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Should Las Vegas Pursue Establishing an Online Gaming Cluster? An Exploratory Study

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PART ONE

Introduction

A growing body of research on industry clustering points to many different benefits: firms in clusters are more innovative (Audretsch & Feldman, 1996; Baptista & Swann, 1998) and more competitive (Porter, 2000); labor productivity is higher within strong clusters (Henderson, 1986) location within a cluster reduces transaction costs and consumer search costs (Maine, Shapiro & Vining, 2008). Clustering benefits also arise from various spillovers, such as: "(1) knowledge spillovers from competing co-located firms; (2) knowledge spill-overs from public infrastructure, most notably from public research institutions; (3) spillovers that emanate from suppliers and customers" (Maine, Shapiro, &Vining, 2008, p. 130). Clusters, in some instances, have become an industry's global brain or command centers, attracting brightest talent and largest share of investment capital. Clusters enrich its participants and larger communities because "in a cluster, the whole is greater than the sum of the parts" (Porter, 2000, p. 32).

For many decades, New York City reaped the benefits of being the center of the financial industry. Hollywood is a brain center of the movie business and the Silicon Valley's cluster is a command center for a large portion of the technology industry. Las Vegas is also a brain center of the industry. "As it stands today, Las Vegas produces much of the world's gaming economy, and much of that "production" comes from the intellectual capital located in corporate headquarters that are in turn located in Las Vegas" (Bernhard & Ahlgren, 2011, p. 11).

Besides offering the glitzy Strip experience, for decades, Las Vegas has exported gaming - related products and services to the entire world. The benefits of such economic activity to the city of lights are obvious: Las Vegas for many years was one of the fastest growing cities in the nation where its residents enjoyed higher that average household incomes (Census.gov, 2014).

In the early 2000s, however, the gaming industry entered a new era: that of online gaming. Proliferation of online gaming around the world created a need for talent, technology, and a-know-how brick and mortar centric gaming industry did not possess. Las Vegas, however, was positioned to take advantage of this new opportunity. It had resources needed to become a cluster and a command center of the newly developing online gaming industry. Unfortunately, for the US online gaming industry and possibly, for Las Vegas, the Unlawful Internet Gambling Enforcement Act (UIGEA), which was passed by Congress in 2006, barred the handling of financial transactions for online play and made it illegal to operate commercial online gambling sites in the U.S. Thus, many online gambling companies moved offshore, where they continued to cater to US customers.

On April 15, 2011, US Federal prosecutors, in the attempt to crack down on online gambling, indicted the founders of several major internet gambling companies. They alleged that the internet gambling sites used fraudulent methods to avoid restrictions on financial transactions and, because of that, received billions of dollars from US poker players (Vardi, 2011). In the industry, April 15th is known as Black Friday. From that day on, fearing prosecution, the remaining American online poker sites that operated offshore stopped catering to local players. In the same year, however, the Obama Administration re-interpreted the 1961 Wire Act. According to this re-interpretation, which is not in conflict with UIGEA, states may legalize and license internet gambling as long as the gambling is offered only within the borders of the state (The Monitor's Editorial Board, 2013).

In 2012, Delaware became the first state to take advantage of such an interpretation of the law and legalized internet gambling (Denison, 2012). In 2013, Nevada and New Jersey governors followed suit and signed bills legalizing online gaming in their states. However,

Nevada only made poker legal, while Delaware and New Jersey decided to offer a wide variety of online casino games. Due to unfavorable business environment, most online casino operators bypassed Las Vegas and established their businesses in the jurisdiction with the most potential: New Jersey. Currently only three brands, Ultimate Poker, Real Gaming, and WSOP, operate online poker sites in Nevada. There are twelve gaming sites operating in New Jersey (Division of Gaming Enforcement, 2014).

The gaming industry has been very good to Las Vegas and the state. Over the years, it created a substantial amount of well paying jobs and contributed a substantial share of business taxes (Seung & Harris, 2000). With that in mind, it seems that it would only make sense for Las Vegas to pursue establishing an online gaming cluster. It would probably further strengthen the city's position as a global command center of the gaming industry and foster the creation of many more businesses and sought-after jobs. Perhaps most importantly, online gaming cluster would make Las Vegas competitive in this age of information technology.

The purpose of this research was to determine whether (1) clustering benefits cities, (2) Las Vegas is a cluster of the worldwide gaming industry, and (3) online gaming cluster is forming in Las Vegas in spite of unfavorable business environment. The exploratory study should be useful to lawmakers and business leaders in shaping Nevada's future. It could provide essential information focusing on whether Las Vegas should actively pursue an online gaming cluster.

PART TWO

Literature Review

Over the last few decades, significant contributions to a body of research on industrial clusters were published. Audretsch & Feldman (1996) and Baptista & Swann (1998) examined how clustering stimulates innovation. Helsley & Strange (2002) weighted cost benefits in clusters and Henderson (1986) argued that resources in clusters are more productive. The field has also been extensively researched by Krugman (1991) and Porter (1990, 2000 & 2003), who analyzed many aspects of clusters and economic activity in them. Bernhard & Ahlgren (2011) looked at one specific cluster, Las Vegas. This literature was useful when determining whether clustering benefited cities, including Las Vegas.

Research on online gaming and its effect on commercial casinos were useful when evaluating the importance of online gaming to Las Vegas. Philander & Fiedler (2012) estimated the effects of online poker on commercial casino revenues. Philander (2011) looked at the impact of all forms of online gaming on brick and mortar casinos.

Definition of a Cluster

Krugman's (1991) theory of regional specialization of industrial activities (clusters) was based on specialized labor pools, intermediate goods, and the presence of knowledge externalities. Porter (2000) listed specific characteristics of a cluster:

> More than single industries, clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services as well as providers of specialized infrastructure. Clusters also often extend downstream to channels or customers and laterally to manufacturers of complementary products or companies related by skills,

> technologies, or common inputs. Many clusters include governmental and other institutions (e.g., universities, think tanks, vocational training providers, standards-setting agencies, trade associations) that provide specialized training, education, information, research, and technical support. Many clusters include trade associations and other collective bodies involving cluster members. Finally, foreign firms can be and are part of clusters, but only if they make permanent investments in a significant local presence. (p. 16)

Clusters can form in just about any industry and geographic region. Enright (1993) explained that the geographic scope of clusters could range from a city or a region to a state, country, or even neighboring countries.

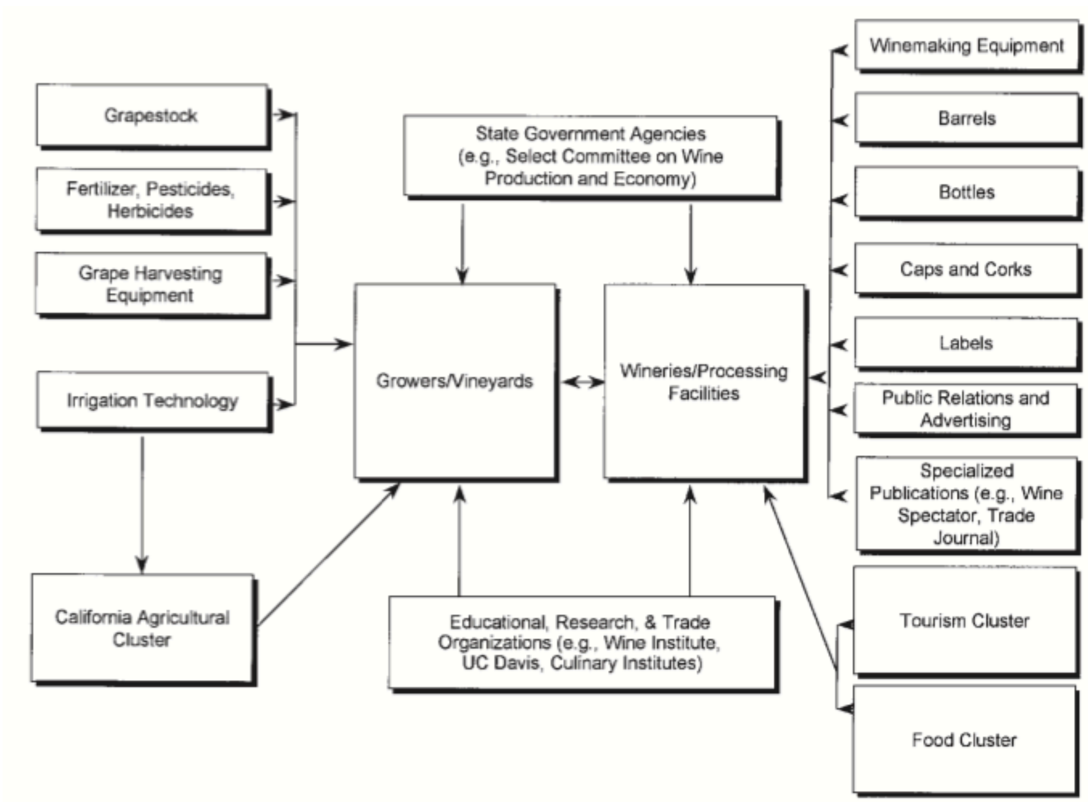

Figure 1. The California Wine Cluster. Adapted from Location, Competition, And Economic Development: Local Clusters In A Global Economy, by Porter, M. E., 2000, Economic Development Quarterly, 14, p. 16, Copyright 2000 by SAGE Publications.

Is Las Vegas a Cluster?

Nevada is one of only five states, which is home to more than 50% of all company headquarters in a specific industry. 67% of Hotels, Casinos, and Resort companies are headquartered in the state (Money.cnn.com, 2012). Bernhard & Ahlgren (2011) coined the term "Las Vegas: Global Command Center". The authors made a point that, despite increasing competitive pressure from Macao and Singapore, Las Vegas remains a center of the global gaming universe. With the rapid global proliferation of gambling in recent decades, Las Vegas' gaming companies turned their attention to exports. Nearly 40% of Macao and Singapore's gaming revenues are generated by Las Vegas based companies. The dominance, among other gaming sectors, is also evident in gaming related manufacturing. Virtually all major gaming manufacturing companies in the world: IGT, Bally, WMS, Konami, Aristocrat, and Shuffle Master all have their global headquarters in Las Vegas, many of them also have manufacturing plants in the city. "These businesses maintain a dominant share of the slot business in Macao (where their combined market share is well over 90%, with Aristocrat leading the way at almost 60%, and then IGT, WMS, and Bally coming in at around 11%, 10%, and 9% respectively). In Singapore, these companies also have a combined market share of over 90% (highlighted by market leader Aristocrat holding on to 39%, IGT coming in second at 20%, followed Bally at 16% and WMS at 12%)" (Bernhard & Ahlgren, 2011, p. 11). All of the above appears to fit into Porter's (2000) definition of a cluster.

Las Vegas also seems to enjoy most of the cluster benefits described in the literature quoted below: the city's firms benefit greatly from global competitiveness; when compared to those of neighboring counties that are not home to industrial clusters, Las Vegas companies and more innovative and their workers are more productive; Las Vegas gaming cluster also benefited

the larger Las Vegas community economically and socially.

Competitive Advantages Deriving from Clustering

The competition within a cluster is stronger than outside of it. As Porter (2010) suggested, "Vigorous competition occurs in winning customers and retaining them. Because of the presence of multiple rivals and strong incentives, the intensity of competition among clusters often is accentuated" (p. 25). Companies that survive the harsh competitive environments of clusters are better equipped to compete outside of them: they are more innovative (Audretsch & Feldman, 1996; Baptista & Swann, 1998), have higher labor productivity (Henderson, 1986), and enjoy lower costs (Maine, Shapiro & Vining, 2008). All of that adds up to a significant competitive advantage over non-cluster firms.

Bernhard & Ahlgren (2011) identified specific examples from the Las Vegas gaming industry. Examples included casino corporations, such as, Las Vegas Sands (LVS), MGM Resorts International (MGM), and Wynn Resorts (Wynn). The research suggested these organizations were toughened by intense competition in the Las Vegas cluster and as a result they are now major players in foreign gaming markets of Macau and Singapore. Collectively they take up 40% of Macau's casino market and LVS alone generates nearly 40% of Singapore's casino revenues (Bernhard & Ahlgren, 2011). Gaming manufacturing companies from Las Vegas also dominate in domestic and foreign markets (Bernhard & Ahlgren, 2011).

Las Vegas, of course, is not the only globally dominant cluster. Hollywood (movies), Silicon Valley (technology) and New York (finance) clusters' cultivated many internationally dominant firms. Similar dynamic is found in other parts of the world. Christensen, Thomsen & Lomholt (2011) studied 150 clusters in Northern Europe and found that many global industry leaders originated there or have a strong presence in their clusters. Among most notable names:

technology giant Siemens AG, located in Nunberg, Germany medical cluster and automaker BMW Group, located in Bavaria, Germany cluster circle.

Higher Innovation

One of the main benefits of clustering is higher innovation. As cited in Baptista & Swann (1998), "Porter (1990) pointed out that, underlying the phenomenon of clustering, are mechanisms that facilitate the interchange and flow of information between firms while rivalry is still maintained" (p. 525). Audretsch & Feldman (1996) examined the geography of innovation and production and found evidence that the flow of information among firms located in clusters results in firms more likely to innovate. Similarly, knowledge spillovers (Maine, Shapiro & Vining, 2008) are pervasive in clusters. This knowledge spillover, particularly new technological knowledge, not only benefits companies already located in clusters, it also attracts and supports new innovators. From this research it is reasonable to infer that attracted new innovators in turn benefit the clusters and further stimulate innovation in them.

Further, Audretsch & Feldman (1996) found evidence that "…industries in which knowledge spillovers are more prevalent - that is where industry R&D, university research and skilled labor are the most important - have a greater propensity for innovative activity to cluster than industries where knowledge externalities are less important" (p. 639). In light of this research, it could be argued that online gaming, which is part of the technology industry, had the potential to achieve a greater propensity to cluster.

Baptista & Swann (1998) analyzed whether "firms located in strong industrial clusters or regions are more likely to innovate than firms outside these regions". They found that "…if region *A* has about 100,000 more employees in a certain industry than region *B*, then a firm belonging to that industry and located in *A* will, on average, produce one more innovation per

year than a similar firm located in region *B*. Firms located in clusters that are strong in their own industry are, therefore, considerably more likely to innovate" (p. 535).

Innovation in American Regions, a project in part conducted by Purdue Center for Regional Development and funded by U.S. Commerce Department's Economic Development Administration, ranked US regions, among other characteristics, by innovation (statsamerica.org, 2014). The index incorporated a mix of data that characterizes the place and its people (accounting for 60 % of the overall index score) and data that characterizes its economic success (40 % of the overall score). Although Clark, the county in which Las Vegas cluster is located, scored lower than the national average on Innovation Index (86 vs. 100 points), it is notably more innovative than neighboring counties that aren't home to clusters: Lincoln, NV (76.4), San Bernardino, CA (79.8), and Mohave, AZ (80.8) (Innovation Index Mapping Tool, 2014). Audretsch & Feldman (1996) research suggested that the higher Innovation Index score could be attributed to gaming cluster's presence.

Higher Labor Productivity

Higher labor productivity is another benefit of clustering. Henderson (1986) examined an efficiency of resource usage in cities and found that "resources in any industry are more productive in places where there are more of similar activities" (p. 66). Increased productivity was attributable to advantages such as proximity to suppliers and human capital, access to information, access to institutions and public goods, marketing complementarities, and ability to offer complementary products for the buyers (Porter, 2000).

Madsen, Smith & Dilling-Hansen (2003) examined more than 30,000 Danish firms in order to estimate whether belonging to a cluster - enhanced productivity. They found that "…in general, the productivity advantages for a firm belonging to a cluster of horizontally related firms

are about 8%" (p. 12).

Innovation in the American Regions project (statsamerica.org, 2014) also ranked US regions by productivity and employment. As with innovation and economic dynamism, Clark County was ranked lower than national average (84.3 vs. 100 points) but significantly higher than all before mentioned neighboring counties (Lincoln, NV (64.6), San Bernardino, CA (78.1), and Mohave, AZ (76.1)) (Productivity and Employment Index Mapping Tool, 2014). Although it is unknown how much the gaming cluster contributed to Clark County's productivity index, finding by Madsen, Smith & Dilling-Hansen (2003) suggested that contribution is significant.

Lower Costs

Lower costs are yet another benefit of clustering. Helsley & Strange (2002) found that location, within a cluster, facilitated the acquisition of resources and capabilities; limited the possibility of holdup by specialized suppliers and distributors; and reduced transaction costs, particularly search and information costs. "Additionally, colocation with competitors may generate demand side benefits by reducing consumer search costs" (Maine, Shapiro & Vining, 2008, p. 130).

Do Clusters Benefit their Larger Communities?

It has been previously established that the presence of cluster environment has largely benefited companies in those clusters (Audretsch & Feldman, 1996; Baptista & Swann, 1998; Henderson, 1986; Maine, Shapiro & Vining, 2008; Porter, 2000). Further, research suggested that clusters also benefited their larger communities. Rauch (1993) analyzed cities and discovered that higher wages were paid in places with higher concentrations of skilled workers, a tendency that has been rising over time. According to research conducted by Glaeser & Gottlieb (2009), "The largest body of evidence supports the view that cities succeed by spurring the

transfer of information. Skilled industries are more likely to locate in urban areas and skills predict urban success. Workers have steeper age–earnings profiles in cities and city-level human capital strongly predicts income" (p. 1023). Delgado, Porter & Stern (2012) analyzed region-industry growth between 1990 and 2005 for 177 regions and 589 traded industries, totaling 55,083 region-industries. They found that regions, in which industries were participating in strong clusters, experienced steeper growth of wages and employment, as well as firm creation and patenting.

Professionals in clusters earn higher wages and are exposed to greater opportunities. A cluster environment is also very beneficial to new businesses and entrepreneurs. According to Porter (2000), "Many, if not most, new businesses are formed in existing clusters rather than in isolated locations." (p. 24) [The author is referring to headquarters, not branch offices or ancillary facilities]. The reason is many-fold: the existence of a cluster indicates an opportunity; barriers to entry are lower; financing, investors, and skilled labor are readily available (Porter, 2000). Delgado, Porter & Stern (2010) found "striking evidence" that clusters positively affected entrepreneurship, they stimulate new business creation and start-up related employment.

Startups and established local and foreign companies are drawn to clusters. There were, according to Porter (2000) "numerous examples of firms that have relocated entire business units to cluster locations or designated their subsidiaries located there as the regional or world headquarters for lines of business." (p. 25)

Professionals, startups, and established companies benefit from clusters. An attractive business and professional environment earn more tax revenue for the cities and states where clusters are situated. In turn, these cities and states provide higher standard of living to all residents. As explained in Swann (1992) and Porter (2003), clusters strongly affected and were

crucial for regional economic development.

Clark County was ranked the highest in the Innovation in American Regions Project's Economic Well-Being Index. With 101.6 points, it is slightly above the national average (Economic Well-Being Index Mapping Tool, 2014). The research literature suggested that the Las Vegas gaming cluster made significant contributions to Clark County residents' well being. Approximately 20 % of all jobs in Las Vegas were gaming related (Seung & Harris, 2000). The median household income in Clark County was higher than the US average (Census.gov, 2014).

Does Online Gaming Industry Need a Cluster?

Clustering is more the rule than the exception. As cited in Madsen, et al. (2003), "In their studies of the manufacturing industries in the USA, Ellison & Glaeser (1997) compared the actual geographic concentration of firms with what one would expect to arise randomly if firms locate themselves as blinds. They found that of a total of 459 four-digit SIC industries, "as many as 446 display excess concentration in some location." (p. 2) In light of this research and Audretsch & Feldman (1996), who found that technology industries have a greater propensity to cluster, it could be argued that online gaming industry has a great propensity to cluster. Thus, if online gaming will not find home in Las Vegas, it will eventually cluster somewhere else.

Would Online Gaming Hurt or Help Las Vegas?

Although in a cluster, the whole is greater than the sum of the parts, clusters have their limitations. According to Porter (2000), there was a possibility that specialized inputs and personnel become scares in clusters. In such case, cluster participants were inclined to bid up the costs. Porter (2003) pointed out that overreliance on clusters may be dangerous for regional economic development "because it exposes a region to shocks and business cycles".

That is why many regions set a goal of diversifying the clusters. Besides the benefits described in the quoted literature, diversification could be another reason why Las Vegas should pursue the goal of becoming a worldwide online gaming industry cluster. Heavily reliant on tourism, Las Vegas suffered greatly during the resent recession. It is reasonable to believe, that online gaming cluster could have helped the gaming industry to offset the loses sustained in the brick and mortar sector.

However, some believed that introduction of all forms of online gaming to Las Vegas would cannibalize brick and mortar casino revenues and thus hurt, not help, the cluster and the city. The gambling industry is an important part of Nevada's economy. According to Seung & Harris (2000), it produced approximately 16% of state's economic output, accounted for about 18% of state employment, and contributed nearly 24% of total Nevada tax revenue. Therefore, it was important to estimate the impact of online gaming to traditional casino business. There were only a couple of empirical studies done on the subject. Philander & Fiedler (2012) examined the relationship between traditional offline gaming revenue and internet poker in the US and Canada. The authors looked at post-UIGEA/pre-Black Friday period and found that offline gambling and online poker are complementary goods, thus "presence of online poker may increase demand of offline gambling overall" (p. 1). Philander (2011) estimated what the effect of all forms of online gaming to the commercial casino industry in pre-UIGEA period was. The author found that online gaming and commercial casinos were substitute goods and that former cannibalized the latter: a one dollar increase in online gaming revenue is estimated to coincide with a 27 to 30 cent reduction in brick and mortar casino revenue. These findings are alarming. They suggest that, in order to protect the local casino industry and the many businesses and residents that depend on it, online gaming should be restricted. On the other hand, online gaming is poised to

develop into a huge industry. As cited in Garlitos (2013), according to the H2 Gambling Capital, which is a gambling industry's leading consulting and market intelligence firm, worldwide legal money online gambling industry could reach $40 billion in gross gaming revenue by 2015. So far, in the US, revenues are small. Only Delaware, Nevada, and New Jersey have some sort of legal online gaming availability. In New Jersey, which is the biggest state where all forms of online gambling are legal, monthly grows gaming revenues were roughly $10 million (Division of Gaming Enforcement, 2014). However, California, New York, Massachusetts, and Pennsylvania are also considering online gambling legalization (Grochowski, 2013). According to some estimates, once these states join the online gaming party, US market could be worth more than $7 billion annually (Garlitos, 2013). Online gaming is becoming too big of an industry to ignore. In light of the research on clusters, it is very likely that Las Vegas would greatly benefit by becoming a global command center of this emerging industry. Part three of this paper will further examine whether Las Vegas should strive to become an online gaming industry cluster.

PART THREE

A body of research quoted in Part 2 suggests that clustering was beneficial to firms and even the larger communities in which they exist: in a cluster, the whole was perceived as greater than the sum of the parts. To answer the remaining two research questions (is Las Vegas a cluster of the worldwide gaming industry and whether online gaming cluster is forming in Las Vegas in spite of unfavorable business environment) current Las Vegas gaming cluster and online gaming cluster were modeled. Gap Analysis was employed to answer the question about whether or not Las Vegas has the potential to become a cluster of worldwide online gaming industry. Gap Analysis technique allowed to determine what elements of online gaming cluster already exist in Las Vegas and what steps would have to be taken in order to move from the current to the desired state.

Current Las Vegas Gaming Cluster

Porter’s (2000) California Wine Cluster model was adapted to illustrate the current Las Vegas gaming cluster. Figure 2 depicts a schematic diagram of it. There are more than 100 different size casinos at the center of Las Vegas gaming cluster. An extensive network of supporting industries, firms, and organizations revolves around the cluster’s nucleus. These include slot machine, casino furniture, signage, and other gaming equipment manufacturers; specialized legal services, compliance services, public relations, and advertising firms; and numerous trade publications and shows. A number of local institutions, such as University of Nevada, Las Vegas (UNLV), are involved with gaming. Las Vegas gaming cluster enjoys a linkage to other local clusters: hotel and convention.

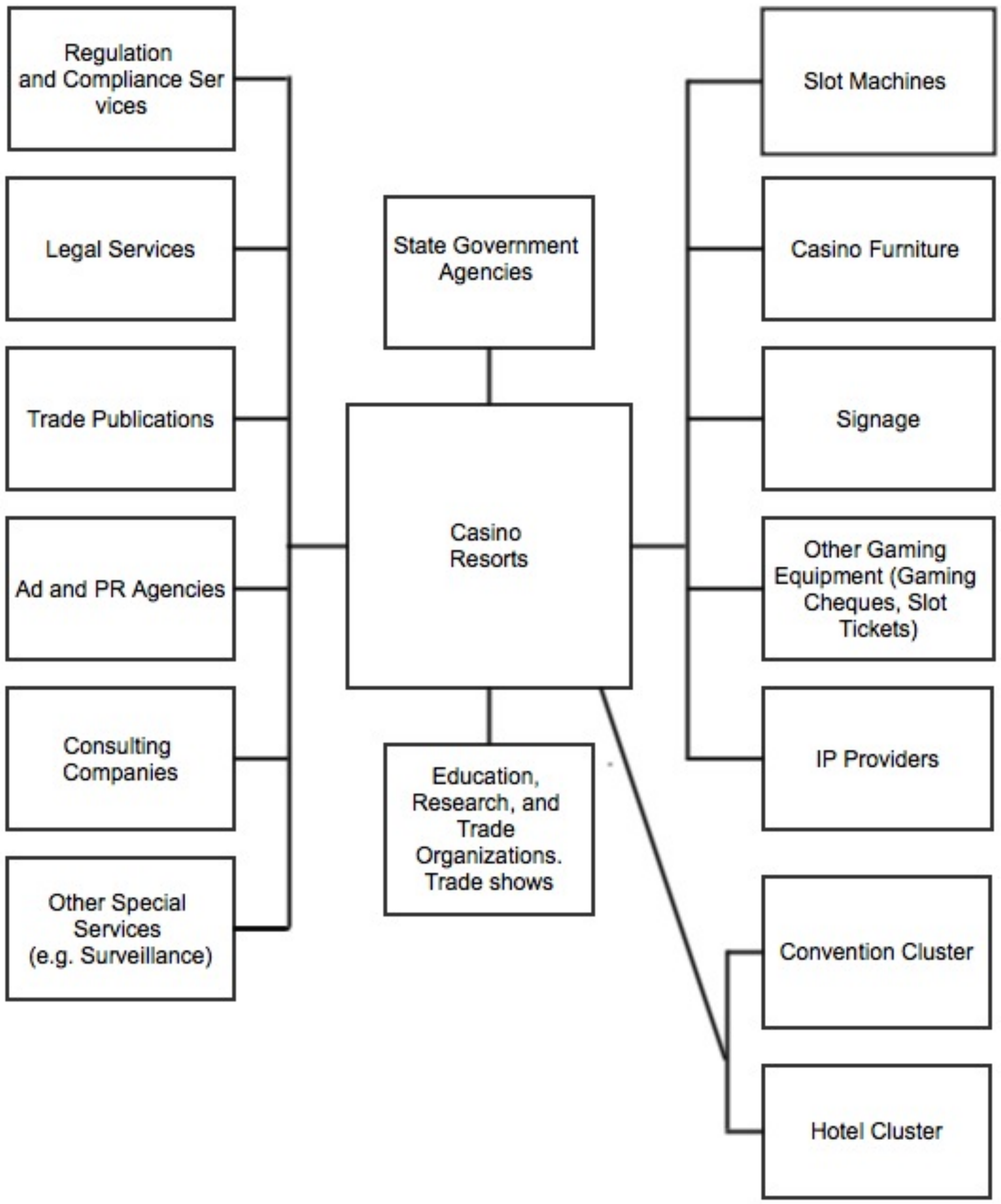

Figure 2. The Las Vegas Gaming Cluster

Casinos

More than 60% of all US Hotels, Casinos, and Resort companies are headquartered in the State of Nevada and particularly, in Las Vegas. The biggest inhabitants of the gaming cluster are international giants Caesars Entertainment Corporation (Caesars), MGM Resorts International

(MGM), Las Vegas Sands Corp. (LVS), and Wynn Resorts (Wynn). All of them are publicly traded (NGCB, 2014) and employ thousands of local residents. There are about a hundred more casinos of various sizes located in the cluster. The biggest concentration of casinos, of course, is on the world famous Las Vegas Strip. However, there are many more in the surrounding areas: downtown Las Vegas, Boulder Strip, North Las Vegas, and Henderson.

Manufacturers

Catering to cluster's casinos are dozens of local manufacturing firms. They supply vital casino equipment such as slot machines, card tables, playing tokens, as well as other essential items. The most notable gaming manufacturers residing in the cluster are slot machine makers International Game Technology (IGT), Bally Technologies, Inc. (Bally), WMS Industries (WMS), Konami Corp. (Konami), and Aristocrat Leisure Limited (Aristocrat). Just like the casinos at the center of the gaming cluster, these companies are publicly traded (NGCB, 2014), operate internationally and employ thousands of people in and around Las Vegas.

Albeit being lesser casino furniture, card, and token manufacturer Gaming Partners International (GPI) is also important to the cluster; lock and gaming cabinetmaker VSR Industries; and signage manufacturer Sunkist Graphics, to name a few.

Intellectual Property Providers

Casino industry is intellectual property driven. It relies on innovators to create slot and table games that appeal to customers. Las Vegas gaming cluster is home to many of those. SHFL Entertainment, a company recently acquired by Bally, is a leading provider of patented card shuffling machines. Aruze Gaming America, Tech Art, and Galaxy Gaming are just few of many other innovative companies located in the cluster that supply the casino industry with gaming devices and licensed table games.

Testing and Compliance Services

BMM Testlabs (BMM) provides services to gaming companies and regulators in more than 400 gaming jurisdictions around the world. Headquartered in Las Vegas, the company employs teams of hardware and software engineers, mathematicians, compliance engineers, and system and communication engineers to test electronic gaming equipment and make sure that they compliant with an existing regulations. Gaming Laboratories International (GLI) is another testing and compliance services giant with clients in more than 450 gaming jurisdictions worldwide. Although it is headquartered in New Jersey, the company boasts one of its biggest testing facilities in Las Vegas.

Legal Services

Las Vegas cluster is also home to some best gaming law firms and minds. Anthony N. Cabot, J.D. from Lewis and Roca LLP Lawyers and Robert D. Faiss, J.D. from Lionel Sawyer & Collins are a couple of world's most renowned gaming lawyers. Lewis and Roca LLP lawyers wrote many books on gaming law and have been asked to testify before the National Gambling Impact Study Commission and the United States Senate and on the topic.

Other Professional Services

Many gaming industry oriented consulting firms, ad agencies, and surveillance companies also reside in the cluster. Facial imaging and recognition technology supplier to surveillance systems Biometrica Systems, LLC and ad agency B&P advertising are just a couple of examples.

Trade Publications

Prominent trade publications and news websites Global Gaming Business, Gaming & Leisure, and Gaming Today are published in the cluster. So is University of Nevada, Las Vegas Gaming Research & Review Journal.

Trade Organizations and Trade Shows

Several important gaming industry's associations are based out of Las Vegas. These include International Association of Gaming Advisors, Association of Gaming Equipment Manufacturers, and Nevada Resort Association. Global Gaming Expo (G2E), industry's biggest and most prominent trade show, is hosted annually in Las Vegas.

Education Institutions and Organizations

Besides niche casino dealer or slot technician schools, Las Vegas is home to University of Nevada Las Vegas (UNLV). University's William F. Harrah College of Hotel Administration is constantly ranked among the top hospitality programs in the country. It offers undergraduate degree and major in gaming management. Currently there is no master's program offered in gaming management anywhere in the country or internationally. UNLV is in the advanced planning stages for a groundbreaking master's program in Gaming Management and will soon become the first school that offers it (Repetti & Jung, 2013).

UNLV's International Gaming Institute (IGI) provides executive education for a gaming industry. Casino executives from around the world come to the cluster to deepen their professional knowledge. IGI also hosts Gambling and Risk Taking Conference, where industry's top minds gather to discuss latest research and trends in the gaming world. UNLV's Center for Gaming Research is a place where the scholarly analysis and public discussion of gambling and gaming issues takes place. The center provides information and engages with the public about gambling and gaming.

Government Institutions

Nevada, just like any other gaming jurisdiction, has a gaming regulatory body. Nevada Gaming Control Board and Gaming Commission regulate gaming in the state of Nevada, including the cluster. In 1931, the state was first to legalize casino gambling in the nation. Over the years, Nevada's regulators have accumulated invaluable experience. It comes as no surprise that many states copied Nevada's regulations. To this day, "Nevada is almost always the first stop for states and countries considering the legalization of gambling or for regulators considering changes in how they oversee the industry" (Velotta, 2011). This, however, is only true to brick and mortar, not online, casino industry.

Complimentary Clusters

Las Vegas is home to two other strong clusters: the hotel and convention cluster. The gaming cluster greatly benefits by linking itself to them. Many Las Vegas gaming establishments boast massive hotels and convention centers. Those that don't, enjoy business spillover from hotel and convention clusters.

Online Gaming Cluster Model

An online gaming cluster model, based on Las Vegas gaming cluster and Porter's (2000) California Wine Cluster models, is proposed. Figure 3 depicts a proposed cluster model. At the center of the cluster are online casinos and poker rooms. Mirroring brick and mortar gaming world, an extensive network of supporting industries, firms, and organizations revolves around the center. These include online casino platform, game software, and affiliate management solutions providers; specialized legal services, compliance services, public relations, and advertising firms; and numerous trade publications and local institutions.

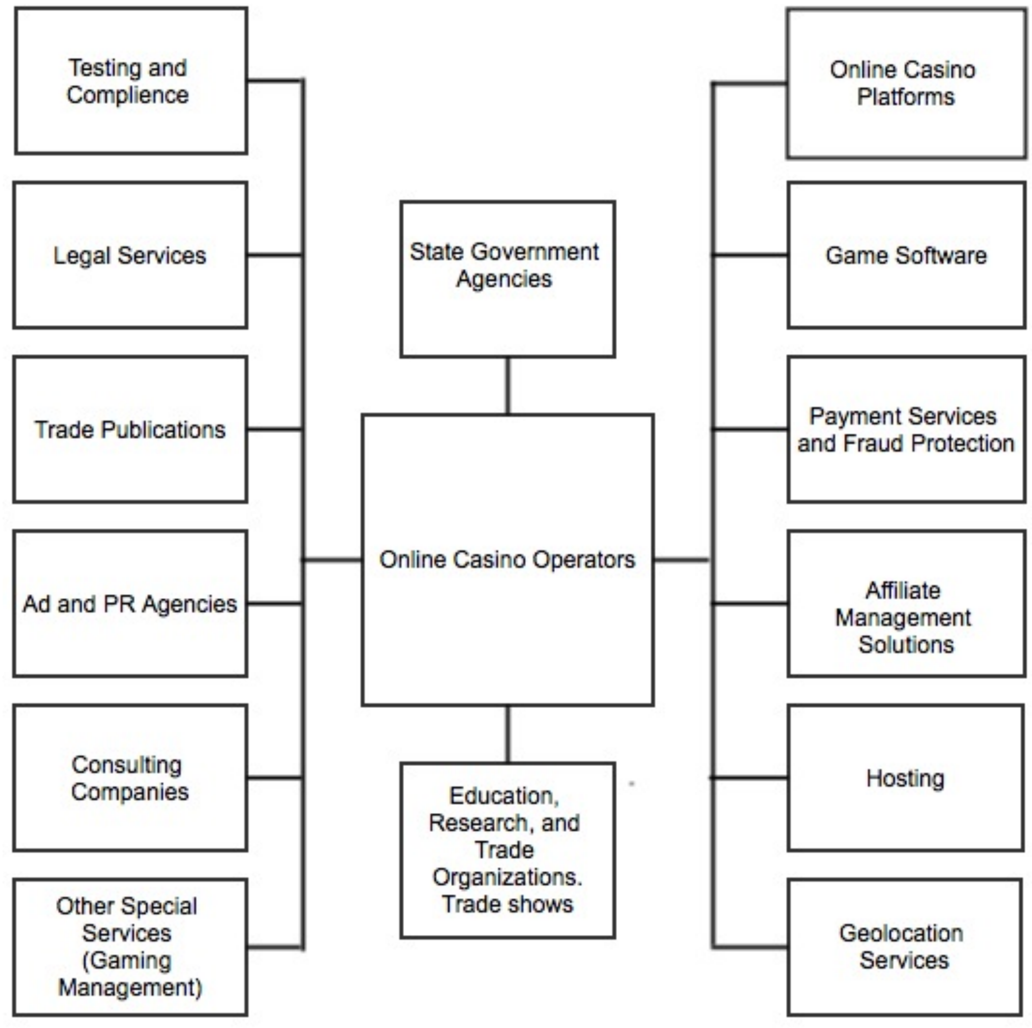

Figure 3. Online Casino Cluster Model

The Gap Analysis

The purpose of this Gap Analysis is to determine what components of an online gaming cluster already exist in the current Las Vegas gaming cluster and what steps would have to be taken in order for Las Vegas to become a global command center of the online gaming industry.

Online Casinos Operators

On April 30, 2013 online gaming was legally reinstated in the US and Nevada. Brick and mortar casino operator, the Station Casinos subsidiary Ultimate Gaming, launched the real

money poker site UltimatePoker.com. Soon after, Caesars Interactive Entertainment, Inc. (CIE), a wholly owned subsidiary of Caesars Entertainment, entered Nevada's market with its World Series of Poker (WSOP) branded online poker room. Although Caesars Entertainment is headquartered in Las Vegas, CIE is not. This leaves the cluster with the sole online gaming operator, Ultimate Gaming.

Last year, the top five online casino operators in the world were bet365 (bet365.com), BetFair (betfair.com), William Hill (wiliamhill.com), 888 Casino (888.com), and Paddy Power (paddypower.com). 888 Casino is headquartered in Gibraltar, which is a British Overseas Territory, the rest are in the UK. BetFair, William Hill, and Paddy Power are headquartered in the city of London.

Online Gaming Specific Services

Online gaming requires industry specific products and services. The most vital ones include online casino platforms, games, and affiliate management solutions. In some parts of Europe, online gaming has been legal for more than a decade. Not coincidentally, most of the industry specific service firms are located there. These include: Microgaming and G2Casino (platforms and games); Continent 8 Technologies (hosting services); Counting House (payment solutions); Income Access (affiliate management solutions); and Semko (SEO).

Many of the above services are also provided by the firms located in the Las Vegas gaming cluster. Bally Technologies provides online gambling platform, IGT and SHFL Entertainment supply games. Las Vegas based Switch Communications provides state of the art data hosting services to many ecommerce giants such as eBay and PayPal, as well as online gaming companies Ultimate Gaming and 888 Holdings. There is also no lack of payment solution and SEO companies in the cluster. Out of online gaming specific services the cluster

only seems to be lacking companies that provide affiliate management solutions. However, Las Vegas is home to GeoComply USA, a leader in geo-location services to the US online gaming industry.

Testing and Compliance Services

iTech Labs, which is a prominent Australia and UK - based test lab, provides services to all regulated online gaming jurisdictions around the world. However, both BMM and GLI, companies with big presence in Las Vegas, are also leaders in an online gaming testing and compliance field.

Legal Services

There is no shortage of law firms consulting online gaming operators on matters related to licensing, compliance, or regulatory risk. A couple of notable ones: WH Partners and RSM Malta, both located in an offshore gaming jurisdiction of Malta. Las Vegas law firms Lionel Sawyer & Collins and Lewis & Roca LLP Lawyers are also authorities on internet gaming law. The later firm's Lead Gaming Counsel and Partner Tony Cabot has authored or edited eight books on gaming law, including The Internet Gambling Report.

Ad Agencies and Business Consulting Firms

The Olympian Group, Game On Marketing, and Capricorn Digital are worldwide leaders in online gaming advertising, marketing, and the public relations fields. They are based in London and offshore gaming jurisdictions. Currently, there are no firms with such expertise in Las Vegas.

Similarly, there are not any strong internet gaming business consulting services in the cluster. Most of them, such as, Income Access and Inoven Altenor, are located abroad.

Publications

London based iGaming Business publishes a number of online gaming related magazines, industry reports and websites. It is the biggest publishing company within the online gaming sector. iGaming Business North America magazine is dedicated to the emerging North American online gaming market. It is published in Las Vegas.

Trade Organizations and Trade Shows

eCOGRA is the online gaming industry's independent standards authority. It oversees fair gaming, player protection and responsible operator conduct. This non-profit organization is located in London. Interactive Gaming Council (IGC) was established to create fair trade guidelines for interactive gaming products and services. Although founded in the US, IGC was later relocated to Vancouver, Canada. The Remote Gambling Association (RGA) in the online gaming industry's lobby. Headquartered in London, the organization represents world's biggest online gaming companies.

Perhaps the biggest online gaming conference is iGaming Super Show this year held in Amsterdam, the Netherlands. ICE Totally Gaming, hosted in London, is a gaming trade show with a big emphasis on online gaming.

In Las Vegas, online gaming has a big presence in the before mentioned G2E trade show. iGaming North America conference, also held there, is becoming increasingly important to the online gaming industry.

Education Institutions and Organizations

To the best of the author's knowledge, no university in the world is offering undergraduate or graduate degrees in online gaming management. UNLV currently does not offer courses in online gaming.

Government Institutions

Nevada Gaming Control Board and Gaming Commission have long been a gold standard of gaming regulators (Velotta, 2011). Recently, they have been assigned a task of regulating internet poker in the state. However, in order to become the first stop for states and countries considering the legalization of online gambling, Nevada needs to have experience in regulating all forms of online gaming, not just poker.

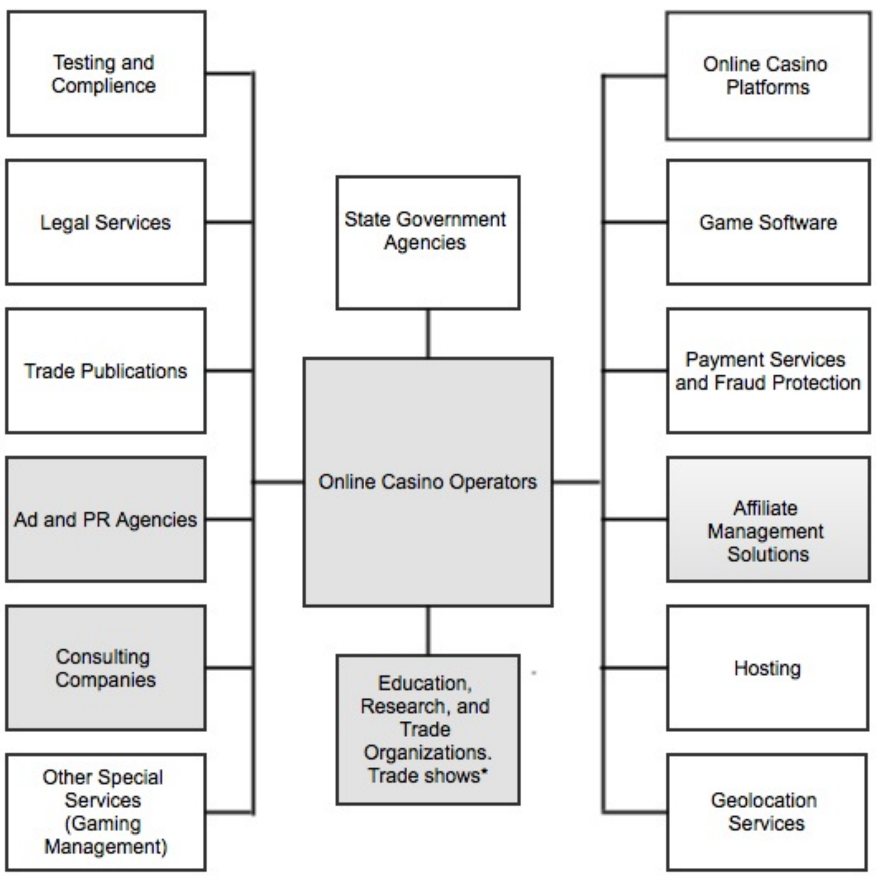

Figure 4. Online Gaming Cluster Gap Analysis

Shaded areas in the above diagram indicate online gaming services lacking in Las Vegas.

*There are two online gaming trade shows in Las Vegas.

The above Gap Analysis revealed that many of the industry segments needed to form an online gaming cluster already have presence in Las Vegas. Online casino platform, game software, payment, hosting, and geo-location services are already provided in Las Vegas. So is testing and compliance, legal, and gaming management services. The city lacks industry specific public relations and consulting firms, as well as online gaming educational research and trade organizations. Most notably, the leading online gaming operators are absent from Las Vegas.

Conclusion

There is clear evidence that clusters are good for their firms, employees, and the larger community. Las Vegas is greatly benefiting from the existing gaming cluster formed around Strip's mega casino-resorts. It is reasonable to believe that online gaming cluster would also be good for the city.

It seems that it would only make sense for Las Vegas to actively pursue establishing online gaming cluster. However, some research suggests that online gaming would cannibalize brick and mortar gaming revenues and thus the interests of an existing gaming cluster have to be protected.

It is admirable that the state is looking out for gaming industry's interests and is restricting that what might hurt it. However, such policy will probably come at a price. According to online gaming research firm H2 Gambling Capital (2013), regulated real money online gaming, excluding lotteries and poker, already generates nearly $30 billion in gross gaming revenue internationally. There is a real chance that in a decade or two online gaming will surpass brick and mortar casino industry in revenues. Thus, for Las Vegas going all-in with brick and mortar and overlooking online gaming could prove to be a losing strategy.

Clustering is more the rule than the exception. Research has found that out of 459 studied US industries, only 13 did not cluster. Thus, if online gaming will not settle in Las Vegas, it will soon find home elsewhere. At the moment, New Jersey, the state where online gambling is in a full swing, is a major contender for the spot. This year, two online gaming bills were introduced in California. Some state's lawmakers believe that there is still a chance for online gaming legislation to pass this year (Kredell, 2014). California, which is the most populous state in America, will definitely capture online gaming industry's attention.

Arguably, nobody emphasized the importance of clusters more than the renown Harvard economist Michael E. Porter. In Porter (2000) he stated that "The importance of clusters suggests new roles for government at the federal, state, and local levels. In the global economy, sound macroeconomic policies are necessary but not sufficient. Government's more decisive and inevitable influences are at the microeconomic level. Among them, removing obstacles to the growth and upgrading of existing and emerging clusters takes on a priority. Clusters are a driving force in increasing exports and are magnets for attracting foreign investment. Clusters also represent an important forum in which new types of dialogue can and must take place among companies, government agencies, and institutions such as schools, universities, and public utilities."

Although the Gap Analysis revealed that many of the industry segments needed to form an online gaming cluster already have presence in Las Vegas, the most important component, leading online gaming operators, is missing. It is very doubtful that without them Las Vegas will become a global command center of the online gaming industry. They are the center around which the rest of the industry revolves. In London, home to thee out of five biggest online gaming operators, many other industry participants are also co-located.

Without a push from the state and the city, it is unlikely that major online casino operators will come to Las Vegas. However, if the policy makers would decide that pursuing an online gaming cluster is important to city's future, this could change. If forty or so million annual Las Vegas visitors were allowed to play Blackjack, Roulette, or Slots on their laptops, smart-phones and tablets, the market would become much more attractive to the online gaming leaders. Nevada could also incentivize online gaming operators to come to Las Vegas by giving them tax breaks. Offshore gaming jurisdictions, such as, the island of Curacao and the Isle of Man in the Irish Sea, have been doing it all along. Gaming taxes there are as low as two percent. Nevada, for example, could tax all local transactions at a regular rate and all foreign transactions at the rate on par with offshore jurisdictions. It is likely that such initiatives would gradually make Las Vegas a command center of this very promising online gaming industry and benefit the city for generations to come.

Suggestions for Further Research

Reviewed literature suggests that online gaming cannibalized commercial casino revenues and if all forms of online gaming were legalized in Nevada, some local brick – and - mortar gaming related businesses and residents would suffer. On the other had, there is clear evidence that forgoing an opportunity to establish an online gaming cluster would also hurt the state. It is important to quantify the benefits and losses under each scenario. It is also important to examine whether there is sufficient evidence to suggest that online gaming cannibalized commercial casino revenues.

REFERENCES

Audretsch, D. B., Feldman, M. P. (1996). R&D spillovers and the geography of innovation. *American Economic Review*, *86*, pp. 630-40.

Baptista, R. M. L. N., Swann, G. M. P. (1998). Do firms in clusters innovate more? *Research Policy*, *27*, pp. 527-42.

Bernhard, B. J., Ahlgren, M., (2011). Las Vegas and Houston: Global command centers in the sun belt. *UNLV Gaming Research & Review Journal, 15*(2), 5-15.

Census.gov (2014). State and county quick facts. Clark County, Nevada. *Census.gov.* Retrieved from http://www.census.gov

Christensen, T. A., Thomsen, M. S., & Lomholt, H. H. (2011). 24 proofs of Cluster Excellence - Successful Stories from Clusters in Northern Europe. *The Danish Agency for Science, Technology and Innovation.* Retrieved from http://ufm.dk/en/publications/2011/24-proofs-of-cluster-excellence-successful-stories-from-clusters-in-northern-europe

Delgado, M., Porter, M. E., & Stern, S. (2010). Clusters and entrepreneurship. *Journal of Economic Geography*, *10*(4), 495-518.

Delgado, M., Porter, M. E., & Stern, S. (2012). Clusters, convergence, and economic performance (No. w18250). *National Bureau of Economic Research.*

Denison, D. (2012). Delaware to allow online gambling.*Usatoday.com.* Retrieved from http://usatoday30.usatoday.com/news/nation/story/2012-06-28/delaware-online-gambling/55897914/1

Division of Gaming Enforcement (2014). Information on internet gaming. *Nj.gov.* Retrieved from http://www.nj.gov/oag/ge

Enright, M. (1993). The geographic scope of competitive advantage. In E. Dirven, J. Groenewegen, & S. van Hoof (Eds.), *Stuck in the region? Changing scales of regional identity,* pp. 87-102. Utrecht: Netherlands Geographical Studies.

Garlitos, K. (2013). Online gambling earning up to $30 billion globally.*Calvinayre.com.* Retrieved from http://calvinayre.com/2013/04/02/business/online-gambling-earning-up-to-30-billion-globally/

Glaeser, E. L., & Gottlieb, J. D. (2009). The wealth of cities: Agglomeration economies and spatial equilibrium in the United States (No. w14806). *National Bureau of Economic Research.*

Grochowski, J. (2013). Re-shuffle. *Casinojournal.com* Retrieved from http://www.casinojournal.com

Helsely, R. W., & Strange, W. C. (2002). Innovation and input sharing. *Journal of Urban*

Economics, *51*(1), pp. 22–45.

Henderson, J. V. (1986). Efficiency of resource usage and city size. *Journal of Urban Economics*, *19*, pp. 47-70.

Innovation Index Mapping Tool (2014). Retrieved from http://www.statsamerica.org.

Kredell, M. (2014). California Assemblyman: Still a Chance for Online Poker in 2014. Pokernews.com. Retrieved from http://www.pokernews.com/news/2014/02/california-assemblyman-still-a-chance-for-online-poker-17631.htm

Krugman, P. (1991). Geography and Trade. *MIT Press,* Cambridge.

Madsen, E. S., Smith, V., & Dilling-Hansen, M. (2003). Industrial clusters, firm location, and productivity. Some Empirical Evidence for Danish Firms. Working Papers, University of Aarhus, Aarhus School of Business, Department of Economics. Retrieved from http://www.hha.dk/nat/wper/03-26_esmvs.pdf

Maine, E. M., Shapiro, D. M., Vining, A. R. (2008). The role of clustering in the growth of new technology-based firms. *Small Business Economics, 34*(2), 127-146.

Money.cnn.com (2012). States that dominate. *Money.cnn.com.* Retrieved from http://money.cnn.com/magazines/fortune/fortune500/2012/industry-hot-spots/

NGCB (2014). Statistics & Publications. *Nevada State Gaming Control Board Gaming Commission.* Retrieved from http://gaming.nv.gov/index.aspx?page=142

Philander (2011). The effect of online gaming on commercial casino revenue. *UNLV Research & Review Journal*, *15*(2), pp. 23–34.

Philander, K., & Fiedler, I. (2012). Online poker in North America: Empirical evidence on its complementary effect on the offline gambling market. *Gaming Law Review and Economics*, *16*(7-8), pp. 415-423.

Porter, M. E. (1990). The competitive advantage of nations. *New York: Free Press*.

Porter, M. E. (2000). Location, competition, and economic development: local clusters in a global economy. *Economic Development Quarterly*, *14*(1), pp. 15-34.

Porter, M. E. (2003). The economic performance of regions. *Regional studies*, *37*(6-7), 545-546.

Productivity and Employment Index Mapping Tool (2014). Retrieved from http://www.statsamerica.org.

Rauch, James E. (1993). "Does History Matter Only When It Matters Little? The Case of City-Industry Location." *Quarterly Journal of Economics*, *108*(3), 843–67.

Repetti, T. & Jung, S. (2013). Building the first gaming master's program: An industry Perspective 1.*UNLV Gaming Research & Review Journal, 17*(2), 63-79.

Seung, C. K., & Harris, T. R. (2000). Impacts of reduced gaming exports on the economy of Nevada. *Review of Urban & Regional Development Studies*, *12*(2), 109-118.

Statsamerica.org (2014). Innovation in American Regions. Retrieved from http://www.statsamerica.org.

Swann, P. (1992). The Dynamics of Industrial Clusters, *Oxford Press,* Oxford.

The Monitor's Editorial Board (2013). A dubious drive to legalize online gambling.*Csmonitor.com*. Retrieved from http://www.csmonitor.com/Commentary/the-monitors-view/2013/0718/A-dubious-drive-to-legalize-online-gambling).

Vardi, N. (2011). U.S. Government Moves To Shut Down World's Biggest Online Poker Companies. *Forbes.com.* Retrieved from http://www.forbes.com/sites/nathanvardi/2011/04/15/founders-of-worlds-biggest- online-poker-companies-indicted/

Velotta, R. (2011). Is Nevada still the national leader in gaming regulation?*Vegasinc.com*. Retrieved from http://www.vegasinc.com/business/gaming/2011/dec/19/nevada-still-national-leader-gaming-regulation/