a high volume of downloads of your trial version. Distribution portals have already invested tremendous amounts of marketing money to build up their traffic and this is developers' best shot at achieving meaningful sales. In addition, distributors handle the financial transactions, customer support, and hosting/delivery of your game. Some distributors also offer localization and beta-testing services.

This section of the whitepaper is to provide specific information about potential publishing/distribution partners and the role they play in the Web and Downloadable game market. We sent a questionnaire to the leading publishers and distributors in the web/downloadable games industry so that they could communicate to developers their particular business focus, the mix of services they provide, and the best way for developers to approach them. What follows are their **verbatim responses** to our questionnaire. This information can be used to identify potential publishing partners that developers may want to contact via an industry network such as the IGDA or at a professional event such as the GDC.

(Note: this list is for informational purposes only. It does not offer any assurances that communication or business dealings with the companies presented will be accepted or supported by these companies.)

B. Index of Companies

- ?? Web/Downloadable Publishers/Distributors
 - ~~///~~ AOL Games
 - ~~///~~ Big Fish Games
 - ~~///~~ GameBubbles/Bluefish Media
 - ~~///~~ GameHouse
 - ~~///~~ Garage Games
 - ~~///~~ IWin
 - ~~///~~ Oberon
 - ~~///~~ PlayFirst
 - ~~///~~ PopCap
 - ~~///~~ Pogo
 - ~~///~~ RealArcade
 - ~~///~~ Shockwave
 - ~~///~~ Trymedia

~~///~~ Wild Tangent
~~///~~ Yahoo
~~///~~ Zango

?? Web Tournament Providers
~~///~~ Arkadium
~~///~~ WorldWinner

C. Web/Downloadable Games

1. AOL Games

1. Please give an overview of what your company offers game developers.
AOL Games offers game developers one of the largest networks for game distribution and promotion of Web and Downloadable games which includes the AOL service, AIM, Netscape, CompuServe, AOL.com and AOL CD-ROM opportunities. Our content strategy is focused on providing players with a smaller selection but higher quality games. Since approximately 50% of the US households are still on narrowband connections, we feel it a good member experience to provide a web playable game to cross promote the premium downloadable offering. We accept only finished products that have been thoroughly tested. We prefer downloadable games that also have a free web version. Our focus is on the North American market but we do offer distribution opportunities with our AOL International properties (UK, Germany, France and Latin America). Our target audience is both the casual and hardcore game player.
2. Publishing – If applicable, define your offering.
At this point in time, AOL Games does not publish games.
3. Distribution – If applicable, define your offering.
AOL Games currently works with a select number of large content publishers/aggregators in the marketplace including but not limited to Trymedia, GameHouse, PopCap, and Oberon. These companies know our marketing and technical requirements and work closely with us during the content review and selection process. AOL Games controls what games are distributed and promoted on the AOL network. We currently use Trymedia for our DRM solution.
 - a. What types of games does your company seek/accept? What types do you avoid?
We review and accept all games targeting both the casual and PC gamer audience. If a game is similar to an existing game on the AOL service, it needs to either be clearly better than the existing game or a very different version of that type of game. At this point in time, we do not accept web games built with Shockwave.
 - b. Do you offer channels for game platforms other than PC? If a developer has a Mac, Palm or mobile version of its game, we will also consider distributing those versions as well.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries. Worldwide reach potential (excluding Asia) targeting both casual and hardcore game players.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
AOL will host the Web and Downloadable game versions as well as provide reporting on game performance and sales.
 - a. Does your company provide localization services? No
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
If AOL selects a game to launch on its service, the new game will be promoted on the games main screens and potentially on the home pages of selective AOL entry points.

The AOL Games team generally only provides AOL "Welcome Screen" promotion to those downloadable games that have a free web version.

- b. Does your company offer channels for OEM and other such licensing deals?
We bundle select downloadable games on the AOL CD which has a large reach at the retail channel and mass mailing.
 - c. Is there a direct contact and/or Account Manager assigned to each account?
Game developers would work through one of our content partners such as Trymedia, GameHouse, or Oberon.
6. Commission Structure
- a. Commission breakdown: Revenue share based on net sales.
 - b. How does your company pay? Monthly via wire transfer.
 - c. Is a Detailed Accounting Report included? We provide monthly reports that show unit sales, refunds and revenue by game.
 - d. Is real-time online reporting offered? Discussed on a case by case basis.
 - e. Is the accounting department open and available for direct contact? One would work through our partners for any accounting questions.
8. Company Contact Information

Greg E. Mills
Surfmills@aol.com
Director of Premium Games
AOL Games
650-937-4006
AOL Keyword: Games
Web: <http://onlinegames.channel.aol.com>

2. **Big Fish Games**

1. Please give an overview of what your company offers game developers.
Big Fish Games is a high volume distributor of 'casual' games in the try-before-you-buy model. We paid out over \$1.4Million in royalties to developer last year.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
Casual games (Puzzles, card, arcade, board, etc). No large downloads (>20MB). No violent games.
 - b. Do you offer channels for platforms other than PC? No
3. Distribution – If applicable, define your offering.
Place all files you send to the FTP below and drop an email to paul@bigfishgames.com to let us know it is there. We will then evaluate the game and if there is a fit let you know what next steps are.
ftp://bigfishgames.com/drop_folder/
Username: drop
Password: bfg*login
 - a. What types of games does your company seek/accept? What types do you avoid?
Casual games (Puzzles, card, arcade, board, etc). No large downloads (>20MB) No violent games.
 - c. Do you offer channels for game platforms other than PC? No
 - d. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
US, Germany, Spain, France, with plans to move into China, Korea, and Japan.

4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
[No](#)
 - a. Does your company provide localization services? [Yes. In exchange for 60 day exclusivity](#)
5. Marketing
 - a. What promotional services are provided or offered at no additional cost? [Confidential](#)
 - b. Does your company offer channels for OEM and other such licensing deals? [No](#)
 - c. Is there a direct contact and/or Account Manager assigned to each account? [Yes](#)
6. Commission Structure
 - a. Commission breakdown: [Confidential](#)
 - b. How does your company pay? [Monthly – Check and transfer](#)
 - c. Is a Detailed Accounting Report included? [Yes](#)
 - d. Is real-time online reporting offered? [No](#)
 - e. Is the accounting department open and available for direct contact? [Yes](#)
7. Company Contact Information:
[Paul Thelen](#)
[Founder and CEO](#)
[Big Fish Games LLC](#)
www.bigfishgames.com
paul@bigfishgames.com
[206-213-5753](tel:206-213-5753)

3. **GameBubbles/Bluefish Media**

1. Please give an overview of what your company offers game developers.
[GameBubbles/Bluefish Media is a leading computer games online distributor and publisher. We are continuously expanding our own network of affiliates throughout Europe, with a very strong focus on German markets. In addition, we publish casual games on prime US game portals \(e.g. RealArcade, Yahoo!, BigFish Games\)](#)
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
[Our company seeks games that catch casual gamers' attention. Action Puzzles have been traditionally strong in this segment. New concepts are breaking through, such as arcade, word and other genres. We stay away from shooters.](#)
 - b. Do you offer channels for platforms other than PC?
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
[All of the above.](#)
 - b. Do you offer channels for game platforms other than PC? [Mobile gaming. Console.](#)
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
[Germany/Austria/Switzerland, Reaching about 80% of German speaking population. Plans to move into more European countries \(e.g. France, UK, Spain\).](#)
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
[GameBubbles/Bluefish Media provides a full fledged distribution solution, including a customized DRM, online reporting and other tools.](#)
 - a. Does your company provide localization services?
[Yes. Fees depend on amount, complexity, and other factors. Feel free to contact us.](#)

5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
All games are launched with similar exposure/placement. Quality of games defines ultimate success in our channels.
We use/place banners provided by the developer or designed inhouse
Run our own email newsletter blast
 - b. Does your company offer channels for OEM and other such licensing deals?
We in the process of offering OEM and arcade coin-op opportunities
 - c. Is there a direct contact and/or Account Manager assigned to each account? Yes
6. Commission Structure
 - a. Commission breakdown: Commissions depend on various factors, such as quality of game. Feel free to contact us.
 - b. How does your company pay? Monthly, by check/wire transfer
 - c. Is a Detailed Accounting Report included? yes
 - d. Is real-time online reporting offered? Being deployed
 - e. Is the accounting department open and available for direct contact? Yes

7. Company Contact Information:
www.GameBubbles.com; www.bluefish-media.com

GameBubbles, LLC.
Miguel Oliveira, Publishing, moliveira@gamebubbles.com
323-634-0640

Bluefish Media GmbH
Cyrus Kargar, Marketing, kargar@bluefish-media.com, +49 (234) 640-7975

4. **GameHouse**

1. Please give an overview of what your company offers game developers.
GameHouse is the largest single publisher of Online & Downloadable games. In addition to distributing titles through GameHouse.com – the 6th largest online downloadable and web-based game destination site, we distribute games to every major game website in the world including AOL Games, MSN Games, Yahoo! Games and hundreds of other sites. In addition to distributing our own games through this network, we publish the games of several other developers such as Skunk Studios, Mumbo Jumbo and Sprout Games throughout this network. The developer only needs to deliver one build and GameHouse completes the individual partner builds, performs QA services and any marketing materials required by the channel. We also have an extensive mobile publishing group that can handle all development and porting required to support carriers worldwide.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
GameHouse considers all casual game content for distribution; from puzzle games to arcade games. We do not publish any mature-rated content.
 - b. Do you offer channels for platforms other than PC?
We publish worldwide on PC, Mac, and mobile. We also have retail brick and mortar distribution. In some cases we offer completion advances.
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
We distribute and represent only Casual content. We do not distribute mature-rated content.

- b. Do you offer channels for game platforms other than PC?
We have a strong mobile games business.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
Most of our international distribution is through third-party aggregators of content. However, on titles we publish we offer localization as part of the service we provide.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
We have a reporting tool for developers that allows them to access their statements online. We have our own DRM yet don't require developers to integrate it as it does not require code modifications.
- a. Does your company provide localization services?
On games we publish, we offer localization services as part of our publishing agreement.
5. Marketing
- a. What promotional services are provided or offered at no additional cost?
We will market all games upon launch via (direct and indirect means) using keyword acquisition, search engine optimization, email broadcasts, newsletters etc.
 - b. Does your company offer channels for OEM and other such licensing deals?
Our in-house affiliate program is available to all developers and in certain situations OEM and other strategic partnerships may be made available, as opportunities present themselves.
 - c. Is there a direct contact and/or Account Manager assigned to each account? Yes.
6. Commission Structure
- a. Commission breakdown: 20-30% of Net Revenues are shared with developer.
 - b. How does your company pay? Monthly, by method most appropriate for the relationship.
 - c. Is a Detailed Accounting Report included? Yes
 - d. Is real-time online reporting offered? Yes
 - e. Is the accounting department open and available for direct contact? No
8. Company Contact Information:
www.gamehouse.com
Ron Powers
Senior Director, Business Development
Ron@gamehouse.com
206-442-5881 x 13

5. **Garage Games**

1. Please give an overview of what your company offers game developers.
GarageGames offers independent developers state-of-the-art game development tools, community, and markets for games. GarageGames offers both exclusive and non-exclusive publishing and distribution opportunities for quality game content. We have distribution channel partnerships setup with nearly all major online portals. The majority of our distribution is in North America and English speaking global markets. Some of our top titles have been localized for other markets.
2. Publishing – If applicable, define your offering.
- a. What types of games does your company seek/accept? What types do you avoid?
We look for fun and innovative commercial quality games. We're not looking for low-end bubble popper and puzzle games.
 - b. Do you offer channels for platforms other than PC?

In addition to Windows we offer Mac OSX, Linux and other product specific opportunities like Xbox Live Arcade and Infinium Labs – Phantom.

3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
We have both casual and hardcore games. We look for games that redefine a known play mechanic or open up a niche game market with compelling new content. We stay away from MMOG's, small flash games and retreads of retro arcade games – ie. Matching, arkanoid, and simple puzzle games. As our FAQ states, “we stay away from bubble poppers, Break Out variations, jigsaw puzzles, Tetris variations, or old school side scrollers.”
 - b. Do you offer channels for game platforms other than PC?
PC – usually means Windows. We offer direct distribution opportunities for OS X & Linux.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
GarageGames is currently partnering with other distribution channels to achieve greater penetration into the global games market.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
We provide Ignition as a c++ library for DRM, online reporting of direct sales and monthly sales and royalty reports.
 - a. Does your company provide localization services? Not currently.
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
We provide press support, consultation on marketing materials and promotion game events. We have an annual conference that deals with development and business issues for independents as well as opportunities to promote games at conferences and events we attend during the year.
 - b. Does your company offer channels for OEM and other such licensing deals?
We provide domestic and oversea distribution and OEM opportunities to our games.
 - c. Is there a direct contact and/or Account Manager assigned to each account?
Yes. GarageGames puts as much priority to finding good teams and building relationships as just looking for game content.
6. Commission Structure
 - a. Commission breakdown: Garagegames offers non-exclusive games 50% and exclusive games 65%.
 - b. How does your company pay? Monthly - Paper Check
 - c. Is a Detailed Accounting Report included? Yes by platform.
 - d. Is real-time online reporting offered? For our direct online sales yes.
 - e. Is the accounting department open and available for direct contact? Yes, but this is usually handled by account managers.
7. Company Contact Information:
www.garagegames.com
<http://www.garagegames.com/pg/publishing.php> & our game publishing FAQ (goes deeper into most of these questions).
<http://www.garagegames.com/index.php?sec=mg&mod=resource&page=category&qid=124>

How do I submit my game?

Send an email to game_submissions@garagegames.com with a link to your company website, a brief description of your game, a screenshot, and a link to your demo (if available). Please do not attach demos to the email. Note: We hope you can understand that due to the number of submissions we receive, we will not be able to reply individually to every email.

6. iWin

1. Please give an overview of what your company offers game developers.
iWin is a publisher and developer of premium web and download content. As a successful developer of Jewel Quest and Mah Jong Quest, we were able to establish direct deals with all of the top distributors domestically and internationally. Since iWin has established a reputation of delivering quality titles, an Independent Game Developer could leverage our brand and respect by publishing a game through us. As a game publisher, we have the experience of localizing our content into multiple languages, porting the game for retail and wireless. Another unique advantage of working with iWin is that we have our own 1st party distribution network via www.iwin.com and www.playsite.com. And most importantly, iWin is willing to fund development or commit development resources if a developer has a great game concept. Furthermore, iWin has created a very mature game framework that will help an independent developer expedite their development efforts as well as meet the requirements of the distributors. Lastly, iWin can provide beta testing and QA.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
iWin is open to all game genres but we are most interested in puzzle, word, card, light action and arcade. We tend to stay away from the following genres: sports, shooters, and RPGs.
 - b. Do you offer channels for platforms other than PC?
We also offer cell phone and Mac games.
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
 - b. Do you offer channels for game platforms other than PC?
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
iWin is focused on the casual PC market and we actively seek the following genres: word, puzzle, card, board, arcade and light action. We stay away from the hardcore market. At this time we are primarily focused only on PC distribution. Our distribution is primarily targeted to the US market and our reach is about 1.5m monthly unique visitors. The audience is 70% women between the ages of 30-55.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
iWin has a very mature framework that we used to build Jewel Quest and Mah Jong Quest, and we would be willing to provide an independent developer access to this resource. Our framework is a feature-rich environment that provides full screen/Windows support, a sprite animator, Unicode support for localization into all languages, standard menu interfaces for easy plug-and-play integration, encryption code to protect your assets, and much more.
 - a. Does your company provide localization services?
We have access to development partners who localize products into multiple languages. Typically, this development is not undertaken until the title is known to be a success. Fees are determined on a case-by-case basis.
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
 - b. Does your company offer channels for OEM and other such licensing deals?
 - c. Is there a direct contact and/or Account Manager assigned to each account?

IWin takes great pride in supporting the top games on our network through email, banner promotion, and top 10 list. No, we don't offer OEM deals. Yes, an account manager is assigned to each developer.

6. Commission Structure

- a. Commission breakdown: Commission is determined on a case-by-case basis.
- b. How does your company pay? We pay monthly
- c. Is a Detailed Accounting Report included? Yes, a detailed report is included
- d. Is real-time online reporting offered? We can offer limited real time reporting
- e. Is the accounting department open and available for direct contact? Yes, accounting is open for direct contact.

7. Company Contact Information

www.iwin.com
CJ Wolf, CEO
cj@iwin.com 415-348-7250

7. Oberon

1. Please give an overview of what your company offers game developers.

Oberon Media is both a distributor and publisher of Online Downloadable and Web-based games. Oberon provides developers with worldwide access to the entire breadth of today's gaming audience, whether that's placement on our exclusive network of Game Centers or on other major game portals. Oberon Media also works closely with developers on new projects, funding a developer's own game concepts or collaborating on Oberon game properties.

2. Publishing – If applicable, define your offering.

Oberon Media works with experienced development studios seeking financial backing and a distribution partner to create their dream products. An experienced staff of producers provides ongoing support and guidance to ensure a high quality product, guaranteed distribution through Oberon's exclusive Game Centers, and representation to other distribution channels.

For developers with existing properties who just need help with their broader distribution efforts, Oberon Media has excellent relationships with all major game portals, from Yahoo, MSN and AOL to Real Arcade and Shockwave. Through these relationships, we help our development partners reach the entire range of today's gaming audience.

Oberon Media also works with developers looking for distribution on the new X-Box Live Arcade platform. Oberon is the leading publishing partner with Microsoft on their initial launch titles for 2004 and 2005.

- a. What types of games does your company seek/accept? What types do you avoid?
Oberon Media publishes games across all current genres in online/downloadable games, as well as pushing the envelope of new genres not yet explored. Oberon Media does not publish 'mature/adult' titles.
- b. Do you offer channels for platforms other than PC?
Oberon Media is currently focused on PC, Mac, Web and X-Box Live Arcade.

3. Distribution – If applicable, define your offering.

Oberon Media builds and manages an exclusive worldwide network of Game Centers. These large traffic hubs represent access to 100s of millions of customers and include MSN Games, ICQ, Lycos Europe and over 80 others. Oberon continues to grow this audience as well, launching new Game Centers every month. One distribution contract with Oberon Media opens the door to all of these existing and future exclusive channels. We've seen explosive growth this past year and 2005 will see equally exciting explorations into new platforms and new markets.

- a. What types of games does your company seek/accept? What types do you avoid?
The same as our published titles, Oberon Media seeks the broadest portfolio of genres. Because of our extremely diverse network of Channel Partners, we are willing to take

chances on titles that are less 'mainstream'. Oberon Media does not distribute 'mature/adult' titles.

- b. Do you offer channels for game platforms other than PC?
Oberon Media is currently focused on PC, Mac, Web and Xbox Live Arcade.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
England, Spain, Germany, Italy, Sweden, Denmark, France, Netherlands, Australia, Korea, Singapore, Japan, China. With plans for continued growth throughout Europe and Asia.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
For our Game Centers, we prepare secured builds of each game with our DRM, host the game and handle e-commerce transactions. Our reporting system generates monthly reports, although developers may work with their Producer on more frequent updates as needed.
- a. Does your company provide localization services? If so, is there a fee?
Yes. Oberon has a strong and growing international presence through its Game Centers. This will depend on each game's localization needs.
5. Marketing
- a. What promotional services are provided or offered at no additional cost?
All new games receive similar promotional exposure across our network of Game Centers. After this initial launch period, promotion is based on performance.
 - b. Does your company offer channels for OEM and other such licensing deals?
Yes, for desktop PCs.
 - c. Is there a direct contact and/or Account Manager assigned to each account?
Each developer has a Producer to work with and manage their games.
6. Commission Structure
- a. Commission breakdown
We do not share these details publicly, but it is structured in line with industry standards.
 - b. How does your company pay?
Monthly, by Paper (U.S. companies) and Wire Transfer (international)
 - c. Is a Detailed Accounting Report included?
Yes. Reports include downloads, sales, conversion, and refunds.
 - d. Is real-time online reporting offered?
Not at this time.
 - e. Is the accounting department open and available for direct contact?
Yes, developers work with their Producer on financial/reporting questions.
7. Company Contact Information:
<http://www.oberon-media.com/corporate/developers.asp>
Publishing: David Nixon, Director of Publishing, davidn@oberon-media.com
Distribution: Brian Poel, Producer, brianp@oberon-media.com
Game Centers: Ofer Leidner, Head of Business Development, oferl@oberon-media.com

8. **PlayFirst**

1. Please give an overview of what your company offers game developers.
The PlayFirst games portfolio is a collection of popular entertainment games built on fresh ideas and new technologies. Are you interested in stretching genres, bending expectations, breaking rules and imagining and inventing the future of popular games? Then PlayFirst is the right partner for you.
PlayFirst is the first full-service games publisher focused on online casual or "popular" games. By providing a full suite of services, including funding, marketing, technology, creative, research, QA, localization and distribution, PlayFirst enables its development partners to focus on what they do

best – creating great games. PlayFirst has a seasoned management team dedicated to providing the essential business, marketing and sales support to provide each game with worldwide distribution and widespread visibility. Currently there are several companies that develop, distribute and license content, but PlayFirst has emerged as the first true full-service publisher for popular games.

Based in San Francisco, California, PlayFirst distributes games internationally through major online portals and networks, such as AtomShockwave, MSN Zone, TryMedia, and Big Fish Games.

2. Publishing – If applicable, define your offering.

- a. What types of games does your company seek/accept? What types do you avoid?
- b. Do you offer channels for platforms other than PC?

PlayFirst publishes popular games, those easy-to-learn games one plays for a quick break and ends up spending two hours with, which represent the vast majority of game playing that occurs around the globe. We're actively seeking games that appeal to "the rest of us," i.e., men and women who may not identify themselves as "gamers." PlayFirst games are distinctive in that they're easy to learn, difficult to master and provide a compelling story that engages the gamer. We're interested in all genres; including puzzle games, action games, word games and adventure games. We're not interested in concepts targeting the core gamer or excessively violent games.

Currently, we are mostly focused on downloadable games, but we will take our catalog to mobile platforms shortly and are already planning to take breakaway hits to traditional handheld/console platforms.

3. Distribution – If applicable, define your offering.

PlayFirst has not yet announced a generalized distribution practice – today we are focused on providing distribution for the games we publish.

4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):

PlayFirst offers its development partners full access to its "PFLIB" code library, which is the technology basis for internally developed titles. More details can be provided to interested parties if there is mutual interest in working together.

- a. Does your company provide localization services?

PlayFirst provides localization services to a variety of locales. PlayFirst does not charge fees for this service, but does recoup expenses incurred.

5. Marketing

- a. What promotional services are provided or offered at no additional cost?
- a. Does your company offer channels for OEM and other such licensing deals?
- b. Is there a direct contact and/or Account Manager assigned to each account?

Beyond the worldwide distribution of games through our increasing partner network, PlayFirst offers two types of marketing support: promotional marketing and consumer feedback. Regarding the first, the company will consider spending marketing budget on select titles to help them reach popular appeal. On the second, PlayFirst believes in testing games with real users early and often in the development cycle. We focus test all of our games at least once before release both to feed information back to development and to generate consumer insights we can share with our distribution partners.

PlayFirst assigns a dedicated Producer to each development partner. Additionally, as a relatively small company, our development partners have access to members of PlayFirst's experienced management team.

6. Commission Structure

- a. Commission breakdown
- b. How does your company pay? We have a number of different agreement structures that we use.

- c. Is a Detailed Accounting Report included?
- d. Is real-time online reporting offered? Is there a fee?
- e. Is the accounting department open and available for direct contact?

PlayFirst crafts each deal differently, depending on the needs of the development partner. We do pay monthly, and wish everyone else in the industry would as well! As a small company, everyone including the accounting department is accessible to our partners. There are no hidden fees – we are very clear about the deductions, which are only for actual/reasonable development and third party fees. In fact, we do not deduct for most of the value-add services we provide.

7. Company Contact Information:

<http://www.playfirst.com> – we provide a contact form on the site, and we DO read and reply to all developer inquiries!

9. **PopCap**

1. Please give an overview of what your company offers game developers.

The downloadable marketplace is currently undergoing a shift where distributors are getting savvier, focusing directly on the bottom line, and dealing with more games than ever. For the developer it's harder to get noticed, the quality bar is constantly rising whilst royalties are getting even lower. Publishing with PopCap presents a solution to those problems for developers. PopCap currently has ongoing business deals with all the Tier 1 distributors and by publishing with PopCap, developers get to leverage the marketing commitments, brand awareness, and favorable deal terms PopCap has secured to protect themselves, get maximum exposure, and sell the highest number of units - all while working with a trailblazing industry leader whose number one priority is to make good games great!

2. Publishing – If applicable, define your offering.

Developers can contact us by email at publishing@popcap.com. We'll look at a game at any stage of development from design doc to final, but prefer to see games that have at least a solid playable prototype. Most importantly, we're looking for developers willing to work on a game to make it the best game possible. We're not a clearing house for games and work with fewer partners but work with them closely.

a. What types of games does your company seek/accept? What types do you avoid?

We're looking for games that appeal to a casual audience, but not just puzzle and 'match-3' games. We feel that genre alone doesn't make a game non-casual - paying close attention to accessibility, theme and interface can help a game appeal to a wider audience, which is what casual games are all about. We stay away from games that aren't fun.

b. Do you offer channels for platforms other than PC?

By publishing with us we'll ensure that your game gets on as many platforms as possible including: PC, Mac, mobile phone, handheld, in flight entertainment, casino slot machine, interactive TV, console and even bar arcade machines!

c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.

PopCap has or soon will have a presence in every major market, either directly or through a strategic partnership. We are continually evaluating new markets and opportunities as they arise.

3. Distribution – If applicable, define your offering.

PopCap.com currently has over 6 million unique visitors per month, and is growing as fast as the casual audience is growing. Currently the only way to access these potential customers is to work with us on a publishing agreement.

4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
PopCap offers developers the opportunity to use the same code framework used to create hit titles played by tens of millions of people around the world. Engineers at PopCap provide support as needed. PopCap provides a web framework to help developers quickly create compelling web versions, a vital tool to maximize the audience for any game. Additionally, PopCap puts games in development through our extensive Beta Program, which is a key resource for invaluable feedback and bug reports from our customers.
 - a. Does your company provide localization services?
We work with and manage localization partners to get the developer's game out to as many countries and in as many markets as possible. Typically, there are no extra localization fees for the developer.

5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
PopCap has long-standing relationships with every major distributor, and the strength of our brand as well as existing marketing commitments ensure our titles get good promotion. Additionally, PopCap takes care of promoting games to our customers via our site and our newsletter.
 - b. Does your company offer channels for OEM and other such licensing deals?
We are always evaluating licensing deals that will provide greater distribution, and what deals will be available will vary depending on interest in a title.
 - c. Is there a direct contact and/or Account Manager assigned to each account?
When publishing through PopCap a producer will work closely with the development team to offer prompt responses to any questions or problems the developer may have, and to make sure PopCap is communicating the information developers need.

6. Commission Structure
 - a. Commission breakdown: PopCap currently works with the developer to meet the developer's needs. We started as a small game development studio and know that each studio has different priorities. Some partners like up front payments, some guaranteed revenues, and others want to work off direct revenue share!
 - b. How does your company pay? We will try to arrange whatever works best for the developer.
 - c. Is a Detailed Accounting Report included? Yes
 - d. Is real-time online reporting offered? Is there a fee? Not currently, but this is something we plan to offer developers in the future.
 - e. Is the accounting department open and available for direct contact? Yes

7. Company Contact Information:
<http://www.popcap.com>
<http://developer.popcap.com>

PopCap Games Inc.
Sukhbir Sidhu
Senior Producer
sukhbir@popcap.com
206-256-4250

10. Pogo

1. Please give an overview of what your company offers game developers.
Pogo.com, EA's online casual gaming portal, is a leading destination for online and downloadable games. Pogo operates three distinct businesses: Pogo Free Games, an advertising and sponsorship supported web games offering; Club Pogo, a subscription-based web games offering; and Pogo To Go, a downloadable games offering. Pogo consistently leads the market in stickiness and total time spent playing games online. Pogo is actively marketed in the North American territory, but has not yet expanded into global territories
2. Publishing – If applicable, define your offering.
The Pogo offering is totally focused on casual games – predominantly in the puzzle, word, card, board, and casino genres. Pogo typically engages developers to help implement games that are conceived and designed by Pogo's production staff, but will publish games based on developers' exceptional original concepts for both web and download games. All Pogo-published web games are exclusive to Pogo.com, but Pogo-published downloadable games are available on multiple game portals including AOL and Yahoo!. Pogo web games use Java 1.1 for client-side applets. Pogo downloadable games can be implemented in any reasonable technology, and are only offered for the Windows platform.
3. Distribution – If applicable, define your offering.
Pogo To Go focuses on the distribution of a highly selective third-party downloadable offering tailored to a mass market audience. Pogo seeks to find the highest converting casual games in the market to support our offering. We deal directly with developers, publishers and licensing agents. We distribute games for Windows only, and focus on family-friendly, casual game offerings. We do not distribute third-party web games except as demos for downloadable games.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
Pogo offers a mature suite of APIs for accessing many of its back-end community services. Pogo provides DRM and commerce services for all published and distributed downloadable games. Through EA, Pogo has access to network of localization services.
5. Marketing
All products receive a robust on-site launch marketing package, including heavy ad rotation and home page listing. Further promotion is based solely on results. A contact is assigned for all developers.
6. Commission Structure
Pogo typically offers monthly reporting and payment supported by detailed reports. There is no real-time reporting available. Your account manager/contact will serve as the interface to accounting.
7. Company Contact Information:
www.pogo.com
www.clubpogo.com
Beatrice Spaine
Director of Marketing and Sales Operations
Bspaine@ea.com

11. Real Arcade

1. Please give an overview of what your company offers game developers.
RealArcade is the leading global publisher of casual downloadable games. RealArcade combined with GameHouse Studios offers developers a turn key solution to distribute and publish their casual games to a global audience to the PC.
RealArcade is the leading global distribution and publishing service for downloadable casual games. Downloadable games are the fastest growing game category and is expected to be a Billion dollar market opportunity by 2008 per IDC. RealArcade provides play-before-you-buy access to over 250 of the best downloadable games on the Internet and over 80 free online games, coupled with unprecedented ease of use, discovery, management and enjoyment of these games. RealArcade is targeted at the rapidly-growing adult gaming segment ranging from 30-60 years of age.
2. Publishing – If applicable, define your offering.
RealArcade reviews game and concept submissions directly from our game developer web site located at: <http://gamedevs.realarcade.com>
 - a. What types of games does your company seek/accept? What types do you avoid?
RealArcade is focused on the casual games market but we always consider and like to view all types of downloadable games. There is no set definition or type of games that we tend to stay away from. We gladly review all developer's concepts, prototypes regardless of type.
 - b. Do you offer channels for platforms other than PC?
PC, Mobile, Retail, and other future digital platforms.
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
Casual games is the focus of our service. RealArcade is focused on the casual games market but we always consider and like to view all types of games.
 - b. Do you offer channels for game platforms other than PC?
PC, Mobile, Retail and future digital platforms.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
RealArcade has global reach with over 20% of our sales generated outside of North America. We have regional web sites in 8 languages and fully localized RealArcade game services in Japan, Germany, France, and Spain. We plan to continually build out our European and Asian service offers.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
 - a. Does your company provide localization services?
Yes. Fees are variable based on many factors.
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
 - b. Does your company offer channels for OEM and other such licensing deals?
 - c. Is there a direct contact and/or Account Manager assigned to each account?
Yes.
6. Commission Structure
 - a. Commission breakdown: We do not disclose this publicly.
 - b. How does your company pay? Monthly.
 - c. Is a Detailed Accounting Report included? Yes.
 - d. Is real-time online reporting offered? Is there a fee? Not at this time.

- e. Is the accounting department open and available for direct contact?
Questions regarding invoices are directed to developer's RealArcade producer.

8. Company Contact Information

RealArcade

Developer partner site: <http://gamedevs.realarcade.com>

Developer contact email: RA-BizDev@real.com

12. Shockwave

1. Please give an overview of what your company offers game developers.
AtomShockwave offers numerous publishing and distribution opportunities for both web-based and online downloadable games.
For online games, our website <http://www.shockwave.com> is one of the most trafficked in the world. Shockwave.com is also very attractive to advertisers and sponsors. Advertising and sponsor revenue associated with game titles are shared with games' developers.
Shockwave.com is also one of the major industry channels for distribution of online downloadable games. Our GameBlast.com offers premium game content on a subscription basis. GameBlast targets an audience who responds to a different value proposition from that offered by the a-la-carte purchase of downloadable games.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
We publish nearly all major game genres. Our mix of genres varies by channel (i.e., web-based, downloadable or subscription) as each channel has a different audience. We avoid content that would likely receive a T-Teen or M-Mature rating.
 - b. Do you offer channels for platforms other than PC?
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
Again, we distribute nearly all major game genres. We avoid content that would likely receive a T-Teen or M-Mature rating.
 - b. Do you offer channels for game platforms other than PC?
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
Our reach is world-wide, published in English. Through our partner AtomShockwave KK we can reach the Japanese market.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
We maintain our own online store and digital rights management system. We also provide royalty-reporting statements.
 - a. Does your company provide localization services?
AtomShockwave can provide Japanese localization services through our partner AtomShockwave KK. Localization services are usually exchanged for a period of local-language exclusivity in the targeted country. We are receptive to other business arrangements.
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
Performing downloadable game titles are included in our email newsletter.
 - b. Does your company offer channels for OEM and other such licensing deals?
Although not a major part of the business, AtomShockwave does occasionally enter OEM and other licensing deals.

- c. Is there a direct contact and/or Account Manager assigned to each account?
Each developer is assigned to a game producer who is the point-person for all communications.
6. Commission Structure
 - a. Commission breakdown: Commissions are usually a revenue sharing arrangement and vary from license to license.
 - b. How does your company pay? Quarterly by Check. Wire Transfers can be arranged for overseas developers.
 - c. Is a Detailed Accounting Report included? Yes.
 - d. Is real-time online reporting offered? Real-time reporting is not currently offered.
 - e. Is the accounting department open and available for direct contact? AtomShockwave's game producers are the first line of communication, but they can put a developer in direct contact with accounting to expedite questions or issues.
 7. Company Contact Information:
<http://www.shockwave.com>
<http://www.gameblast.com>
<http://www.atomshockwave.com> (corporate site)

Peter Glover
Vice President, Games
pglover@atomshockwave.com
415-503-2519

13. Trymedia

1. Please give an overview of what your company offers game developers.
Trymedia is the world's largest **distributor** of downloadable games, powering the digital distribution of nearly 1000 games across hundreds of portal sites and P2P networks in 35 countries, and in 7 languages and currencies. Trymedia provides three services under its ActiveMARK brand: DRM (Digital Rights Management), eCommerce (including hosting and real-time reporting) and Full-Service distribution. Developers with completed titles may protect, distribute and sell their titles using our extensive suite of tools and online reporting systems designed to simplify the process of self-distribution. In addition to its hundreds of direct distribution partners, Trymedia provides DRM and other infrastructure to Yahoo, Pogo, AOL Games and IGN/Gamespy.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
 - b. Do you offer channels for platforms other than PC?
Trymedia is not a publisher in the traditional sense of the word. The company neither takes intellectual property rights nor provides funding of any kind to content creators. Completed titles from mainline and independent developers are welcome in our distribution network, without genre limitation. Trymedia uniquely distributes a large volume of core/hardcore titles from major label publishers, but does not support any platforms other than the PC.
3. Distribution – If applicable, define your offering. See the above.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
Trymedia has the industry's most extensive real-time reporting infrastructure: the ActiveMARK ORS. The ORS enables partners to view their sales by channel and time and generate charts and ratios on the fly. Trymedia also offers a very wide range of

ancillary services, including hosting, territory management (the ability to set different prices per country), CD-based protection, in-store value cards, developer-controlled packaging (wrapping), custom marketing programs, and custom development services through our PS organization.

- a. Does your company provide localization services? No.

5. Marketing

- a. What promotional services are provided or offered at no additional cost?
- b. Does your company offer channels for OEM and other such licensing deals?
- c. Is there a direct contact and/or Account Manager assigned to each account?

Trymedia offers a wide range of custom and off-the-shelf marketing options to our partners. From broad and controlled distribution, to country-specific programs, Trymedia offers an unparalleled level of individualized service to our customers. Some program examples include: volume/OEM licensing, search engine positioning, search advertising, custom site development/hosting, viral programs, direct mail, in-store and value card programs and a wide range of custom marketing services. Marketing programs are priced on a per program basis.

6. Commission Structure

- a. Commission breakdown
- b. How does your company pay?
- c. Is a Detailed Accounting Report included?
- d. Is real-time online reporting offered? Is there a fee?
- e. Is the accounting department open and available for direct contact?

In addition to real-time reporting (including final payment calculations), Trymedia offers quarterly consolidated reporting and wire-transfer or paper check payment options. Online reporting is included in most of our programs that are tailored specifically to the needs of our partners.

7. Company Contact Information:

www.trymedia.com
www.trygames.com (catalogue site)

For further information, or to contact someone at Trymedia:
http://www.trymedia.com/corporate/contact_us.shtml
+1 415 255 3060

14. WildTangent

1. Please give an overview of what your company offers game developers.

WildTangent, headquartered in Redmond, Washington is the global online game leader. WildTangent is responsible for pioneering this market. Our underlying technology allows us to create games that continue to be unsurpassed in visual game quality.

WildTangent works with the best game developers around the world to publish and distribute immersive, online games with advanced features, and robust game play, all at a fraction of the size of the typical console title. WildTangent is a major player in online PC games and branded games.

2. Publishing: If applicable, define your offering.

WildTangent has two business models:

- 1) Retail games sold through our distribution channels.
- 2) Custom published games (adver-games) sold to Fortune 1000 clients.
 - a. What types of games does your company seek/accept? What types do you avoid?

We focus on Casual games in these genres: Action, Arcade, Puzzle, Sports, and Strategy. We are constantly looking for new and innovative ideas. We do not accept Mature or Adult content

- b. Do you offer channels for platforms other than PC? **No, we do not.**
3. Distribution: If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid
 - b. Do you offer channels for game platforms other than PC?
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.

WildTangent distributes products through multiple channels:

 - 1) OEM Partnerships: Products are pre-loaded and/or pre-installed on manufacturer's hardware. WildTangent typically hosts games, processes the electronic commerce, and provides the DRM in this scenario.
 - 2) Portal Partnerships: Partners host our games on their site; provide DRM and e-commerce.
 - 3) WildTangents Game Portal Site: WildGames.com provides DRM, e-commerce, and support.
 - 4) Other: Any partner or affiliate that hosts a games section on their website, and is committed to the casual online games market. This partner or affiliate does not have the infrastructure in place to provide DRM, hosting and electronic commerce. In this scenario, we operate the infrastructure, but provide art assets/ game descriptions to the partner to place on their website.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):

DRM, e-commerce, and reporting are provided by WildTangent.

 - a. Does your company provide localization services?

Yes. WildTangent has provided localized games at the request of a distribution partner and where it makes economic sense - the terms are determined on a case by case basis.
5. Marketing

WildTangent has a 3-pronged approach to marketing products:

 1. WildTangent builds awareness through integrated marketing campaigns. The components consist of: email, direct mail, website, GameChannel notifications, game installation on OEM hardware, keyword buys with major advertising portals, and more. These components work to build a cohesive, successful campaign. WildTangents target audience is 56% female and 44% male consumers (50% age 35 and over). We retain players through Wildgames.com and several co-branded websites. Online communities and contests have also been effective means for building brand awareness.
 - a. What promotional services are provided or offered at no additional cost? **See above.**
 - b. Does your company offer channels for OEM and other such licensing deals? **See above.**
 - c. Is there a direct contact and/or Account Manager assigned to each account? **Yes, WildTangent has the internal resources to support sales, new market alliances, and provide each account with dedicated account managers.**
6. Commission Structure

Term is usually one year in length, with an automatic renewal clause
Payment terms are based on revenue share between both companies
Marketing commitments and reporting requirements are defined up front

 - a. Commission breakdown: **Typically follows industry standards.**
 - b. How does your company pay? **Quarterly.**
 - c. Is a Detailed Accounting Report included? **Yes.**
 - d. Is real-time online reporting offered? **Not currently, but available in 05.**
 - e. Is the accounting department open and available for direct contact?

The Account Manager(s) are responsible for ensuring that all issues are resolved. Accounting personnel are available on a case by case basis and only in instances where the Account Manager cannot be of assistance.

7. Company Contact Information:
Allison Weatherford
Director of Alliances
(425) 497-4533
Allison.Weatherford@wildtangent.com

15. Yahoo

1. Please give an overview of what your company offers game developers.
Yahoo! has a turn-key e-commerce DRM solution to allow companies to sell and distribute their games to Yahoo! Yahoo! also provides an online venue for game development companies to promote and advertise new and key games.
Yahoo! Games is the leading online games site on the Internet. Yahoo! works with outside developer partners to provide the best games content to its users, in both the US and globally.
2. Publishing – If applicable, define your offering.
To be considered, developers send detailed information on the game and partnership concept to games-submissions@yahoo-inc.com.
 - a. What types of games does your company seek/accept? What types do you avoid?
Yahoo! Games is interested in reviewing the best PC casual and video games for digital distribution through its Web site. Though we are currently reviewing games from the most popular genres (e.g., puzzle, word, arcade, board), we are interested in all types of games and genres so we can offer our users “the next big thing.” Yahoo! is accessible to everyone so this is in mind when reviewing content for Yahoo! Games. However, decisions on content are handled on a case-by-case basis.
 - b. Do you offer channels for platforms other than PC?
Yahoo! Games is interested in reviewing games for all platforms, including PC, mobile, and living room devices.
3. Distribution – If applicable, define your offering.
To be considered, developers send detailed information on the game and partnership concept to games-submissions@yahoo-inc.com.
 - a. What types of games does your company seek/accept? What types do you avoid?
Yahoo! Games is interested in reviewing for distribution both casual and hardcore games. We are also interested in reviewing games for both PC, mobile, and living room environments. Yahoo! is accessible to everyone so this is in mind when reviewing content for Yahoo! Games. However, decisions on content are handled on a case-by-case basis.
 - b. Do you offer channels for game platforms other than PC? [See above](#)
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries.
Yahoo! Games is the leading global Internet brand and Web site. Currently, Yahoo! Games distributes games through various regions within Europe and Asia. In 2005, we plan to expand globally to all major markets.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
Yahoo! Games provides reporting per agreed upon within its standard distribution agreement, including volume.
 - a. Does your company provide localization services? **No.**
5. Marketing

- a. What promotional services are provided or offered at no additional cost?
Yahoo! Games promotes additional marketing and promotions for the most popular games distributed and played through its Web site. In addition, Yahoo! considers co-marketing, events and other joint promotional relationships.
 - b. Does your company offer channels for OEM and other such licensing deals?
Yahoo! may offer channels for OEM and other licensing deals in the future.
 - c. Is there a direct contact and/or Account Manager assigned to each account? Yes.
6. Commission Structure
- a. Commission breakdown
 - b. How does your company pay?
 - c. Is a Detailed Accounting Report included?
 - d. Is real-time online reporting offered? Is there a fee?
 - e. Is the accounting department open and available for direct contact?
All the above subject to negotiation.
7. Company Contact Information:
Please email all requests and submissions to:
Games-submissions@yahoo-inc.com.

16. Zango

1. Please give an overview of what your company offers game developers.
Zango offers a unique direct to consumer sales and marketing engine that allows the independent developer an opportunity to retain ownership of their IP with large revenue upsides. Within the Zango network and through affiliates Zango can promote games to tens of millions of consumers. Currently the majority of our ability to generate revenue is in North America and Western Europe. We are looking at expansion into other markets.
As the major publishers are relying more and more on property license and existing or new franchises, they are reducing the number of games being funded with independent shops. This impacts innovation in the industry and limits access to an elite few for funding. Imagine anyone other than Will Wright being able to sell EA on a dollhouse game – it wouldn't happen. But then EA would have missed out on the biggest selling game series of all time. Zango is the outlet for independent, creative and innovative developers to bring their games to light and make money from those successes. We hope that we can play a role for the gaming industry that Sundance or Project Green Light does for the film industry.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
We are interested in working with any title. Zango's mission is to try to offer as broad a library of games as possible to the audience. Ideally, someone who visited Zango Games would be certain to find something of their interest. Our goal is to make casual and core gamers equally happy. Zango is a general audience brand and we have a responsibility to our users. While we wish to embrace a broad spectrum of game types, we will avoid any material that is in poor taste or simply offensive.
 - b. Do you offer channels for platforms other than PC? Currently we don't—we are exploring other options.
3. Distribution – If applicable, define your offering.
Developers interested in publishing with Zango are free to contact us directly. We would then arrange a licensing agreement to distribute games over our network. There is a requirement for a simple addition of code to the game's executable making Zango a required component. Once that is complete and tested, we then promote to our audience.
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):

We offer a set of reporting tools that allow our partners to monitor the install activity for their product.

- a. Does your company provide localization services? **No.**
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
Zango uses a combination of ad buys, affiliate and partner marketing to promote games. We also have www.zangogames.com, which we continue to develop as a destination portal.
 - b. Does your company offer channels for OEM and other such licensing deals?
Not currently, but possibly in the future.
 - c. Is there a direct contact and/or Account Manager assigned to each account?
We have a team of technical, marketing and business development resources at the partner's disposal. Every developer will have a single point of contact to help them with their account.
6. Commission Structure
 - a. Commission breakdown: **We pay commission on a per-install basis.**
 - b. How does your company pay? **Monthly by check/wire transfer, depending on the amount.**
 - c. Is a Detailed Accounting Report included? **Yes.**
 - d. Is real-time online reporting offered? Is there a fee? **Yes – no fee.**
 - e. Is the accounting department open and available for direct contact? **Yes.**
7. Company Contact Information:
www.zango.com
Zango Games
Charles Balas
Senior Producer, charlesb@zango.com
425.279.1248

D. Online Tournament Providers

1. Arkadium

1. Please give an overview of what your company offers game developers.
Arkadium offers IGDs the ability to generate additional revenue from their existing game content. We do this in two ways, 1) we offer an additional distribution platform to sell their downloadable game, and 2) we tournament enable the game so that the IGD can maximize the revenue from their game. When we tournament enable game content, we split the tournament revenues with the IGD.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
Arkadium has produced/developed over 50 of our own game titles, however we have not played the publisher role yet. We welcome all types of games, however our tournament platform is strictly intended for games of skill only.
 - b. Do you offer channels for platforms other than PC?
In addition to the PC games we produce, Arkadium offers games on the iTV platform. Our games are currently available in over 1,000,000 hotel rooms worldwide. We are actively seeking IGD's looking to expand into this market.
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?

Arkadium seeks “casual games” that require a very quick learning curve, and take from 2-5 minutes to play. Outstanding graphics and top quality sounds are a must. Games over 15 MB and games that require more than 30 minutes to play are not for us.

- b. Do you offer channels for game platforms other than PC?
We offer games for the iTV platform, as well as a wireless offering coming out in Q3 2005.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries. [Worldwide](#).
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
We offer our partners/affiliates a secure reporting tool that is available 24/7/365. This tool displays up to the minute revenue statistics.
- a. Does your company provide localization services? [Not yet](#).
5. Marketing
- a. What promotional services are provided or offered at no additional cost?
[Bi-monthly email campaigns, on site advertising as well as the ability to advertise on partner websites.](#)
 - b. Does your company offer channels for OEM and other such licensing deals?
[Our first downloadable game “Solitaire Poker Pack” will be available in Retail stores across the country. We currently do not offer these services, but can always point IGDs in the right direction.](#)
 - c. Is there a direct contact and/or Account Manager assigned to each account?
[Every partner gets a full time account manager. During the Holidays you will get a nice card and if your lucky, a box of home-made cookies.](#)
6. Commission Structure
- a. Commission breakdown [Depends on the game](#).
 - b. How does your company pay? [Monthly](#).
 - c. Is a Detailed Accounting Report included? [Yes](#)
 - d. Is real-time online reporting offered? Is there a fee? [Available and free of charge](#).
 - e. Is the accounting department open and available for direct contact? [Yes](#).
7. Company Contact Information:
[Arkadium, Inc](#)
www.arkadium.com (business to business)
www.gamedek.com (business to consumer)

[Kenny Rosenblatt](#)
[President, CEO](#)
[212-842-1185](#)
Kenny@arkadium.com

2. WorldWinner

1. Please give an overview of what your company offers game developers.
Worldwinner works with independent game development shops by providing an online tournament platform for their games. For instance, worldwinner provides tournaments for its player community in fresh games' Cubis and Word Mojo.
2. Publishing – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
Worldwinner can provide tournaments in any online games that are skill based and that can be played in 3-5 minutes. We stay away from any games that are based on luck.
 - c. Do you offer channels for platforms other than PC?
We are exploring a wireless platform partner, but do not currently have one.
3. Distribution – If applicable, define your offering.
 - a. What types of games does your company seek/accept? What types do you avoid?
Primarily casual, but we are testing blackhawk striker 2 from wild tangent. Again, anything luck based. Also, we have not provided tournaments in games that tend to last longer than 5 minutes.
 - b. Do you offer channels for game platforms other than PC? Answered above.
 - c. Online Distribution Channels - Current reach/demographics and plans to move into additional countries. Available worldwide
4. Other tools and resources (i.e. backend tools, ESD, reporting, etc):
Full reporting on all tournament and game data. We have a back-end database that compiles all cash transactions, game plays, and movements within a specific game.
 - d. Does your company provide localization services? No.
5. Marketing
 - a. What promotional services are provided or offered at no additional cost?
Promotion on top game sites like yahoo! Games, pogo.com, shockwave, and lycos gamesville.
 - a. Does your company offer channels for OEM and other such licensing deals? No.
 - b. Is there a direct contact and/or Account Manager assigned to each account? Yes.
6. Commission Structure
 - a. Commission breakdown. Varies from deal to deal.
 - b. How does your company pay? Paper check. Monthly.
 - c. Is a Detailed Accounting Report included? Case-by-case.
 - d. Is real-time online reporting offered? Is there a fee? Yes. No.
 - e. Is the accounting department open and available for direct contact? Yes.
7. Company Contact Information
Cooper Moo
Director of Channel Development
cmoo@worldwinner.com
978-793-1224
www.worldwinner.com

CONTRIBUTOR BACKGROUND

IGDA Online Games SIG Steering Committee

IGDA Online Games SIG and Casual Games SIG Chair

Brian Robbins

With more than 100 Flash and Shockwave game titles under his belt, Robbins is a thought-leader in the web-based gaming industry. An active participant in the International Game Developers Association (IGDA), he is frequently asked to present at industry conferences, and has provided his peers with his development insight at numerous events throughout the past several years, as well as through his regular contribution to the IGDA Online Games SIG of which he is currently the chair.

Often recognized for his ability to develop sustainable business models around bleeding-edge technologies, Robbins is an evangelist for the adoption of innovative media.

Prior to his role at Fuel Industries, Robbins held positions at US game development shops including Worlds Apart Productions and CleverMedia. He currently resides in Ottawa, Canada. He can be reached at brobbins@fuelindustries.com.

IGDA Online Games SIG Chairperson Emeritus

Alex Jarett

Alex Jarett is Chairman Emeritus of the International Game Developers Association (IGDA) and is the founder and Chairman of the IGDA's Online Games SIG. He is the President and founder of the Technology Executives Club (<http://www.technologyexecutivesclub.com/>), the Midwest's largest professional education and networking association for technology and ebusiness executives. Alex also formed the Broadband Entertainment Group, Ltd., a business development company specializing in online and digital entertainment. The first project for the group is the development of an online game developer for the mass-market audience. Prior, Alex was Vice President and co-founder of Real Sports, LLC, where he successfully developed relationships with major publishers such as GT Interactive, ABC Sports Interactive/Disney Interactive, Ubisoft, Hasbro, Infogrames and Microsoft, and major licensors such as IMS and Games Workshop. Alex has 22 years of business development and marketing management experience in the software and new technologies markets. He can be reached at: ajarett@technologyexecutivesclub.com or jarart@msn.com.

IGDA Online Games SIG Steering Committee Members

Greg Mills (White Paper Editor)

As Director of Premium Games, Greg develops strategy for subscription games across America Online's brands, and creates new sales and revenue opportunities for online and downloadable games. Greg's responsibilities include interacting with AOL's marketing team to develop game concepts, establishing financial models and working with partners to launch games on the AOL service. Greg Mills has ten-plus years of marketing and business experience in the gaming industry. Before America Online, Greg worked at WorldPlay Entertainment and The 3DO Company in various marketing and business development positions. Mills earned his Bachelor's degree from Pomona College and an MBA from Santa Clara University.

Steven DeBenedictis (White Paper Assistant Editor)

Steven DeBenedictis is the Marketing Director for new product concepts at Dassault Systems - SolidWorks Corporation. He is responsible for planning, developing and marketing consumer applications focused on 3D graphics functionality in the entertainment, creativity and productivity product categories. "Cosmic Blobs" is the primary offering from this business which is a revolutionary new 3D graphics and animation software program for kids. He has a comprehensive background in product management, marketing and business management with technology development and entertainment media companies

including Lycos, Akamai and 3Com. He has worked extensively in the Internet media, data networking and software development industries creating products and online services for electronic entertainment game play and distribution. Steve has a B.S. from Tufts University and earned his MBA from Bentley College. He can be reached at sdebenedictis@solidworks.com

Elonka Dunin

Elonka Dunin is General Manager of Online Community at Simutronics Corp. (<http://www.play.net>), where she has worked since 1990, doing a little bit of everything, from programming to design to management. Born in Los Angeles, Elonka studied Astronomy at UCLA, and then joined the United States Air Force. She is a world-traveler who speaks several languages, and has visited every continent, including Antarctica. An amateur cryptographer, she has also won considerable acclaim with the cracking of "uncrackable" codes. Elonka is a longtime member of the IGDA and has been attending the Game Developers Conference for more years than she can remember. She can be contacted at elonka@simutronics.com, or via AIM at screen name "elonka".

Jon Estanislao

Jon Estanislao is responsible for business development activities at Activision in the wireless, online/broadband, and interactive television gaming industries. Formerly, he was a strategy manager in the Communications, Media and Entertainment Industry practice of Accenture LLP. He specialized in the interactive entertainment industry and assisted clients, including console manufacturers and software publishers, with online strategies competitive analysis, market entry, financial analysis, and customer registration. Jon has also been a speaker at interactive entertainment industry events, including GDC. Jon has an MBA from the Anderson School at the University of California, Los Angeles (UCLA), a BS in Business Administration from Georgetown University, and a CPA in the State of California. He can be contacted at jestanislao@activision.com.

Daniel James

Daniel James is founder and CEO of Three Rings, a San Francisco developer and operator of massively multi-player online games for the mass-market casual audience. Three Rings' first games, *Puzzle Pirates*, combines accessible and fun puzzle games with the depth of a social persistent world. Prior to Three Rings Daniel consulted on game design, toiled for many years on *Middle-Earth Online*, and co-founded two profitable UK Internet start-ups, Avalon and Sense Internet. Contact him at psw@djames.org.

Jeferson Valadares

Jeferson Valadares is Creative Director and co-founder of Jynx Playware, a 12-person, 3-year-old game development company. He's also on the organizing committee of the Brazilian Workshop on Games and Digital Entertainment (W Jogos) and on the Technical Consultative Advisory Board of the eGame Design and Planning Graduation Course at the Universidade Anhembi Morumbi, Brazil. A B.S. and M Sc. Graduate, he does research on Artificial Intelligence applied to Computer Games. Amazingly, he STILL manages to come up with time for his favorite non-gaming related activity: reading.

Gordon Walton

Gordon Walton has been authoring games and managing game development since 1977. He currently serves as VP and Executive Producer for an unannounced product at Sony Online Entertainment. Prior to joining Sony Online Entertainment, Gordon was VP and Executive Producer of *The Sims Online* at Electronic Arts/Maxis, and prior to that with Electronic Arts at Origin Systems managing *Ultima Online*™. He also served as Senior VP of Kesmai Corporation where he oversaw the development of *Air Warrior*™ and Multiplayer *BattleTech*™ among other online games. Gordon has owned and managed two development companies and has been development manager for *Three-Sixty Pacific* and Konami of America, Inc. He has personally developed over thirty games and overseen the development of hundreds more. He has worked exclusively on massively multiplayer games since 1995.

John Welch

John Welch is a co-founder and the President and CEO of PlayFirst, the pioneering full-service publisher dedicated to bringing popular downloadable games to the mass market. One of the most visible figures in the popular games industry today, John is responsible for the strategic direction of the company. Prior to forming PlayFirst, John spent five years at AtomShockwave Corp. as the company's Vice President of Games and Product where he drove the product strategy and acquisitions for Shockwave.com. While at

AtomShockwave, John helped build Shockwave.com in to one of the Internet's top games portals and discovered some of the top independent game developers in the world. John has been on the International Game Developers Association (IGDA) Online Games group steering committee since its inception, and served as Chairman of the group from 2003-2004. Prior to Shockwave.com, John was at SEGA from 1998-1999 where he led the specification effort for the Sega Dreamcast Network. John launched his career as a systems integration consultant at Andersen Consulting, then co-founded his own firm which specialized in enterprise solutions. He holds a Bachelor's degree in Mathematics with Computer Science from MIT and a Master's Degree in Computer Science from the University of Massachusetts.

Market Overview

Gabe Zichermann (Section Editor)

Gabe directs Trymedia's worldwide strategic relations and marketing communications activities. His contributions to the digital distribution industry include such milestones as posting the first legitimate downloadable games to Peer-to-Peer Networks and completing extensive consumer research on game download habits and trends. Prior to joining Trymedia, Gabe held positions in the e-commerce field with companies such as Cisco Systems, Bay Networks/Nortel and Checkpoint Software. He was also Director of Marketing for the Game and Web divisions of CMP Media. Gabe is a frequent speaker and media resource on topics related to the digital distribution of entertainment content. He holds a BIS from Canada's University of Waterloo, and an MBA from Rollins College in Florida.

Hugh de Loayza, Pogo.com - Director - Web Games Content

Hugh is a seasoned industry veteran having spent the last ten years producing online games content for Pogo.com, EA.COM and SONY Online Entertainment. Hugh leads EA's downloadable "Pogo To Go" business development efforts as well as outlines content strategy for EA/Pogo's advertising supported businesses.

Peter Glover, Vice President of Games for Shockwave.com (AtomShockwave Corp.)

Peter has been part of Shockwave.com's Games Group since 2000, first running the company's internal development studio, and then later managing their games business as a whole. His previous work experience includes Accenture, LeapFrog Toys, Zenda Studio (formerly Apple Computer's Discovery Studio) and Freelance Multimedia and Design Consultancy.

Jay Moore, GarageGames - Evangelist

Jay joined the 'Garage' in 2002 and has directed the launch of IndieGamesCon, the online publishing of independent games under the GarageGames brand and succeeded in establishing Torque as the game engine platform of choice for independent game developers.

Matt Walsh

Matt works as an Interaction Designer for R/GA. Projects he has helped develop include NikeGridiron.com, NikeRunning.com, and NikeiD.com. He is also the internal Gaming Lead for R/GA and has been consulted on video gaming for client teams that include Target, Bank of America, SC Johnson, IBM, and Verizon. Other interests include the evolution of integrated marketing, branded games, and interactive entertainment as developed for the web, mobile/cellular devices, networked console gaming platforms, digital signage, and retail environments.

Business Models

Mark Warner (Section Editor)

Mark W. Warner is the founder, CEO and President of Nexus Entertainment. He has a Bachelors degree in Finance from California State University, an MBA from the University of Phoenix in Finance, and a certificate in Investor Relations from University of California at Irvine. He has over 16 years of financial, managerial, and strategic experience, 20 years of writing experience and 5 years of game design experience. He continues to work on developing Nexus Entertainment into a prominent development

house as they work on their RTS game and game engine, both currently called HardPoint™, and an online game called NexusRISING™. Mark is also the lead coordinator of the Orange County chapter of the IGDA and co-chairman of the IGDA Charity committee, and a contributor and editor for several of the other IGDA White Papers.

Kris Alexander

Kris Alexander has an accomplished record as a marketing and business professional in the high technology and media & entertainment industries. Kris is presently the Media and Entertainment Service Line Manager for Akamai Technologies, providing services to digitally deliver music, movies & video, games, sports and news for businesses such as Apple iTunes, Major League Baseball, XM Satellite, MTV, CNET, and Turbine. Prior to Akamai, Kris founded and operated an independent record label; was a senior service line manager at Internet pioneer, BBN/ Genuity; and provided consulting services to a number of high tech and media & entertainment businesses. He also serves on the advisory boards of the Themis Group, which provides marketing and community management of online games and entertainment, and the WarCry Network. Kris has spoken on the subjects of Digital Media & Entertainment, Next Generation Game Platforms, Digital Content Delivery, VoIP (Voice over IP), and IP Security at a number of industry conferences including Digital Hollywood, Streaming Media, iHollywood, NextGen Games, CeBit, and Internet World. He has contributed to multiple industry white papers regarding digital entertainment and online gaming.

Peter H Friedman

Peter H Friedman is the proprietor of a Certified Public Accounting firm that specializes in economic/financial and taxation consulting for businesses. He has been invited to, and attended, the annual U.S. Securities and Exchange Commission Government-Business Forums on Small Business Capital Formation since 1992. Mr. Friedman was interviewed for the magazine *Business 2.0* in regards to Internet multistate taxation and was an expert witness at the ECommerce Tax Advisory Commission public forums. He contributed to the Independent Game Developers Association 2003 and 2004 Online Game White Papers on legal, tax and financial issues of wireless gaming. He has frequently lectured in front of various State Bar and CPA Societies on multistate and international tax issues of electronic commerce and the Sarbanes-Oxley Act of 2002. He lectured in December 2002 on US multistate issues at the seminar entitled "Emerging Issues in Online Entertainment and Interactive Gaming Operations". He lectured at the Dragon*Con convention in Atlanta on taxation of online gaming. He will be lecturing at the 2004 GDC on compensation and employment tax issues. He is currently the Chairman of the Tax committee of the New Hampshire Society of CPA's. Mr. Friedman is licensed to practice in the States of New Hampshire and New York, and is registered with the Public Company Accounting Oversight Board. Peter can be contacted at peter@peterfriedmancpa.com or 603-358-6666

Cassandra Willard, Esq.

Cassandra is a partner at the law firm of Franklin & Willard where she focuses her practice on intellectual property and entertainment law. Before joining her firm, she worked in various aspects of the entertainment law industry, including Planet Hollywood's corporate legal department as well as representation of individual clients with a wide range of entertainment law needs. In addition to her practice, she is a dual course director, teaching both Business Law and Intellectual Property, at Full Sail Real World Education in the Entertainment Business Bachelor Degree Program. Her broad experience in education includes not only Full Sail but also various other colleges and universities in Florida. Cassandra graduated Magna Cum Laude with a B.S. in Business, focusing on Finance, Hospitality and Accounting, from the University of Central Florida. She then earned her J.D., with honors, from the University of Florida's College of Law with a focus in Intellectual Property. She can be contacted at cwillard@floridacounsel.net or cwillard@fullsail.com

Production and Design

Juan Gril (Section Co-Editor)

Juan has been involved in the casual games industry even before the casual games term was coined. As one of the first members of the Yahoo! Games team, Juan was the lead producer for the downloadable games area and community manager of multi player games. In the last year of his tenure at Yahoo!, Juan was the head of Yahoo! Games Studios, producing the first 8 mobile titles the company has released. Recently Juan has left Yahoo! to form his own studio: Joju. Joju will focus on the production of innovative casual games for PC, Mobile and consoles. Juan holds a Bachelor's in Electronic Media from the University of Illinois.

Margaret Wallace (Section Co-Editor)

Margaret Wallace is a Co-Founder and CEO of Skunk Studios, a San Francisco-based game development house, known for creating high-quality original games for the mass market. Long before the online & downloadable games explosion, Margaret was an early advocate of using the Internet as a means for reaching vast untapped gaming audiences. Prior to the establishment of Skunk Studios, she produced and designed games and other interactive content for Shockwave.com and for Mattel's Hot Wheels brand. Margaret also contributed to CD-ROM and online content for Mindscape Entertainment (then encompassing SSI Games Online & RedOrb Games) and at PF.Magic, creators of the "Virtual Petz" programs, "Dogz" and "Catz" (published today under Ubisoft Entertainment). She holds a B.S. with Distinction in Communication from Boston University and an M.A. in Communication/Cultural Studies from the University of Massachusetts/Amherst. As a recipient of the Congress-Bundestag Scholarship, Margaret attended World Learning in Brattleboro, VT and spent a year abroad in Germany, studying their language and culture. Because her academic interests dealt largely with the intersection of popular culture and emerging technologies, Margaret was drawn into the world of games, realizing the potential to reach large numbers of people worldwide. She can be contacted at Margaret@skunkstudios.com.

Bryan Bouwman

Bryan has been playing and developing games since the 70's on a variety of platforms including Apple II, Windows, DOS and PS/2. He worked at EdMark developing award winning educational titles such as Thinkin' Things and Sammy's Science House. He was one of the founders of Monolith productions where he worked on Blood, Claw, Shogo, Get Medieval, NOLF, Matrix Online and a variety of other titles. In 2002 he and two of the other founders left Monolith and created HipSoft to focus on the online casual games market. Among other duties Bryan designs and implements the networking capabilities of all HipSoft products.

Heather M. Chandler

Heather Maxwell Chandler, of Red Storm Entertainment, is a producer with almost ten years of game industry experience. Her most recent title, the Xbox version of Ghost Recon 2, was released in November 2004. Prior to working at Red Storm, she worked in various production roles at Activision, Electronic Arts, and New Line Cinema. She has worked on 30+ games in a variety of genres and platforms. She is the author of The Game Localization Handbook, and has also published several other articles on game development and production. She is currently writing a book on game production that will be published by Charles River media in 2005. She has a B.A. from Vanderbilt University and an M.A. from the USC School of Cinema-Television. For more information, visit www.mediasunshine.com.

Nicholas Fortugno

Nick is the senior game designer at gameLab, where he has worked on dozens of digital and non-digital games, most recently the downloadable game Diner Dash. Nick was inducted into role-playing life at the age of five, and has been an avid consumer and producer of role-playing, live-action, and game culture ever since. He founded and ran the Seasons of Darkness group, a 5 1/2 year live action project which was featured on Showtime and in the academic text Rules of Play, and has written for role-playing titles including Silver-Age Sentinels. As a member of the Playground design team, Nick (with Frank Lantz and Katie Salen) was a co-creator of the Big Urban Game, a large scale citywide game for the cities of St.

Paul and Minneapolis, played by thousands of residents as part of the Twin Cities Design Celebration in fall 2003. In his academic guise, Nick teaches Game Design and Interactive Narrative at Parsons School of Design, and holds an Adjunct Teaching position at Bronx Community College, where he teaches developmental and compositional English.

Jane Jensen

Jane Jensen was born Jane Elizabeth Smith in 1963 in Palmerton, Pennsylvania. She received a BA in Computer Science from Anderson University in Indiana and worked as a systems programmer for Hewlett-Packard. Her love of writing eventually led her into the computer gaming community where Jane established her reputation with Gabriel Knight. The Gabriel Knight PC games are supernatural mysteries done in an adventure game style and are some of the most story-intensive games ever developed. All three Gabriel Knight titles won industry awards. Jane's next goal was to publish a novel and in 1996 she published the first of her two novelizations of the Gabriel Knight games. In 1999, her first original novel, Millennium Rising, was published in hard cover by Del Rey and was also released as an audiobook and mass market paperback (retitled Judgment Day). Between 1999 and 2002, Jane focused on her fourth book, Dante's Equation, which will be released by Del Rey in the U.S. in July '03 and by Little Brown in the U.K. In 2002 she co-founded a company called Oberon Media, which is focused on developing, and publishing, games for the casual game market online. All of Jensen's fiction work incorporates her passions – history, the occult, philosophy and religion. She lives in Seattle with her husband, Robert Holmes, and her step-daughter, Raleigh.

Daniel Prigg

Dan is a Senior Producer for RealArcade, the worldwide digital distribution leader in the downloadable PC games market. By bringing together RealArcade, the leading downloadable games distribution platform and GameHouse, the leading developer and publisher of downloadable games, Real has established itself the leader in the casual games market. More than 300,000 games are downloaded daily and RealArcade software has been downloaded over 80 million times worldwide since its introduction in October 2001. Dan started in testing at Humongous Entertainment/Cavedog Entertainment, doing children's and frontline titles back in 1999. He moved to Real in 2000 as Client Test Manager for the new concept of RealArcade. Afterwards he was promoted to Producer in 2002 to manage 3rd party content. He can be reached at dprigg@real.com

James C. Smith

James C. Smith is a founding partner of Reflexive Entertainment and has been in the game industry for 9 years creating both retail PC games and downloadable games. Before that he was a software architect and programmer for many years. Although James continues to program, his main focus is now on game design and leading the development team on small downloadable games projects. James led the development teams that produced the highly successfully Ricochet (Rebound) series as well as the more recent title, Big Kahuna Reef. James is also involved in the development and management of the Reflexive Arcade which has a catalog of hundreds of downloadable games distributed through many affiliate web sites.

Jim Stern

Jim Stern is Vice President of Product Development at iWin, Inc. He has been in the game industry for over 10 years in a variety of roles including: Product Manager for 3DO, Senior Producer at WorldPlay Entertainment and AOL, President and Co-Founder of AreYouGame.com, and General Manager for University Games. His background ranges from producing online and downloadable games to developing an e-commerce site for classic board games and jigsaw puzzles. Jim earned a B.S. degree in Industrial Engineering from Stanford University and an M.B.A. from the Amos Tuck School of Business Administration at Dartmouth College.

Jessica Tams

Jessica Tams has been actively involved in the casual game development industry as well as CDROM PC and Xbox game development. As Director of Partner Development for Trymedia Systems, Jessica ensures all current and prospective partners have a smooth and successful program for digital distribution and retail PC CD/DVD content protection. Before joining Trymedia, Jessica was the producer responsible for PC download, Web Game and Xbox Live Arcade development at Oberon Media's Seattle Studio.

Jessica spent five years working as a Software Engineer in CDROM PC and Xbox console development on the shipped titles Dungeon Siege and Gabriel Knight III.

Technology Overview

Andy Phelps (Section Editor)

Andrew Phelps is an assistant professor at the Rochester Institute of Technology, in Rochester, NY. He is the founding faculty member of the game programming concentration within the department of information technology, and his work in games programming education has been featured in the New York Times, CNN.com, USA Today, National Public Radio, IEEE Computer, and several other articles and periodicals. He regularly publishes work exploring Web-based game engines at the Director Online User's Group (DOUG) and the Macromedia DevNet Center. He is at work on his first text with Prentice Hall, and maintains a web site at <http://andysgi.rit.edu> featuring his work as an educator, artist, programmer, and game addict. He teaches courses in multimedia programming, game engine development, 2D and 3D graphics, and information technology theory.

Online Publishers

Wade Tinney (Section Co-Editor)

Wade co-founded Large Animal Games <http://www.largeanimal.com> with partner Josh Welber in 2001. Since then, Large Animal has developed over 45 games for a variety of platforms, including the web, mobile devices, and PCs. They've created web-based promotional games for clients such as LEGO, MTV, Cartoon Network, and Mattel, and their original downloadable (PC and Mac) games are distributed through the leading Internet portals. Large Animal's AlphaQUEUE was a finalist in the 2004 Independent Games Festival (IGF), and RocketBowl was a 2005 IGF award winner. Wade is the editor of the IGDA Online Games Quarterly and has taught game design at Parsons School of Design and New York University.

Andie Clarke

Andie launched PlanetSchnoogie.com December 2000 to drive the release of Snails Game for PocketPC. Since then she has advocated for Independent Game Developers in the Mobile Device space to include partnering with PocketMatrix as Contributing Editor. Andie continues to partner with like companies that push further recognition and growth within the Independent Game Development community across all Platforms. With over ten years experience with technical recruiting, business development and marketing, Andie founded e-starbrokers.com, a technical recruiting company based in Seattle, Washington in 1999. The recruiting services piece merged under the PlanetSchnoogie.com Umbrella early 2004 as P.S. Recruiting Services. Whatevergames.com an online channel to Try and Buy the latest in PC and Mobile Device Games, was also launched early 2004. To reach Andie direct – andie@devastation3.com 541-549-8468 <http://planetschnoogie.com>

Skill-based Gaming

Justin Beckett (Section Co-Editor)

Justin is an Internet entrepreneur who has focused on the convergent media entertainment sector since 1999. He is the founder and CEO of Fluid Audio Networks, producers of www.AmericanIdolUnderground.com, the Internet spin-off of TV's "American Idol". He is also the founder and former CEO of SkillJam Technologies Corporation, the Internet's leading provider of pay-to-play gaming solutions. Mr. Beckett is a graduate of Duke University.

Peter Blacklow (Section Co-Editor)

As vice president and chief marketing officer of WorldWinner, Peter is responsible for enhancing the consumer experience by leading all marketing efforts, including branding, direct response and player services. Prior to joining WorldWinner, Peter served as senior vice president of marketing at Monster, the largest global careers website, where he was responsible for advertising, promotions, public relations and

business-to-business direct marketing. Prior to that, he spent five years at Converse, Inc., where he became the director of marketing for five performance business units. Peter has received numerous awards and distinctions, including being named one of the top "Marketers of the Year" by Promo magazine. In addition, he serves as a board member of Ad Club of Boston, the Boston chapter of the National Sports Marketing Network (NSMN), New England Citybridge and Concord Academy. Peter is a graduate of Harvard University.

Steve Meretzky

Steve Meretzky is WorldWinner's Principal Game Designer and one of a few elite long-term veterans of the entertainment software industry. He started with the legendary game company Infocom in the early '80s, creating such classics as Planetfall (1983), Zork Zero (1988), Leather Goddesses of Phobos (1986), and The Hitchhiker's Guide to the Galaxy (in collaboration with Douglas Adams in 1984). Hitchhiker's Guide was only the third game ever to be certified "platinum" by the Software Publishers Association. Steve has written games for numerous companies, such as his Spellcasting 101 series for Legend Entertainment, about the adventures of a magician-in-training at Sorcerer University. He was a co-founder of Boffo Games, the developer of such highly-lauded games as Hodj 'n' Podj (1995) and The Space Bar (1997).

Steve has won numerous awards, and in 1999 was named one of the industry's 25 "Game Gods" by PC Gamer magazine. The 20th anniversary edition of his classic game The Hitchhiker's Guide to the Galaxy received a British Academy of Film and Television Arts (BAFTA) Interactive Award in 2005. Steve was a charter member of the Computer Game Developers Association, and served two years on the organization's board of directors. He is also a founder and organizer of Post Mortem, the monthly gathering of Boston-area game developers.

Steve holds a Bachelor of Science degree from the Massachusetts Institute of Technology (MIT).

Allison Rynak

Allison is the Director of Public Relations and Communications for WorldWinner, responsible for building brand awareness of WorldWinner through media relations, analyst relations, speaking engagements and on- and offline promotions. Prior to joining WorldWinner, Allison was a vice president at Weber Shandwick Worldwide, one of the world's leading PR firms, where she worked with technology, consumer technology and consumer brands for more than a decade. While at Weber, Allison led media campaigns for WorldWinner, in addition to global brands including Monster and Avid Technology. Allison holds a bachelor's degree in Communications from Tulane University.

Case Studies

Brent Lowrie (Section Editor)

With over fifteen years in the graphic arts, animation, and online game industries, Brent is the driving force leading the development of award-winning projects like Wonderville.ca at Rare Method, a leading strategic interactive marketing firm in Calgary, Alberta, Canada. As Games and Animation Group leader, Brent fills many roles; from art direction, game design, copywriting, character design and animation to project management and business development. Brent and his team at Rare Method have been successfully applying lessons learned in the entertainment and marketing industries to the development of online games and interactive education for over four years. As a former assistant animator at Walt Disney Animation Canada, Brent brings a strong background in story-based entertainment to Rare Method's game development and animation team. During Brent's three and a half years with Disney, he contributed to many popular animated feature-length and television productions including Peter Pan: Return to Neverland. Contact Brent at brent.lowrie@raremethod.com and check out their work at <http://games.raremethod.com>.

Nicole Lazzaro

Nicole is the Founder and President of XEODesign(R), Inc. She has over fifteen years of expertise in Player Experience Research and Design for mass-market entertainment and consumer creativity products, with clients including Sony, LeapFrog, Mattel, The Learning Company, Xfire, Broderbund, Roxio, Ubisoft, GDC, Sega, Monolith, and Maxis. To learn more about XEODesign's ground breaking

research on emotion in games including Hard Fun, Easy Fun, Altered States, and The People Factor please visit: www.xeodesign.com/whyweplaygames.

Scott A. MacMillan

Scott MacMillan is responsible for the licensing of Nelvana's animated shows to interactive and wireless publishers and developers. He is also in charge of internal production of PC, downloadable, and online games based on those shows and has a half-dozen producer credits to his name. Educated in the diverse disciplines of Graphic Design, Interactive Media, Animation, and Business at Sheridan College, St. Lawrence College, and the University of Toronto, Scott has been with Nelvana (www.nelvana.com) since 1998 contributing to several award-winning animated TV shows and games. He is always on the lookout for innovative ways to bridge traditional to interactive media and can be reached at scott.macmillan@corusent.com.

Additional White Paper Editors

Kayvaan Ghassemieh

Kayvaan is a product management and marketing MBA summer intern with PlayFirst. He is currently pursuing an MBA at the University of Texas at Austin, McCombs School of Business with a focus on technology marketing. Before entering the MBA program, Kayvaan spent six years as an internet software engineer and technical manager helping to grow pioneering internet start-up, Embark.com. Kayvaan has a strong interest in commercializing internet technologies and managing and marketing innovative internet software applications. Kayvaan can be reached at kayvaan@hotmail.com.

Kirstin Ohm

Kirstin is currently the acting head of marketing at PlayFirst while Heidi Perry is on maternity leave. Kirstin runs an independent consulting practice where her client list ranges from large ones (Lockheed Martin, FBI, CIA, Ford, GM, People Magazine, etc.) medium ones (not-as-big companies), and small ones (single-shingle information gurus). Before starting her own practice, Kirstin worked at Gap Inc., corporate communications & global affairs, and later was responsible for business localization in Europe, Asia and Canada. Prior to that she lived in Japan and worked for the Ministry of Education there. Kirstin has a BA from the University of Oregon. She is interested in businesses that are technologically and socially innovative, that cross borders and connect the world of today with the generation of tomorrow. You can reach Kirstin at Kirstin_ohm@yahoo.com.

CLOSING

We thank you once again for your interest in the 2005 Casual Games White Paper. This paper is the result of the efforts of numerous volunteers, and it is only with their continued support that we can provide projects like this to the community. If you would like to be involved next year on this white paper or our other white papers on the gaming industry, please go to our website at <http://www.igda.org/SIGs> and let us know how you can help. Thank you!

VERSION HISTORY

7/16/2005 – Initial Release

7/25/2005 – Corrected contributors to Business Models Section

7/31/2005 – Corrected Footer/Header