

# Virtual Vegas

A Revolutionary Online Gambling, Gaming  
and Shopping Experience

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# Introduction

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## ***Executive Summary***

Increasing access to high-speed internet has ignited an interactive online revolution. Industry analysts at last years Electronic Entertainment Expo indicated that the future of electronic entertainment will be dominated by multiplayer online games. Research shows 43% of gamers play an online game for at least an hour each week (the most popular being card games), and that recently the average age of users has risen dramatically from 18 to 29.<sup>12</sup> The electronic gaming industry is struggling to develop mature content to reach its aging audience. Adults have traditionally been drawn to other forms of entertainment, such as gambling and betting. Hence, brick and mortar casinos have consistently dominated the adult audience. Our team of researchers at the California Institute of Technology has developed a new multiplayer game to leverage the success of both these existing industries and to create a new retail venue.

Foreign based online casinos have attempted to merge the two industries by providing convenient gambling software to potential gamblers. While low overheads make these ventures lucrative, they fall short of capturing either the gaming industry or the live Vegas audience. The gaming industry has recently developed a series of critical new technologies, which make it possible to create an immersive virtual world. Standard graphics hardware accelerators enable lifelike three-dimensional scenes, while multiplayer technology has evolved to support interactive virtual communities. Increased bandwidth, due to the explosion of broadband internet, enables real-time voice over IP. We plan to apply these new technologies to the gambling and retail industries.

We will create a virtual version of the Vegas Strip by contracting with a few major casinos and retailers. Extra space on the strip will be filled with customized casinos, buildings, theme parks, and shops. After demonstrating the success of the product, we will obtain contractual agreements with the remaining casinos to be added to the strip (for long term plans, see “Future Work” section). Immersed in the Las Vegas ambiance, users will be

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<sup>1</sup> Reuters. “Survey: Video gamers get older, get online.” CNN.com May 13, 2004.

<sup>2</sup> *ibid*

able to explore the strip with customized virtual characters. Through their character avatars (virtual representations), users will be able to see, talk, and interact with each other. Players will be able to shop and play all the games found conventional casino, as well as new games that would be impossible to play in the real world.

Users will be able to play with both virtual and real currency. First time players will begin with a basic custom avatar, a simple virtual hotel room, a reasonable allowance of virtual money, and several articles of virtual clothing. In the casinos, they will be able to select from both virtual currency games and real currency games. Virtual money may be used to make virtual purchases in the virtual shops on the strip, while members using their avatar can make real purchases at our affiliate's virtual stores using real currency. Users will also be able to spend their virtual earnings on such things as luxurious virtual hotel rooms for their character, new designer virtual clothing, virtual cars, and other amenities. Earning of the virtual dollars will be designed to parallel a real person's experience in Las Vegas. One will be able to earn more virtual dollars through activities such as working odd-jobs, or performing various "quests," similar to other online role-playing games.

Casinos desiring that our company create their resort on the virtual strip will gain prime advertising space in a novel medium, allowing them to market directly to their gambling audience. Users interested in gambling will be able to walk through their gambling floors and see and live in their best suites. Similarly, major stores and smaller Vegas shops desiring to be placed in Virtual Vegas will be able to market their real goods on the virtual strip. The interactive nature of the virtual strip creates a novel shopping environment conducive to social shopping, an aspect that electronic commerce currently lacks.

### ***Products:***

We will offer three products: access to gambling in an entertaining environment, shopping, and advertising. When real currency is used in gambling, we will generate revenue from rakes and house favored games. To profit from online retail, firms with online distribution infrastructure will pay a small commission. We will also charge a nominal monthly fee of \$5-10, remaining substantially cheaper than other MMOG's monthly fee

(\$15-\$20).<sup>3</sup> Moreover, users will be able to obtain full rebates through (real) monetary interaction in Virtual Vegas, either gambling or shopping. The service will be essentially free to users who use real currency in the casinos or shops, and easily affordable for casual gamers. This encourages gamers to utilize our program for shopping, which should help us obtain contracts with retailers as described.

### ***Mission Statement***

The mission of Virtual Vegas is to provide an enjoyable, quality Vegas experience to players, while providing advertising and retail space to casinos and retailers. Through extensive external auditing, powerful 128 bit encryption, and partnerships with major US companies, we will build the trust of our members. The user interface and virtual environments will be developed under the same quality expectations as top selling 3D software titles (Consider Uru: Ages Beyond Myst or Tom Clancy's Splinter Cell: Pandora Tomorrow). Through perks, shows, social interactivity, and life-like gambling, we will provide our members with the Vegas experience from their home computer.

### ***Keys to Success:***

There are several components that will ensure the success of Virtual Vegas:

- It is paramount that we maintain a critical mass of users. There is a strong network externality for the users, retailers, and casinos. To ensure that enough people initially enter Virtual Vegas we will not charge for the software or the first month of service. Quality advertising will also be necessary. To maintain an excellent product image, we plan to advertise through television, magazines, and other mass media. This will allow us to reach a widespread audience, while avoiding the less respected and perverse forms of advertisings (spam, pop-ups, etc.). [Note: PartyPoker.com, the online gambling site, and Splinter Cell, a popular video game, have demonstrated the success of more visible advertising, rather than relying on the strictly internet-based promotions.]

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<sup>3</sup> Moris, Chris. "Everquest – with Wookies." CNN Money. June 26, 2003.

- Unlike all other MMOGs first time users of Virtual Vegas will be able to immediately enjoy the game without several weeks of extended game play or extensive reading about the game.
- We need the confidence of our users, retailers, and casinos. The software and information infrastructure will be reviewed by outside auditors. Additionally, retailers and casinos will be able to oversee the development of their virtual shops and buildings respectively. This would require a prototype, which could be produced for less than \$20,000.

### ***Game Technology, Production and Distribution***

In one year we can produce Virtual Vegas for under \$5 million. Traditionally, a large portion of development expenditures goes toward character and storyline development, issues not applicable to Virtual Vegas. Moreover, the primary development expense will be the creation of artistic content such as geometric models and texture maps. While a high quality rendering engine will be necessary, the development or acquisition of one under the DirectX 9.0 architecture should be achievable within the limited budget. Furthermore, by choosing DirectX 9.0 we will be able to distribute a console version.

The game will be run on a distributed cluster in the same manner as the Google™ search engine. By using large numbers of previous generation desktop computers and a cluster architecture we can exploit the inherent parallelization of the MMOG. This setup will minimize information latency as well as hardware costs and thereby reduce the cost associated with running the service.

The software, along with updates, will be distributed freely from our servers and will run locally on the user's machine, taking advantage of standard hardware graphics accelerators found on personal computers. The internet will be used to exchange character information with the central server described earlier, and manage the casinos and shops. By rendering the graphics and sound locally, excessive real time usage of network bandwidth will be attenuated, enabling users on limited bandwidth connections to enjoy the experience. However, to accommodate low speed dialup connections and cater to users who prefer simpler graphics, we will provide a simplified two dimensional interface.

## ***Legal Issues***

There is currently no legislation explicitly preventing internet gambling. However, the second circuit court, in *United States vs. Cohen*, found Cohen's World Sports Exchange, which enabled user to place sports bets over the internet, in violation of the 1961 Wire Act, which prohibits sports wagers made across state line by telephone. On March 25, 2004, the World Trade Organization found the US aggression towards internet gambling in violation of global trade policy. Currently, there are no federal laws directly prohibiting online gambling in the United States. While the exact fate of online gambling in the United States remains uncertain, if the US follows the European Union, which is gradually developing supportive legislation and obeys international trade law, the future looks bright.

While the US represents nearly 60% of the gambling market, all online casinos are foreign, and so 4.1 billion dollars of gambling revenue left the US last year.<sup>4</sup> The US has two logical options; either outlaw online gambling or legalize and regulate it within the country. As with preventing other online crimes (underage pornography or illegal media files), it will prove incredibly difficult, if not impossible, to stop an industry that already has such a strong foothold among US consumers. Given the WTO's decision to fight any action against online gambling and the USA's history as a strong free trade economy, it is our opinion that online gambling will be accepted by the American government in the near future. The political uncertainty shrouding online gambling should help protect Virtual Vegas by increasing the risk to a major US entrant and providing us with a first entrant advantage.

Only Nevada, Oregon, Illinois, Louisiana, North Dakota, and Wisconsin have legislation prohibiting online gambling.<sup>5</sup> We will prohibit users in those states from using real money in the Virtual Vegas casinos. We will take as much care as possible to prevent illegal gambling and make our best attempt to ensure members abide by their local gambling regulations. We will track gambling laws by state, and compare them with the home billing addresses of users. This tracking, combined with an acceptance of legal responsibility that

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<sup>4</sup> *ibid*

<sup>5</sup> <http://www.gambling-law-us.com/State-Law-Summary/index.htm>

users must agree to before installation of the software, will serve to prevent the majority of illegal gambling that will occur, which should enhance our product image.

## The Electronic Gaming Industry

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The electronic gaming industry is enormous and rapidly expanding. Revenues (25 billion) from the global electronic gaming industry in 2003 exceeded the annual revenues of the movie industry (21.4 billion).<sup>6 7</sup> While the average production cost of a Hollywood movie is 63.8 million, top selling video games typically cost 5 to 10 million to produce, with a development time of 1 to 2 years.<sup>8 9</sup>

One of the increasing trends in the gaming industry is the movement towards online multiplayer games. The major console manufactures, Sony and Microsoft, are both adding network connectivity to their systems and pushing their respective gaming networks. Microsoft's online service, Xbox Live, has attracted over one million customers, each of whom pay 50 to 70 dollars a year.<sup>10</sup> Meanwhile, most PC based software titles support some degree of networking based interactive gaming. The ubiquitous expansion of high-speed cable and DSL networks has enabled developers to push the limits of interactive gaming into the realm of massive multiplayer online games (MMOGs). Some pioneers in this new genre are the incredibly successful Sims Online (one of the top 10 best selling games of 2002)<sup>11</sup> and Everquest (430,000 users).<sup>12</sup>

Typically, a player purchases an MMOG at retail price and after installing the software, logs onto a server owned by the game publisher to access the enormous virtual world. The first month of access is generally free and the user must pay a fee each month thereafter to continue their access to the virtual world.<sup>13</sup> Although revenues from the

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<sup>6</sup> UNESCO Report. [http://www.factbook.net/wbglobal\\_rev.htm](http://www.factbook.net/wbglobal_rev.htm)

<sup>7</sup> Reuters. "Survey: Video gamers get older, get online." CNN.com May 13, 2004.

<sup>8</sup> Moran, Joseph. "Game Development Costs Spiraling Upward." GameMarketWatch.com

<sup>9</sup> "Valenti: Average Costs of Making, Marketing Movies Top \$100M." KTVU.com

<sup>10</sup> Morris, Chris "Madden football headed to Xbox Live." CNN Money. May 11, 2004.

<sup>11</sup> Laird, John E., "Computer Game Business." Lecture Notes (EECS 494). University of Michigan. Fall 2002.

<sup>12</sup> Moris, Chris. "Everquest – with Wookies." CNN Money. June 26, 2003.

<sup>13</sup> *ibid*

MMOG genre currently account for only 3% of the entire gaming industry, there are 43 online games on the market and more than 73 in development.<sup>14</sup> John Taylor, managing director and analyst for Arcadia Investment Corporation stated, “There are only going to be one or two games which are really successful in the key genres which are offered online – which, right now, is defined as fantasy role playing.”<sup>15</sup> Consumers have not widely accepted MMOGs because of the monthly fees and the amount of time required to obtain an enjoyable status in the game.<sup>16</sup>

The Virtual Vegas model overcomes the major challenges currently faced by the MMOG subset of the gaming industry, while at the same time creating its own unique genre. Because the main streams of revenue will come from marketing and gambling, the monthly fee can be reduced and even eliminated, encouraging users to use the casinos and stores. Meanwhile, the very nature of gambling will allow first time users to enjoy the game as much as veteran gamers. Because of its focus on gambling and shopping, Virtual Vegas will not be an alternative to mainstream fantasy games and will therefore not have to compete with this already inundated market.

## **Online Gambling Market Analysis**

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### ***Entrants***

A major barrier to any entrant is the software production delay. Creating any virtual world takes at least a year to develop. Our idea is novel, making the entry of any other firm unlikely until we have proven the market to be profitable. By the time we reach that point, we believe that any company wishing to enter would be several years behind and our member base should be large enough to deter entry.

Traditional brick-and-mortar casinos are potential entrants. They have the capital and the consumer base necessary to enter at a comparable level of quality. Casinos on the Las Vegas Strip carry strong name recognition, which garners user confidence and credibility.

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<sup>14</sup> *ibid*

<sup>15</sup> *ibid*

<sup>16</sup> *ibid*

Brick-and-mortar casinos might enter in order to obtain new clients. Entering could target casual home gamblers and attract new visitors to Vegas.

While we understand that individual casinos have the potential to be successful entrants, we believe that none of them could sustain success. If a single casino were to produce and market this product, it would inherently contain a bias towards that casino. It would be nearly impossible to obtain cooperative contracts with other casinos that are not involved in the production because the management of the other casinos would realize that they may be negatively represented in the final product. Our nonpartisan standpoint enables the facilitation of cooperative agreements that do not heavily favor a single casino. Thus we do not believe the casinos would enter into this market.

Web portals are also potential entrants. They aim to provide a complete online experience, offering personalized information services and games. Web portals have the advantage of free advertisement within their own portal. Large portals, such as Yahoo! can advertise to millions at negligible costs. Web portals also employ software programmers and network technicians who are well versed in internet technology. A web portal could develop a competing product relatively quickly and would enter with an existing customer base.

Web portals if entering have to rationalize how much advertising space they wish to invest in gambling at the cost of other ad revenue. More importantly, this product does not fall within the realm of their product market. They lack the gaming programmers and artists to compete with our planned software as they rely on simplicity and low overheads, and will have difficulty obtaining contracts with our partner casinos. Furthermore, they have consistently abstained from entering the high-end gaming industry.

The most threatening potential entrants are software entertainment companies, who have the programmers, artists and industry knowledge to mimic and market competing software. Their brand names (Squaresoft, EA, UbiSoft, Vivendi) are recognized and respected by gamers.

The barriers to entry facing software entertainment companies are not as large as those facing other potential entrants, but our differentiation will enable us to avoid a product war with another software entertainment company. The recent explosion of online gambling, the successes of games such as “The Sims” in all ages, and the aging of the original gaming generations all lead us to believe that an interactive online world focused on gambling will

create and fill its own market. Since this age group does not fall within the main target audience of current software entertainment companies, they will not consider us a rival. In actuality we hope to cooperate with the gaming companies by allowing access to demos and the purchasing of software through retail in Virtual Vegas.

## ***Suppliers***

The development and maintenance of the virtual strip will require a team of software developers and graphic designers. The development of a typical online game requires roughly 25 artists, 12 designers, 12 artists, and 3 producers.<sup>17</sup> Software developers have little bargaining power in the wake of the high-tech recession. Graphic designers are needed to render the complex environments as well as retail items, but have limited bargaining power since graphic designers are not a rare commodity.

Network bandwidth and server systems are critical supplies. There are many network bandwidth suppliers and the Google strategy, described earlier, for server systems could be effectively applied to run Virtual Vegas. Because major hardware suppliers need to liquidate their considerable inventories of second generation hardware, their bargaining power will be negligible.

It will also be necessary to obtain permits and construct the facilities to run the Virtual Vegas servers and corporate headquarters. Online gambling is now allowed in many states (Nevada excluded). In order to create a trustworthy company image, we will be located in the United States, rather than a foreign country. Ideally, we would like to locate in South Dakota in order to easily negotiate alliances with credit card companies. The state in which we locate will profit from gambling taxes and therefore benefit from issuing a gambling license. We should be able to acquire the necessary permits at an affordable price. Since there are so many states in which we could potentially locate, the bargaining power of these states is limited.

## ***Buyers***

We will target the traditional Las Vegas audience as well as gamers. Due to our gaming and life-like simulation software and the ability to play using virtual currency, we

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<sup>17</sup> Laird, John E., "Computer Game Business." Lecture Notes (EECS 494). University of Michigan. Fall 2002.

will also gain users from the younger gaming audience, who may potentially develop into shoppers or gamblers in the future. Through this new avenue of video games, we intend to enlarge the existing gambling population, creating a larger market for us to capture.

Because users are individual, they have essentially no bargaining power. There are no means for the users to divert a portion of the profits. We will be audited by a third-party independent accounting firm and we will publicly offer percentages, expected values, and house takes for all house games and table games, as the casinos in Las Vegas are required to do. The profits received will be exclusively divided between us and our suppliers.

## **Positioning and Differentiation**

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We will be the first company to integrate 3D technology with online gaming and shopping, as well as being the first American based online casino. As a consequence of legal uncertainties in the U.S., all current gambling servers are foreign. Subjecting ourselves to regulation by state gaming commissions will build strong consumer confidence in our casinos. Consumer confidence in financial systems security and fair gaming is essential for the development of our online casino.

Our major differentiation strategy is to partner with popular product lines, providing advertising and complementary good promotion in exchange for their backing in order to build our own name. Very few online casinos have made a large commitment to mass media advertising. Our partners will provide quality advertising for us. Hopeful partners include the major Vegas casinos, online apparel and electronic retailers.

Caesar's Entertainment is a conglomerate owning popular casinos on the Las Vegas strip and in 10 different cities world wide, making it one of the largest, most trusted, names in brick and mortar gaming. Caesar's would desire to ally with us because we provide an effective and cheap method of displaying advertisements to the audience they most wish to target - gamblers. Benefits of cooperation abound - we could offer free rooms in Caesar's or vacation packages to Las Vegas as prizes. Their name recognition and consumer confidence will differentiate us from our rivals. Furthermore, by advertise in their casinos we will expose their clientele to convenient gambling.

Many internet users are active online shoppers. Best Buy is a leader in internet and electronic sales in the US. They have a highly developed online shopping and shipping

infrastructure. Retailers such as Best Buy will market their products through an interactive store on our strip where virtual salesmen would display and sell products, and we will be compensated through sales commissions. Alliances with companies such as Best Buy would provide our clientele with convenient, reliable shopping, while providing an interactive shopping experience.

Our 3D environment offers a unique shopping experience, enabling a user's avatars to model clothes, decorate their suits, sample music, and test drive cars. Members of the virtual community will shop together, pick out clothing, try it on and offer opinions to each other through our interactive chat, allowing them to gain the social experience that goes along with shopping. This offers our clients a completely novel online shopping experience, far closer to the mall experience than any current online system.

Credit Card companies are central to successful differentiation, because they are highly trusted by consumers. Many credit card companies do not allow their users to use their credit cards to gamble online.<sup>18</sup> As such, we will provide a suitable method for credit card clients to spend money. We will address the main concerns of credit card companies by ensuring that the debts are paid by the users. Users who do not pay will be banned from our service. Obtaining cooperation from most (or all) credit card companies will be a big step in differentiating ourselves from other online gaming programs.

Another key element of success that neither the gaming or online gambling industry has unlocked is the externality of online community building. Online chat rooms, dating services and friendship communities have become very popular among the young adult online users as a way to meet new people and socialize within a safe and convenient medium. Our product will also allow users to socialize. No current online gaming or shopping sites enable social interaction at the level of Virtual Vegas.

## **Rivals/Competitors:**

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There are two types of online gambling sites that offer competition. Online poker sites, such as Partypoker.com are rapidly growing. By coordinating poker games between members, online poker companies extract a small percentage (typically 5-10%) of the total

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<sup>18</sup> [http://www.onlinecasinoreports.com/news\\_show.asp?id=340](http://www.onlinecasinoreports.com/news_show.asp?id=340)

money wagered. These sites are fairly rivalrous, using promotions and large sign-up bonuses. Most have advertising contracts with large search engines in order to attract new members. If we consider that each hand dealt rakes approximately 1 dollar per hand, that each hand takes approximately 1 minute, and that sites have an average of 50 tables running at any given time, then the site earns \$70,000 dollars per day! This leaves significant room for price-cutting, which does not appear to have taken effect within the industry.

Many online gambling companies offer all the games common to a brick-and-mortar casino; blackjack, video poker, keno, slots, roulette, and craps are the main draws. While these games lose much of the human interaction effect (which is a large incentive to play games such as craps and roulette), the revenues are similar to online poker sites. The principle difficulty is attracting players - there are even sites dedicated exclusively to advertising of the many online casino and poker sites across the internet (see [www.gambling-forums.com](http://www.gambling-forums.com)).

Another possible source of competition is the brick-and-mortar casino. As we both offer similar games and atmosphere, it could be argued that we will steal away the Vegas customer base by recreating the Las Vegas environment within a computer simulation. We believe our product will act as a complement, rather than a substitute, to the Las Vegas casinos. By showing the customers an accurate (or slightly embellished) picture of Las Vegas, we will create an incentive for the customer to visit the actual Vegas strip. We contend that our product will draw a significant number of non-gamblers into the gambling industry, generating revenue for the casinos that advertise through our product.

## ***Rivalry***

One issue that is important to consider is the rivalrous nature of the online gambling industry. Research indicates similar levels of promotions are offered throughout online casinos, which is indicative of rivalry and narrow profit margins. However, other research indicates, that this is not indicative of price-cutting by the larger online casinos, but by the smaller casinos. This implies that larger casinos, like PartyPoker.com, should price-cut in order to increase market share, and eliminate minor competitors. The key point for our entrance is that these sites seem to be focused on fighting for the existing customer base instead of trying to draw in new customers.

This bodes well for our product because it indicates the industry is relying on price-cutting and existing reputation, rather than differentiation. Our product will be overwhelmingly differentiated. With the backing of Las Vegas casinos and the Vegas atmosphere, Virtual Vegas should devastate the industry with our clearly superior product. Part of the problem for the smaller online gambling sites is the lack of capital backing, as they tend to be privately run with small investors for financial backing. With the advertising contracts that should be in place with the casinos and the stores located in Las Vegas, our product should have enough capital to drive out small competitors and quickly challenge the larger online sites within 3 years of release.

We will circumvent the existing rivalries by elevating the quality of online gambling. We will distinguish our product and draw a greater portion of gambling population. Furthermore, we have a plan for how to continue to develop our product and continue improving it to maintain our status as industry leaders.

### ***Future Work***

One of the keys to long term success is the continual development of a product. The first generation of Virtual Vegas will only incorporate some of our many ideas; their implementation in the future is what will ensure that we remain the industry leader in this market. After demonstrating the success of our product, we intend to release the game onto the console market. We plan to forge a partnership with Microsoft, which is heavily pushing its online gaming network. This represents a massive outlet for growth, especially since the current hardware of the Xbox console enables affordable migration from the Windows desktop architecture.

In addition, we would also like to expand by adding more virtual renditions of actual brick-and-mortar casinos to the virtual Strip. This will be accomplished by renegotiating with our original casino partner, offering more favorable conditions, while signing more casinos. This will increase the level of realism of our product, drawing more users. Within 5 years, we hope to have released an Xbox version of our product and have signed 80-90% of the casinos, retailers, and major landmarks of the strip. After that, depending on future outlooks, we may look to expand the scope of the virtual world to other popular gambling spots such as Monte Carlo and Atlantic City. The graphics technology could also be used to

create virtual versions of regular vacation sites that would be able to make good use of the three dimensional capabilities, such as major theme parks (i.e. Disneyworld). The possibilities are limitless...