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SOUTHERN NEVADA

TARGET INDUSTRY VALIDATION STUDY



LAS VEGAS
GLOBAL ECONOMIC ALLIANCE

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In 2011, the State of Nevada commissioned a study led by Brookings, Brookings Mountain West, and SRI International to inform economic development planning efforts across the state, titled *Unify/Regionalize/Diversify: An Economic Development Agenda for Nevada*. While the study served as the foundation for statewide economic diversification following the Great Recession, much has changed in the six years since this report was released. Nevada has recovered and thrived in many different ways, including through the adoption of a regional approach to economic development that is guided by a distinct set of seven statewide target industries, carefully cultivated to ensure the state would appropriately diversify in ways that both met existing workforce and economic demand while positioning the state for future growth opportunities.

In 2017, Southern Nevada is ready to remap its future – not through a radical shift in philosophy or structure, but a refinement in focus on the opportunities that exist to pursue regional growth. The current state in Southern Nevada today is much different than that of 2011. The region has

experienced success in diversification and moving toward a regional economy focused on innovation, technology, and emerging subsectors where growth can most acutely impact the region’s success over the course of the next five years.

Over the past several years, Southern Nevada – led by the Las Vegas Global Economic Alliance (LVGEA) – has worked in tandem with state-level economic development officials and local municipal partners to pursue economic growth around the seven distinct target industries based on these 2011 planning efforts:

- Tourism, Gaming, and Entertainment
- Health and Medical Services
- Business IT Ecosystems
- Clean Energy
- Mining, Materials, and Manufacturing
- Logistics and Operations
- Aerospace and Defense

In the time since those recommendations were adopted by the State of Nevada as target industries to guide statewide economic development efforts, LVGEA has slightly adapted some industries to be more consistent with Southern Nevada assets and where the region's assets are best positioned to realize growth and success; for example, Mining, Materials, and Manufacturing target industry was replaced in LVGEA's 2016 Comprehensive Economic Development Strategy (CEDs) by Global Finance, Banking, and Business Services, while the regional Logistics, Manufacturing, and Assembly target industry incorporates the manufacturing component of this statewide industry cluster as well as Logistics and Operations. Through these incremental modifications to better align targets with LVGEA's vision for economic growth in Southern Nevada, the following target industry mix was subsequently established as part of this regional 2016 CEDs planning process:

- Gaming, Tourism, and Conventions
- Logistics, Manufacturing, and Assembly
- Health Care and Life Sciences
- Business and IT Ecosystems
- Clean Technology
- Defense and Unmanned Aerial Systems
- Global Finance, Banking, and Business Services

Through efforts led by LVGEA, with support from management and strategy consulting firm Emergent Method, this regional target industry mix is again poised to shift based on a validation of target industries for the Southern Nevada region with an emphasis on identifying emerging opportunities within each target; that is, categories where foundational, differentiated assets exist to accommodate rapid growth in areas yet to fully mature within an industry. Furthermore, specific opportunities within these industries must be ones that an economic development organization can most readily influence to achieve growth. For example, as a base industry, health care is not typically considered to be an economic driver in and of itself; nearly every community has some minimum level of healthcare assets that by default create jobs and promote marketplace activity.

In order to develop a focus on target industries capable of maintaining success while accelerating growth over the next five years, it is important to understand how the current target industry mix has performed over time. This analysis of past target industry performance offers several key insights:

- Gaming, tourism, and conventions continues to be a dominant industry in the region with growth in this large cluster creating many jobs, albeit at a lower rate of growth than national trends for the sector.
- Logistics, manufacturing, and assembly remains undersized in the region, but has shown an uptick in growth in recent years after experiencing a significant reduction in activity from the Great Recession.
- The health care and life sciences industry is small relative to national trends, but has shown rapid growth in recent years, helping to close some of that gap.
- Business and IT ecosystems is a small but important industry regionally, demonstrating robust growth in terms of creating jobs and supporting new businesses.
- Clean technology is a niche industry within research and manufacturing, with limited anecdotal evidence of job creation in recent years.
- Defense and unmanned aerial systems continues to be a fledgling industry, but early successes of companies in the region demonstrate progress in this area despite the slow growth of the industry overall.
- While "global" components of finance, banking, and business services can be tracked only anecdotally, the industry as a whole has suffered in terms of jobs and firm counts since the great recession and not yet shown signs of a rebound in the region.

These trends in industry performance provide a basis for where modifications to Southern Nevada's target industry mix should be considered; however, past performance is not the only indicator of future growth and success. Employment trends relative to national averages, momentum in new firm activity in the region, national and global economic trends, and other data points serve as additional inputs into identifying growth opportunities where area assets can be most effectively utilized in efforts to grow the regional economy while informing policy and workforce planning to meet anticipated demand.

Additionally, the term "target industry" inherently communicates the manner in which this type of economic growth should be pursued – by focusing on specific areas where economic development agencies can positively influence growth, or preserve current market positioning. For example, the size and stature of Southern Nevada's gaming, tourism, and conventions industry cluster, including its entrenched position in the regional economy, is such that it requires very little support from an economic development standpoint to continue reaching strong levels of performance. However, categories exist within this cluster that feature opportunities for rapid growth due to a shifting regulatory environment, such as in eSports, or those where the industry stands to be further buoyed through the introduction of innovation and technology, such as in security applications for gaming. This philosophy used to guide the establishment of this recommended industry mix, and the focus for each, is directly tied to areas LVGEA and its partners can directly influence, including planning for workforce, community development, and advocacy. Finally, an industry or industry cluster should be pursued not only because it represents isolated success for an area or region, but because it features categories that feature alignment with multiple target, adjacent industries that stand to benefit from successful growth (e.g., security applications in both gaming and technology).

It is through this analysis, guided by a strengths, weaknesses, opportunities, and threats (SWOT) framework, that the following target industry mix is recommended for the Southern Nevada region as areas for LVGEA and its partners to orient economic development strategies around and in support of:

BUSINESS HEADQUARTERS AND SERVICES

- Regional headquarters, business process operations, professional, and technical services

EMERGING TECHNOLOGY

- Internet of Things applications, data warehousing, computer programming, and system design

LOGISTICS, MANUFACTURING, AND SUPPLY CHAIN MANAGEMENT

- Advanced manufacturing, regional connectivity, logistics, and process engineering

AUTONOMOUS SYSTEMS

- Terrestrial autonomous system applications and robotics engineering

FINANCE, BANKING, AND INSURANCE SERVICES

- Unique regulatory environment to promote industrial banking, third-party administration of insurance, and funds

HEALTH CARE SERVICES AND MEDICAL EDUCATION

- Nursing and residential care services, telemedicine, and destination specialty services

GAMING, TOURISM, AND CONVENTIONS

- Competitive electronic gaming, trade shows aligned with target industries, security, and related technology applications



While work still remains for LVGEA and its partners to pursue – such as further analyzing state-level incentives and local, state, or federal policies that can adversely or positively facilitate growth across these redefined target industries – these industry targets are structured to withstand potential negative impacts from external threats while positioning the region to fully realize the tremendous growth opportunities that exist in the coming years. Southern Nevada is indeed at a crossroads yet again; however, today's crossroads are not a need to diversify immediately following a painful recession. Instead, the region stands ready to embark on a new path of robust growth, utilizing a more targeted focus on emerging opportunities while preserving the core components of the regional economy that have driven – and will continue to drive – the economy for years to come.

INTRO

In 2011, the State of Nevada commissioned a study led by Brookings, Brookings Mountain West, and SRI International (Brookings-SRI) to help inform economic development planning efforts. The results of that study are captured in the Unify/Regionalize/Diversify: An Economic Development Agenda for Nevada report submitted by the Brookings-SRI team. While this effort clearly addressed a set of distinct needs on a statewide level, particularly in outlining target industries the state and its regions should adopt relative to economic development priorities, much has changed in the years since this agenda was first adopted and put in place. In particular, the rapid growth of technology and new ways of thinking that underlie many industries have either accelerated or re-defined core components of existing target industries on both a global and regional level, while the expected growth and commercialization of other targets have not yet reached their full potential – offering an opportunity to assess that growth path and shift targets accordingly. Today’s environment is also distinctly different in terms of the drivers behind various target industries and economic development strategies. Since 2011, Nevadans and economic development agencies have worked successfully to accomplish all three pillars outlined in this economic agenda, the need for which was dramatically influenced by the Great Recession and challenged the state’s traditional growth model. The establishment of the Las Vegas Global Economic Alliance (LVGEA) was a direct byproduct of this restructuring of statewide economic development efforts into regional economic development entities.

Today, LVGEA serves a critical role within this structure as the economic and community development resource for Southern Nevada. Through the leadership of the LVGEA Board of Directors and staff, and in collaboration with the Governor’s Office of Economic Development (GOED) and the region’s local government and economic development agencies, diversification has been a hallmark of economic development since these 2011 recommendations were put in place – and Southern Nevada has prospered from it. Most importantly, diversification away from consumption sectors and toward innovation has created a new foundation for sustained economic success that provides momentum for additional innovation and adoption of new ways of thinking to further diversify the regional economy through facilitating the growth of underlying, cross-industry emerging subsectors.

Furthermore, while many components of the 2011 Unify/Regionalize/Diversify effort were focused around adopting a regional approach and framework for economic development with some degree of alignment at the state level, additional consideration should be given to the unique assets and differentiated characteristics of the Southern Nevada region relative to that of the entire state. Developing a rich understanding of regional assets supports a more targeted pursuit of economic growth opportunities – all of which are guided through strong interagency collaboration among local, regional and state-level economic development agencies.

To address these needs, LVGEA initiated an effort in late 2016 to conduct a target industry validation study focused on assessing the findings of the region's current target industries; considering other relevant data inputs in determining how statewide target industries align with Southern Nevada's regional strengths and opportunities in today's environment; and how the region's target industries should be prioritized. It is important to note that these assessment activities were oriented around validating the set of target industries as outlined within LVGEA's 2016 Comprehensive Economic Development Strategy (CEDS), which took the first step in regionalizing statewide target industries by elevating Global Finance, Banking, and Business Services as a target industry as opposed to Mining, Materials, and Manufacturing, which was included as target industry recommendation in 2011 but carries far more economic development opportunity in and relevance to the northern part of Nevada. LVGEA engaged Emergent Method, a Louisiana-based management and strategy consulting firm, to conduct this study and ensure an objective, out-of-market assessment to guide how or if the region's target industries may need to shift to best position Southern Nevada for sustained success over the course of the next five years.

The corresponding recommendations resulting from this target industry validation effort provide a blueprint for any re-positioning that may be necessary in the coming years. Most importantly, these shifts are designed to place less of an emphasis on industries that will continue to perform well without a prominent role served by economic development agencies, such as an overarching health care category, and instead establish an industry mix to guide economic development efforts where work must be done to fully realize an industry's full growth potential. That is the fundamental essence of this 2017 Target Industry Validation Study – establishing a renewed sense of focus on regional growth and opportunity in a post-recession era, as opposed to market stabilization as a function of economic development – and using a target industry focus to guide how that can be fully achieved in Southern Nevada.

**“FOCUSED BY CHALLENGE, NEVADANS SEEM
READY TO REACH FOR A NEW FUTURE.”**

- UNIFY/REGIONALIZE/DIVERSIFY: AN ECONOMIC DEVELOPMENT AGENDA FOR NEVADA, 2011

METHODOLOGY

To support this target industry validation study and the resulting recommendations outlined within this report, a number of qualitative and quantitative data inputs were utilized and analyzed. Because this study was conducted to validate the region's target industry mix as opposed to conducting a comprehensive target industry study, this process focused on a detailed review of existing targets and closely related industries. While data and inputs related to other industries were considered, that effort stopped short of a full review of all potential economic development opportunities, similar to what would have been done in a comprehensive target industry study like the 2011 study Brookings-SRI conducted on behalf of the State of Nevada. An intentional focus was placed on utilizing existing, foundational data as a baseline for analysis and validation efforts – beginning with the 2011 Unify/Regionalize/Diversify Economic Agenda for Nevada and including more recent efforts to regionalize this agenda around the current state environment for Southern Nevada, such as LVGEA's 2016 CEDS. It is through this regional CEDS planning process that the mining-focused industry cluster, formerly included as a statewide target industry, shifted to one focused on global finance, banking, and business services in order to better align regional targets with growth opportunities that exist in the southern part of the state.

More than 40 individual and small group interviews provided a basis for qualitative perspectives on growth opportunities, with representatives of the following organizations providing integral input and feedback to guide these validation efforts:

- Anthem Blue Cross and Blue Shield
- Bank of Nevada
- Boulder City
- City of Henderson
- City of Las Vegas
- City of Mesquite
- City of North Las Vegas
- Clark County
- College of Southern Nevada
- Governor's Office of Economic Development
- Greenberg Traurig
- Green Valley Grocery
- Guinn Center for Policy Priorities
- Las Vegas Global Economic Alliance
- Las Vegas Convention and Visitors Authority
- Laughlin
- LV HEALS
- Manpower Inc. of Southern Nevada
- Marnell Properties
- National Association of Industrial Banks
- Nevada Financial Institutions Division
- Nevada State College
- NV Energy
- NV Industry Excellence
- NV Institute for Autonomous Systems
- Southern Nevada Water Authority
- University of Nevada, Las Vegas
- Verascan, Inc.
- WaterStart

Additionally, a number of data inputs were utilized to assess past performance of existing targets and to help identify growth opportunities in those and related industries. This featured an analysis of historical industry performance data, including an assessment of job and new business growth or decline across existing target industries over the past 5-to-10 years, which served as an input to informing this target industry validation effort, with additional analysis conducted to identify overlap across targets, especially within emerging components of target industries. All sources are cited throughout this report within the context of how each source was used to support the validation assessment, including but not limited to:

- Supporting research and data utilized as part of the 2011 Brookings-SRI report;
- Background research and information on statewide, regional, and local economic development and corporate recruitment strategies;
- Current and historical Southern Nevada market data such as employment and firm counts from the U.S. Bureau of Labor Statistics;
- Occupational forecast and workforce inventory data, including a review of educational or training programs producing new workforce entrants in the region;
- Industry-focused white papers, economic impact studies or analysis, and other third-party research conducted to identify national or global market growth potential across various industries; and
- Recent research, white papers, and/or reports issued by regional, state, or federal agencies focused on economic or employment trends with application or relevance to the Southern Nevada market.

To support this research and findings generated from it, a strengths, weaknesses, opportunities, and threats (SWOT) framework was utilized to identify economic growth opportunities for the region, particularly as it relates to opportunities to leverage assets and projected industry trends toward a defined set of targets. This SWOT analysis served as a basis for re-assessing industry alignment with the existing target industry mix, including validating where current targets had strong alignment with area strengths and identifying areas where targets should be adjusted to better align with emerging opportunities over the course of the next five years. Additionally, through regional asset mapping, private sector market conditions and current market participant perspectives were correlated to higher education programs or training resources – as well as national and global industry trends – to explore opportunities for innovation across each of these inputs for Southern Nevada.

The resulting recommendations, outlined within the Recommended Target Industry Mix: 2017-2021 section of this report, were then developed to identify industries with the greatest growth potential for the region by not only building on current strengths, but specifically those in which targeted economic development efforts can most effectively capitalize on growth opportunities.

REVIEW OF PAST PERFORMANCE

A critical first step in this target industry validation study involved reviewing the performance of existing targets to determine how much progress has been made for each target, particularly in terms of how employment and firm activity have helped to diversify the regional economy. While some of the state and region's target industries have performed admirably over time, and in some cases outperformed expectations, others have yet to achieve their full growth potential in the region for one reason or another. These reasons, and the basis for potentially shifting an industry's focus to opportunities with more significant growth potential in the coming years, are further explored in greater depth within the Recommended Target Industry Mix: 2017-2021 section of this report.

This review of target industry past performance also considers regional growth and trends related to those of the nation, helping to further understand both the size and performance of industries with the region (and thus their relative importance to the regional economy) and how these same industries compare to national trends. To support this analysis, location quotients were calculated for each existing target industry cluster using 2015 data from the Quarterly Census of Employment and Wages. The location quotient divides the percent of employment for an industry in the region by the percent of employment for that industry nationally to provide a basic reference point showing how prominent an industry is in the region compared to national trends. The past performance review also focuses on trends in employment across target industries and subsectors between 2008 and 2015 and is measured as a ratio depicting cumulative growth relative to 2008 employment figures (e.g., a ratio of 1.15 would indicate 15% growth). As a second input, this review of past performance includes an industry-level analysis of growth in the number of firms from 2008 to 2015, which is similarly benchmarked against a 2008 baseline to depict cumulative growth.

Key findings resulting from this analysis of past target industry performance include:

- Gaming, tourism, and conventions continues to be a dominant industry in the region with growth in this large cluster creating many jobs, albeit at a lower rate of growth than national trends for the sector.
- Logistics, manufacturing, and assembly remains undersized in the region, but has shown an uptick in growth in recent years after experiencing a significant reduction in activity from the Great Recession.
- The health care and life sciences industry is small relative to national trends, but has shown rapid growth in recent years helping to close some of that gap.
- Business and IT ecosystems is a small but important industry regionally, demonstrating robust growth in terms of creating jobs and supporting new businesses.
- Clean technology is a niche industry within research and manufacturing, with limited anecdotal evidence of job creation in recent years.
- Defense and unmanned aerial systems continues to be a fledgling industry, but early successes of companies in the region demonstrate progress in this area despite the slow growth of the industry overall.
- While “global” components of finance, banking and business services can be tracked only anecdotally, the industry as a whole has suffered in terms of jobs and firm counts since the great recession and not yet shown signs of a rebound in the region.

It should be noted that, in order to segment the necessary sectors used to track and measure past performance, North American Industry Classification System (NAICS) codes were utilized. According to the U.S. Census Bureau, NAICS codes serve as “the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.” However, some existing target industries such as clean technology are represented by definitions with very focused niches and thus minimal data exists to track changes in employment or number of firms over time. In these instances, other data were utilized to identify and measure prior performance as much as possible.

PAST PERFORMANCE

Gaming, Tourism, and Conventions

Gaming, tourism, and conventions have long been, and will continue to be, primary drivers of the region's physical and economic landscape. This industry cluster includes jobs in performing arts and spectator sports; amusements, gambling, and recreation; accommodation; and food services and drinking places. Combined, these four industries employ 281,890 workers, representing 35% of the region's employment and help drive economic activity across many other supporting industries. Nationally, these same industries represent only 12.6% of the economy, which gives this industry cluster a location quotient of 2.7, or well over twice as much employment created by gaming, tourism, and conventions than is typical in the U.S.

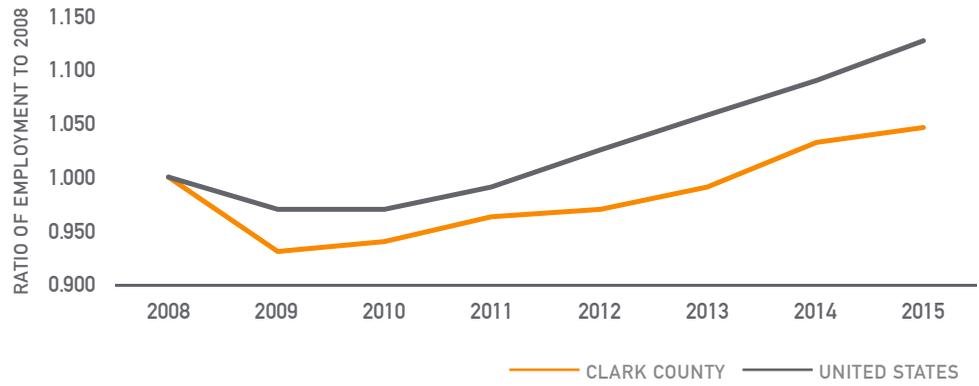
A review of historical data shows that employment in this already large sector has grown more slowly since 2008 than national trends. The Great Recession took a toll on tourism, as family incomes decreased and spending on leisure travel similarly declined – an impact that is apparent both nationally and in the Southern Nevada region. National data shows a more modest downturn in 2009 because a greater share of activities in these industries are supported by local spending, a driver behind national trends that is somewhat distinct from that of Southern Nevada due to the ratio of residents to annual visitors. However, after shedding 18,000 jobs in

the region between 2008 and 2009, the sector began to rebound and has since grown steadily. While total employment has not fully caught up with the national trend, the sheer size of this industry demonstrates that it has added over 30,000 jobs directly to the region's economy between the low point of 2009 and 2015.

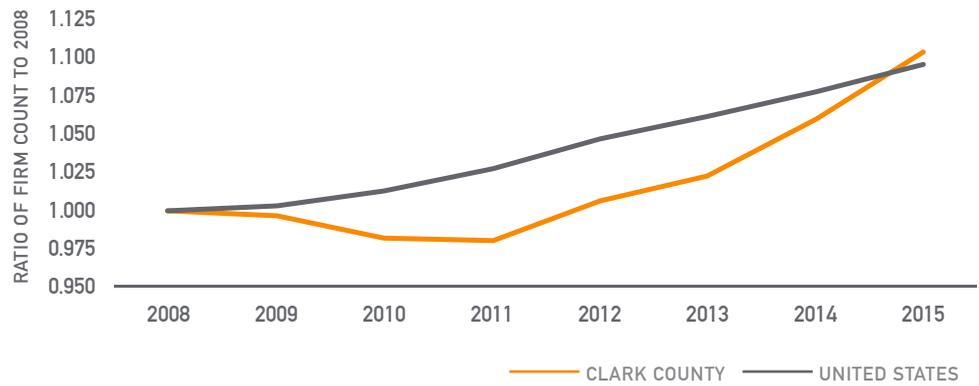
Data on the number of firms operating in this industry reveal a similar pattern of decline due to recession, followed by a rebound and return to long term growth. While employment began to recover by 2010, the total number of firms continued to lag, with roughly 100 fewer companies operating in this area in 2011 compared to 2008. This pattern suggests more turnover and reorganization within the industry than is apparent in the overall employment trend. More recently, the number of firms in this sector has grown more rapidly in the Southern Nevada area than the national trend, with more than 600 new firms realized between 2011 and 2015, representing 12.5% growth in the number of businesses. As gaming, tourism, and conventions cluster represents a highly competitive space, this growth in new firms represents positive momentum for an already strong, outperforming cluster – signaling the continued opportunities for sustained growth via innovation and development of new niches.

GAMING, TOURISM, AND CONVENTIONS

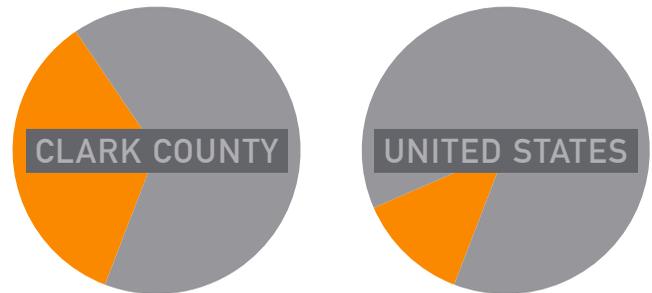
CUMULATIVE GROWTH IN EMPLOYMENT



CUMULATIVE GROWTH IN FIRMS



EMPLOYMENT SHARE



2015 LOCATION QUOTIENT: 2.7

PAST PERFORMANCE

Logistics, Manufacturing, and Assembly

Manufacturing is often a top industry for economic development efforts due to the large economic impact multiplier effect of jobs created through new business activity and the site selection process, in which companies typically investigate potential sites beyond their current geographic footprint before making a large capital investment in new facilities. An important part of this large multiplier effect is closely related cluster of activities in logistics. With transportation assets in the region – including McCarran International Airport – and proximity to Southern California, Arizona, and Utah, Southern Nevada has included logistics as a direct component of this target area and sought to develop that subsector in its own right.

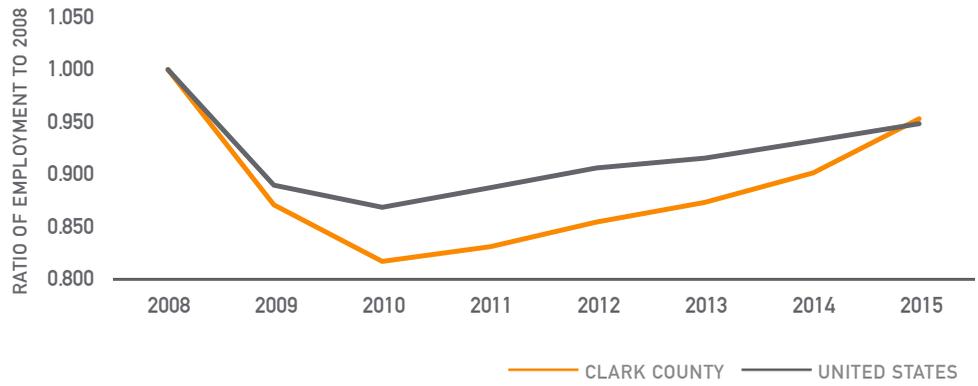
Manufacturers were impacted heavily during the Great Recession, with employment dropping 16.5% nationally between 2008 and 2010. However, the impact was more severe in Southern Nevada, with manufacturers experiencing reduced head counts by 30% over the same period. Both locally and nationally, employment has started to grow slowly, but has still not reached pre-recession levels. This is also true of the closely related logistics activities including transportation and warehousing. However, employment growth has accelerated recently, putting the region slightly above the national trend in terms of job recovery relative to

2008 levels. However, it is important to note that the sector continues to be undersized, with only 5.0% of regional employment in manufacturing and logistics, including air and truck transportation and warehousing. This compares to 13.3% nationally, giving the region a location quotient of 0.4.

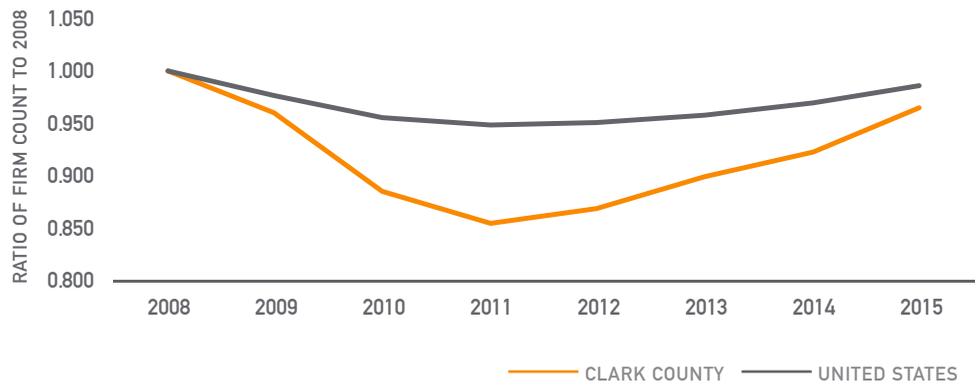
Recent trends in the number of firms operating in this sector similarly demonstrate an illustrative history. While employment took a dramatic hit, but began to rebound fairly quickly, the number of firms continued to drop for an extended period of time and only recently has begun to recover. In any downturn, businesses reassess their processes and cost structure to identify new efficiencies. This is especially true for manufacturers and, since the most recent recession, many such companies have worked to implement new processes including increased use of automation. The recession also led to a change in the mix of manufacturers with a reduction of less efficient companies and new, more efficient manufacturers popping up to compete. While the number of Southern Nevada manufacturing firms bottomed out in 2011, 16.0% down from the 2008 level, it has begun a strong rebound and is now growing more rapidly than the national trend.

LOGISTICS, MANUFACTURING, AND ASSEMBLY

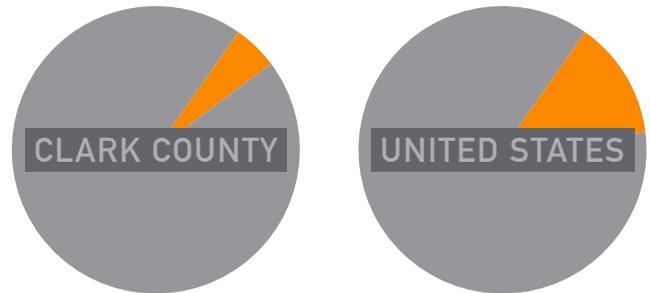
CUMULATIVE GROWTH IN EMPLOYMENT



CUMULATIVE GROWTH IN FIRMS



EMPLOYMENT SHARE



2015 LOCATION QUOTIENT:
0.4

PAST PERFORMANCE

Health Care and Life Sciences

Health care is a critical support industry in any regional economy. In a tourist destination like Southern Nevada, health care also has potential to attract dollars from outside of the region to fill a more traditional economic development role. Health care has served as a target industry for the region in part because of the need to grow the region's workforce to accommodate anticipated growth – both for serving the local community and improving the attractiveness of the region to support other economic development initiatives. However, LVGEA's 2016 CEDS also highlights the value in helping to grow the region's healthcare workforce in a way that helps lay the foundation for a longer-term strategy promoting medical tourism. Moreover, the area's medical centers of excellence have been seen as a way to develop new opportunities related to research and development in life sciences.

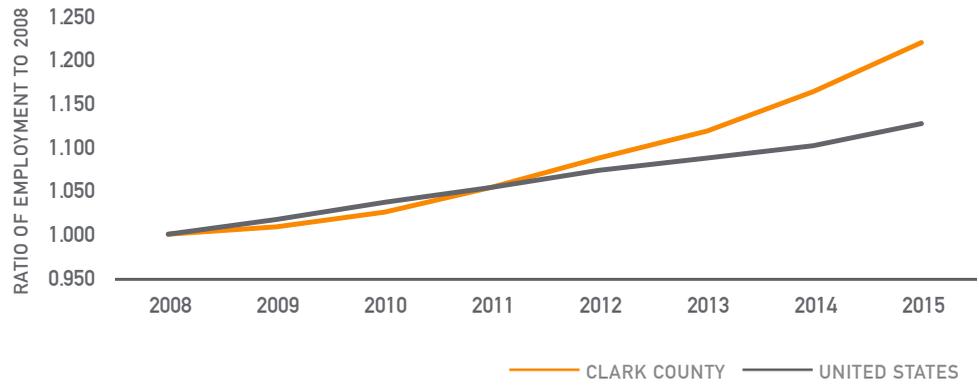
The Southern Nevada region has historically maintained an undersized health care sector, with a location quotient of 0.6 in 2015 despite strong growth in recent years. Since 2010, several major provisions of the Affordable Care Act have increased insurance coverage and brought new dollars into the health care sector. The individual mandate and federal subsidies for insurance policies purchased through the health insurance exchange, combined with the Medicaid expansion in the state, influenced a drop in statewide uninsured rates from 19% in 2013 – the year before Medicaid expansion – to 11% in 2015. This increase in health

insurance coverage has helped fuel rapid growth in the health care sector, pushing regional growth to 25.3% between 2008 and 2015, which was much quicker than the 13.0% growth the sector experienced nationally.

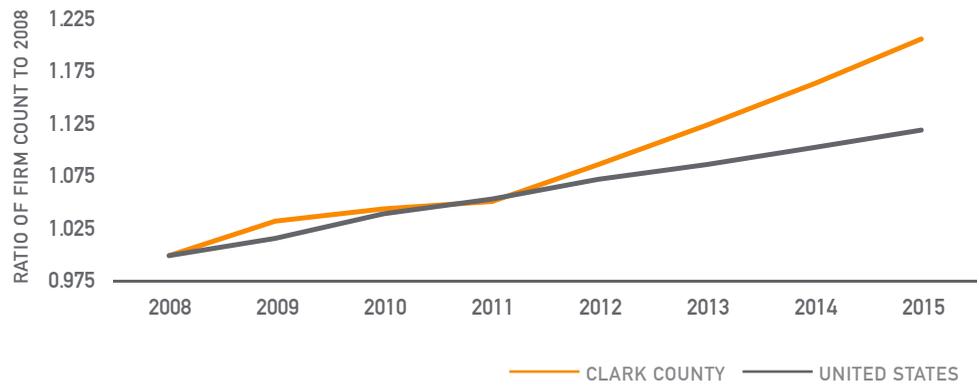
Employment growth in health care during the same timeframe was fairly well balanced across specific healthcare-related industries, with growth of 23.5% in ambulatory health care services, 23.5% in hospitals and 37.8% in nursing and residential care facilities. The number of firms operating across this sector has also seen a rapid rise, with total firms in the region growing by 20.6%, though all of that growth has come from ambulatory health care services (18.1%) and nursing and residential care facilities (52.5%). The life sciences component of this target has not fared as well. While data are not available to directly track its performance, it is part of a small research and development subsector that includes some physical and engineering activities as well. That subsector has seen employment fall from 2,462 jobs to 1,465 jobs between 2008 and 2015, indicating that life sciences research and development efforts have not moved in concert with the rest of this target industry. While the research and development component of this target is small, the number of firms in research and development has grown rapidly from 64 to 113 between 2008 and 2015, suggesting new entrepreneurial activity, which may provide a foundation for growth in the years to come.

HEALTH CARE AND LIFE SCIENCES

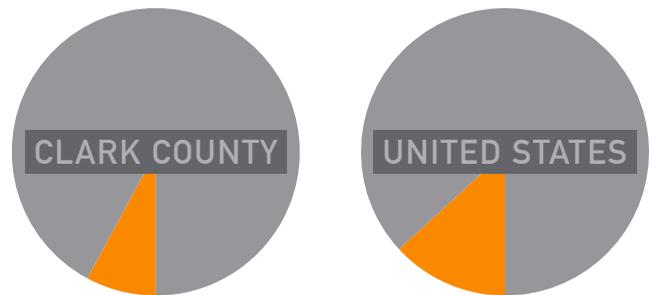
CUMULATIVE GROWTH IN EMPLOYMENT



CUMULATIVE GROWTH IN FIRMS



EMPLOYMENT SHARE



2015 LOCATION QUOTIENT: 0.6

PAST PERFORMANCE

Business and IT Ecosystems

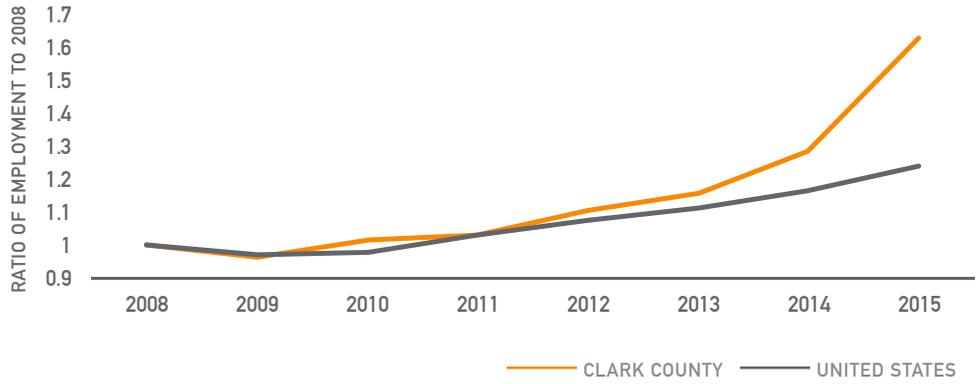
The current Business and IT Ecosystems target industry aims to help support and build on the region's growing tech industry. Over the past several years, Southern Nevada has established a world-class infrastructure backbone that has expanded rapidly over the past several years and is expected to continue to attract business to the area. Additionally, LVGEA's 2016 CEDS features related opportunities in cybersecurity, online gaming, and unmanned aerial systems, along with value in the continued development of local infrastructure that powers this industry and facilitates additional growth more broadly in business services.

This target industry serves as a cluster of activities that are often grouped across multiple traditional sectors including telecommunications; data processing, hosting, and related services; and computer systems design and related services. As important as these subsectors are in helping grow an array of high-tech categories, the cluster itself is small in terms of employment, representing only 1.9% of employment nationally. Additionally, while the cluster has high visibility and has maintained a strong track record of growth in Southern Nevada, it still remains an emerging industry in the region, with only 0.9% of employment in the cluster, giving the region a location quotient of 0.5 as of 2015 and much more room to expand to both meet and exceed national employment.

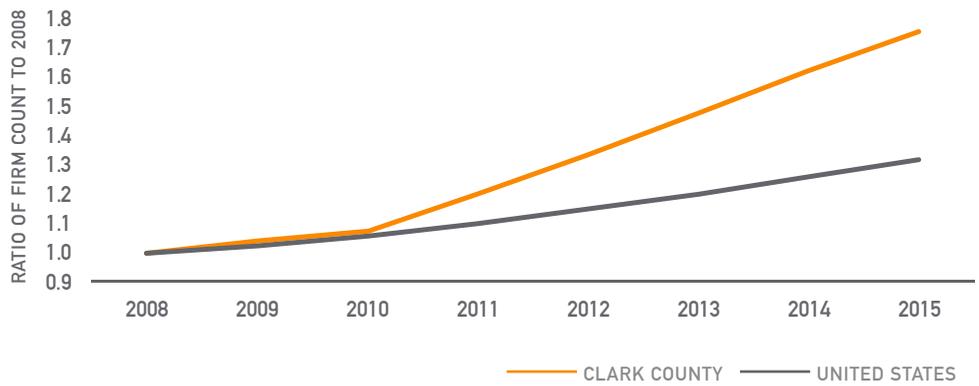
To that end, recent progress in the region for the entire cluster suggests tremendous momentum and opportunity, including 62.8% growth in employment and 75.5% growth in the number of firms between 2008 and 2015. The clear driver behind this growth within the region is data processing, hosting and related services, which has more than tripled in total employment, with 409 jobs in 2008 to 1,295 jobs in 2015. While much of that employment growth is attributable to Switch, the number of firms in this subsector has also grown by 71.5%, demonstrating shared progress and measurable success for the region in cultivating this industry beyond the success of one dominant, leading firm. The largest component of this target industry is computer systems design and related services, which have added more than 2,000 jobs between 2008 and 2015, experiencing 61.0% growth in employment and 80.6% growth in the number of firms during that period. Collectively, these trends reveal a burgeoning industry with many small market entrants, which provides optimism for continued success.

BUSINESS AND IT ECOSYSTEMS

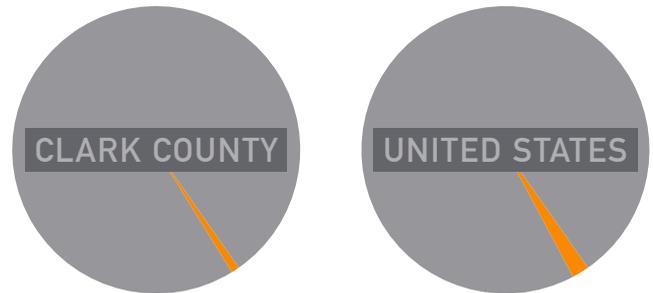
CUMULATIVE GROWTH IN EMPLOYMENT



CUMULATIVE GROWTH IN FIRMS



EMPLOYMENT SHARE



2015 LOCATION QUOTIENT: 0.5

PAST PERFORMANCE

Clean Technology

Due to the narrow and somewhat ambiguous definition of “clean technology” as a focused niche within research and manufacturing, very little data exists to track changes in employment or number of firms over time. Broadly speaking, “green jobs” represented 2% of statewide employment in 2011, but this categorization is much broader than clean technology as defined within the 2011 Brookings-SRI study, which served as the basis for the current industry target mix. While the clean technology designation includes activities that can be referred to as “clean” or “green,” industry performance data is only tracked and reported as components of other available data sets – for example, expanding the region’s transmission capacity would include all transmission inputs such as hydro, solar, and coal.

One of the challenges that has beset statistical agencies is developing a widely agreed-upon definition of “clean.” While some activities, such as wind or solar power, are broadly recognized as cleaner alternatives to traditional sources of power like coal, other activities can have “clean” aspects while still supporting traditional sources of energy, such as energy efficiency initiatives that save power while lowering costs for oil and gas processing.

There is a clear and growing consumer demand for products that are more environmentally friendly, as well as products developed using more environmentally friendly processes; however, these technologies are widely dispersed across industries and have become so deeply integrated into products and production processes that separately identifying and tracking those activities is beyond the scope of ongoing large-scale data collection efforts tracking economic activity.

The Desert Research Institute continues to be a valuable resource in the region for research on clean energy, energy efficiency, and water conservation. However, commercialization of that research is a long-term process and there is sparse evidence that the region has seen significant jobs gains in this category. WaterStart is another valuable regional resource focusing on commercialization of water technology and has developed partnerships that provide start-up companies with access to major corporations and full-scale production sites for testing and further developing new products. While WaterStart maintains a growing list of successes, those opportunities have not yet developed into major employment drivers for the region.



- NARROW DEFINITION OF “CLEAN TECHNOLOGY” AS A FOCUSED NICHE WITH LITTLE DATA AVAILABLE TO TRACK CHANGES IN EMPLOYMENT OR NUMBER OF FIRMS OVER TIME
- “GREEN JOBS” REPRESENTED 2% OF STATEWIDE EMPLOYMENT IN 2011, BUT THIS CATEGORIZATION IS MUCH BROADER THAN CLEAN TECHNOLOGY AS DEFINED WITHIN THE 2011 BROOKINGS-SRI STUDY
- INDUSTRY PERFORMANCE DATA IS ONLY TRACKED AND REPORTED AS COMPONENTS OF OTHER AVAILABLE DATA SETS - FOR EXAMPLE, EXPANDING THE REGION’S TRANSMISSION CAPACITY WOULD INCLUDE ALL TRANSMISSION INPUTS SUCH AS HYDRO, SOLAR AND COAL
- LIMITED ANECDOTAL EVIDENCE IN RECENT YEARS TO HELP ASSESS OVERALL PERFORMANCE

PAST PERFORMANCE

Defense and Unmanned Aerial Systems

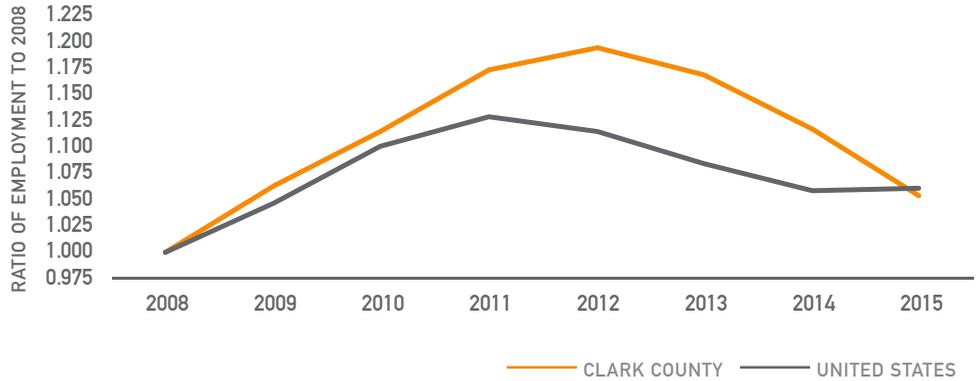
Southern Nevada benefits from a major defense presence in and around the region, including Nellis Air Force Base, Creech Air Force Base, and the Nevada Test and Training Range. Collectively, these three locations employed 10,777 military personnel and 3,763 civilians in 2015, representing a much larger share of regional employment than is typical nationally, as illustrated by a location quotient of 2.7. This large concentration of defense activity provides a significant infusion of dollars to the local economy, generating \$5.5 billion in economic impact for the region in 2015.¹ While these military installations will continue to drive economic activity in the region for many years, a review of recent trends illustrates that employment can rise and fall quite a bit over time as federal actions raise and lower headcounts at a given facility. After a dramatic increase between 2008 and 2012, with a peak almost 20% above 2008 levels, total regional employment has fallen off somewhat, with 2015 headcounts ranking 16.8% higher than 2008 levels. As important as these military facilities are to the regional economy, LVGEA's 2016 CEDS recognizes the economic development growth opportunity related to defense lies in the commercialization and testing of unmanned aerial systems, given the concentration of global drone expertise and activity at these three military installations.

While economic development opportunities for unmanned aerial systems have been a high-profile target for quite some time, the industry has not yet moved beyond the research and development phase to full-scale commercialization. In addition, the regulatory and policy environment is continuing to develop in order to provide a framework within which these technologies can develop more rapidly. Industry-level data are not available to track progress in this area given the narrow focus of this emerging niche within aircraft manufacturing, engineering services, and computer systems design; however, the region has demonstrated substantial progress in capacity-building – including test facilities in Boulder City, Henderson, and Mesquite that offer a wide range of landscape and population density for different types of drone testing. While commercial drone technology continues to be a fledgling market, the early successes of companies in the region – including Dronesmith Technologies, Praxis Aerospace, Spectral Sky, Vadatech, and Verascan – demonstrate progress in this area and expectations for more rapid growth in the near future.

¹ Nellis Air Force Base. 2015 Economic Impact Analysis. By Nellis Air Force Base, Creech Air Force Base, and Nevada Test and Training Range. Print.

DEFENSE AND
UNMANNED AERIAL
SYSTEMS

CUMULATIVE GROWTH IN EMPLOYMENT



UNMANNED AERIAL SYSTEMS

- INDUSTRY-LEVEL DATA NOT AVAILABLE: NARROW NICHE WITHIN AIRCRAFT MANUFACTURING; ENGINEERING SERVICES; AND COMPUTER SYSTEMS DESIGN
- ANECDOTAL PROGRESS: DRONESMITH TECHNOLOGIES, PRAXIS AEROSPACE, SPECTRAL SKY, VADATECH, AND VERASCAN
- CAPACITY BUILDING: BOULDER CITY, HENDERSON, AND MESQUITE

2015 EMPLOYMENT

10,777
MILITARY
PERSONNEL

3,763

\$5.5B
GENERATED
ECONOMIC IMPACT

2015 LOCATION
QUOTIENT:
2.7

MAJOR DEFENSE PRESENCE

- NELLIS AIR FORCE BASE
- CREECH AIR FORCE BASE
- NEVADA TEST AND TRAINING RANGE

PAST PERFORMANCE

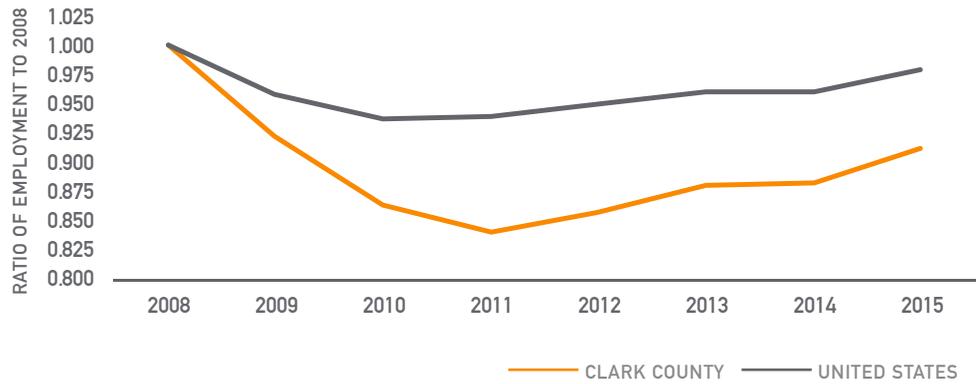
Global Finance, Banking, and Business Services

LVGEA's 2016 CEDS promotes a strategy to capitalize on the region's success as a global hub for gaming, tourism, and conventions by developing a more global presence in the finance and banking industry. Given the region already hosts millions of business travelers each year and serves as a central meeting place for many industries hosting trade shows and conferences, the region is well positioned to support international financial institutions serving those visitors. While "global" aspects of finance and related industries aren't measured or tracked separately from the rest of the finance and banking, a review of sector-level trends in employment and firms provides insights into the relative success of this target industry over the last several years.

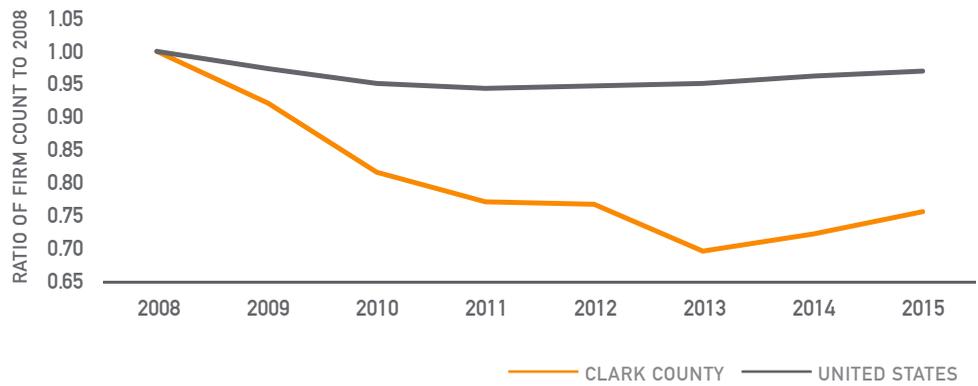
The finance and banking industry is one that has historically been undersized in Southern Nevada with employment in the industry falling precipitously during the Great Recession and not yet showing much positive movement. Between 2008 and 2015, employment fell 20% and the number of firms fell by almost 40%. One bright spot for the region that is hidden by the broader trend is in the securities, commodity contracts, and other financial investments subsector, which grew from 1,186 to 1,548 jobs between 2008 and 2015 – more than 30% growth. Additionally, that growth is supported by an increase of 14.5% in the number of firms operating in the subsector over the same period.

GLOBAL FINANCE, BANKING,
AND BUSINESS SERVICES

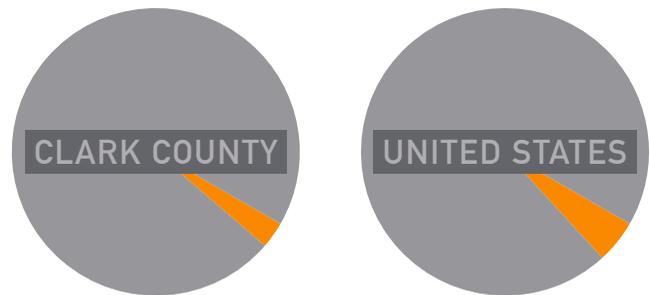
CUMULATIVE GROWTH IN EMPLOYMENT



CUMULATIVE GROWTH IN FIRMS



EMPLOYMENT SHARE



2015 LOCATION
QUOTIENT:
0.6

TARGET INDUSTRY VALIDATION SWOT ANALYSIS

The background of the page is a green-tinted aerial photograph of a city, likely Las Vegas, showing a grid of streets and various buildings. At the bottom of the page, there is a decorative border consisting of a grid of small, light-colored circles.

A critical component of any focused assessment like a target industry validation study involves a strategic review of the study subject's strengths and weaknesses, as well as the opportunities and threats may help or hinder one's ability to leverage assets to achieve optimal growth or success, commonly referred to as a SWOT analysis. As a comprehensive SWOT analysis of the region as a whole is beyond the scope of this validation study, a more focused SWOT review was utilized in considering existing target industries and how potential adjustments may need to be applied toward this target industry mix. This review provides a basis for investigating and understanding supportive assets, as well as identifying policies and economic trends that may help expand, or potentially hinder growth in those industries – with an inherent focus on a critical reassessment of the area's existing strengths given that the starting point is a well-established set of target industries.

However, careful attention was paid to potential weaknesses in area assets that could undermine success in developing current targets, as well as opportunities and threats in the changing policy, regulatory, and economic environment that could further enhance growth among existing targets, or perhaps suggest a pivot to a new focus.



REVIEW OF STRENGTHS AND WEAKNESSES IN REGIONAL ASSETS

For many years, Southern Nevada's economy has relied on a world-renowned gaming, tourism, and conventions sector to drive the local economy. But as the population has grown, regional economic development stakeholders have made a more concerted effort to diversify the economy and develop infrastructure that goes beyond supporting existing industries and population. In doing so, the region has seen economic growth across a wider array of high-tech industries and is well-positioned to continue developing both traditional and emerging opportunities in the region. Specific assets that are critical to take into account in terms of continued target industry growth were identified through stakeholder input along with a review of a number of recent regional economic studies. These assets are discussed below, including highlighted areas of strength and potential weaknesses.

PHYSICAL LANDSCAPE

- The area benefits from an abundance of low-cost land, including many fully and partially developed sites across the region, while the mix of terrain across Southern Nevada provides a variety of real-world settings for testing new technology; additionally, the region includes a mix outdoor recreation opportunities to support the continued development of tourism and quality-of-life benefits in the region.
- Water resources can be seen as both a regional strength and weakness in the context of guiding target industry validation efforts, with an arid climate providing an ideal setting for research and solar development, but also an important consideration for future development. To-date, the region has had sufficient access to water resources to support significant development, but securing water resources to accommodate additional growth is a long-term concern that must be addressed. In some instances, from an environmental and corporate sustainability perspective, some companies may see Southern Nevada as a preferred alternative to other states adjacent to the Pacific Ocean, due to the region's emphasis on and infrastructure supporting water reuse. These planning considerations are supported by stakeholders adopting a forward-looking view regarding water resource management and utilization, such as the Southern Nevada Water Authority and the organization's 2015 Water Resource Plan, focused on a 50-year planning horizon.

MULTI-MODAL CONNECTIVITY

- McCarran International Airport provides 145 nonstop destinations including domestic and international locations. In 2015, this resource brought 5.9 million international visitors and 42.3 million total visitors in 2015¹ to the region. In addition, air connectivity serves a valuable role for businesses seeking a high degree of connectivity with clients and vendors.
- The region benefits from I-15 and the ongoing development of I-11, providing easy access to major western markets, especially in California, Arizona, and Utah.

INNOVATION INFRASTRUCTURE

- The area has a well-developed backbone of high-speed fiber infrastructure and connectivity, which has already served as a major resource for area growth in developing IT ecosystems.
- The City of Las Vegas maintains a test-ready grid system for the deployment of terrestrial autonomous vehicles, with built-in vehicle-to-infrastructure capabilities, wired high-speed fiber connectivity, an intelligent street network, and traffic light signalization improvements.

¹ "Final Report and Recommendations." Southern Nevada Tourism Infrastructure Committee 4.03 (2016): Southern Nevada Tourism Infrastructure Committee. 27 Sept. 2016. Web. 19 Feb. 2017.

INNOVATION-ORIENTED POLICIES

- While much of the policy environment surrounding the region serves as external context for identifying opportunities and threats, the city maintains a certain degree of latitude for establishing local policies that can help cultivate local development. In particular, the 2016 Las Vegas Mobility Master Plan serves as a well-defined blueprint for growing the use of technology in transportation within the region, while other City of Las Vegas policies are highly geared toward such advancements, such as through the City of Las Vegas City Council's approval in 2016 of a resolution designating an Innovation District within the Downtown Las Vegas Master Plan.

TECHNOLOGY TRANSFER RESOURCES

- The Desert Research Institute serves as a research-oriented campus of the Nevada System of Higher Education, focused on environmental research with global expertise in clean energy, energy efficiency, and water conservation.
- Due to a recognized need to help facilitate commercialization of emerging technology related to water, the state of Nevada established WaterStart as a public-private partnership to provide start-up water technology companies with access to major corporations and full-scale production sites for testing and further developing new products.
- To help capitalize on existing comparative advantages related to drones and automation technology, the state established the Nevada Institute for Autonomous Systems (NIAS) to serve as a coordinating and collaborating resource to support ongoing industry growth in the state.

REGIONAL WORKFORCE AND EDUCATION ASSETS

- To support and maintain the region's substantial gaming, tourism, and hospitality industry, the region has promoted strong workforce competencies in accounting, finance, legal, and other professional or technical positions.
- The region's significant military presence provides an unmatched source of skilled and experienced workforce in drone technology, which include skillsets transferable to terrestrial autonomous systems, although this alignment must continue to be cultivated by regional stakeholders.
- One workforce challenge in particular revolves around persistent shortages in health care occupations. The region will take a major step forward in addressing this shortage by expanding capacity for graduate medical education with the opening of the UNLV School of Medicine in fall 2017, while plans are in place for another medical school at Roseman University College of Medicine, in addition to the existing Touro University Nevada College of Osteopathic Medicine.
- Demand in the IT sector continues to outpace regional supply for workforce, which is a problem that isn't unique to Southern Nevada when it comes to supporting the rapid development of high-tech categories. However, regional stakeholders and higher education institutions recognize this deficiency and are working to expand programs while building partnerships with private sector companies, as well as identifying ways to better retain high-demand IT talent in the region supplied by such programs.
- Through forward-looking leadership in higher education and state-led efforts to align the education system with workforce needs, the region is home to several high-quality programs at UNLV, Nevada State College, the College of Southern Nevada, as well as an innovative and robust set of training programs through Global Online Advanced Learning (GOAL), which is developed and operated by Vegas PBS, the local Public Broadcasting affiliate. These degree programs include undergraduate, graduate, and other program-based coursework offerings focused on supporting current target industries such as Business and IT Ecosystems; Gaming, Tourism, and Conventions; Health Care and Life Sciences; and Global Finance, Banking, and Business Services. Other current target industries, such as Defense and Unmanned Aerial Systems, are supported by degree programs like the bachelor of applied science degree in engineering technology, which exists as a partnership between Nevada State College and the College of Southern Nevada's degree in engineering technology.

GLOBALLY-RECOGNIZED BRAND

- The region benefits greatly from the global Las Vegas brand as a center for gaming, tourism, and conventions, as it helps maintain a high degree of visitation to support a core component of the region's economy. However, that strong brand can also be limiting in the context of business development and recruitment beyond companies interested in what is clearly the region's dominant economic competency.
- The region has also experienced success in facilitating the growth of a brand for Las Vegas and Southern Nevada as an innovation hub, including a growing list of established technology-oriented companies like Zappos, along with widely-known, cutting-edge technology startups Faraday Future and Hyperloop. This image has been further cultivated through the attraction of business operations in warehousing and distribution for prominent innovation-oriented companies like Amazon and The Honest Company, which demonstrate that the region is a good place for companies heavily reliant on technology and automated operations beyond traditional IT-focused companies.

QUALITY-OF-LIFE

- The dominance of gaming, tourism, and conventions as an industry cluster can be both a strength and weakness for leveraging quality-of-life assets toward business and workforce recruitment. The large volume of visitors passing through the region can make it challenging to create a strong sense of community, one that clearly maintains two distinct "brands" – one associated with primarily the gaming and tourism sector, and another with more residential areas where families have access to abundant retail, food, and entertainment. However, the recent development of the new Smith Center for the Performing Arts is a welcome addition for area residents that will add a new dimension to the area's already high caliber entertainment offerings.

POLICY, REGULATORY, AND ECONOMIC OPPORTUNITIES AND THREATS

While the assets and policies that exist within Southern Nevada serve as essential building blocks for economic growth, the broader policy, regulatory, and economic environment at state, national and international levels will heavily influence the region's success in developing new opportunities through these and other assets. This is especially true of state-level policies, which influence the relative attractiveness of Nevada when compared to other states. However, given Southern Nevada's successes in and commitment to growing industries heavily reliant on cutting-edge technology, federal policies that regulate the adoption and use of these new technologies will be critically important. Similarly, federal regulations related to banking and the environment merit strong consideration among regional stakeholders in terms of developing strategies around how best to orient economic development efforts in coming years.

PRO-GROWTH STATE POLICY AND TAX ENVIRONMENT

- Nevada offers a very competitive, business-friendly tax environment, which creates tremendous opportunities for the region in terms of corporate recruitment and retention. According to the Tax Foundation's business tax climate rankings, Nevada is ranked 5th nationally and higher than any of Nevada's neighboring states in the western U.S., particularly when compared to California's ranking of 48th nationally.
- Nevada is one of only two states that actively charters Industrial Loan Companies (ILCs). ILCs offer commercial firms an opportunity to establish a direct financing mechanism to help facilitate product sales and bridge the regulatory divide separating banking and commercial activity.
- Nevada continues to look for ways to adapt gaming-related policies to encourage new business opportunities as consumer demand in gaming evolves. A recent regulatory shift by the Nevada Gaming Control Board allows eSports betting in the state and opens up a potentially large new market segment within the gaming industry.
- Not only are the state's formal regulations and policies important to Southern Nevada's economic competitiveness, but LVGEA has developed strong working partnerships across the region, including those with GOED and the Las Vegas Convention and Visitors Authority (LVCVA), which are often instrumental to pursuing opportunities for economic development in the area. Most importantly, a formal memorandum of understanding (MOU) between LVGEA, GOED, and LVCVA supports LVCVA's ongoing operations of the nation's only convention center designated as a World Trade Center site.

FEDERAL POLICY

- With a new administration at the federal level, there is a great deal of uncertainty about specific policy changes in the coming years. However, there is general agreement that federal policies will be characterized by a reduction in environmental regulations and development of policies that promote business activity. These policies are likely to positively impact some areas such as new movement related to industrial banks, but may negatively impact others such as reduced federal investment in clean energy.
- One specific area that hinges critically on federal policy is the commercialization of autonomous technology. While there have been high hopes for many years for the commercialization of unmanned aerial vehicles (UAVs), federal policies have been limiting and have slowed growth in this industry. There may be a renewed opportunity in this area under a new administration, but progress toward full-scale commercialization of UAVs may still take years. While testing of terrestrial autonomous technology has expanded in recent years, the move toward full-scale commercialization and adoption will similarly depend on the federal regulatory framework.
- Another important federal policy relates to banking and new reporting rules proposed by the Organization for Economic Co-operation and Development (OECD). These rules impose disclosure regulations in banking that can help foreign countries track funds across international borders. While 97 jurisdictions have self-imposed those disclosure regulations, the U.S. has declined to participate and thus does not require domestic banks to provide similar reports to other countries, providing a unique opportunity for domestic banks to capture an increasing share of the global banking market.

PROFESSIONAL SPORTS

- As the metropolitan area's population has swelled beyond 2 million residents, the region has become a prime location for professional sports, given the added benefit of easy travel to and from the region. The region took a major step forward with the recent announcement of a new NHL expansion team for the 2017 to 2018 season.
- Another major opportunity on the horizon is the potential for an NFL franchise to relocate to Las Vegas. If successful, the region would also benefit from the development of a new stadium, which has potential for significant additional tourism benefits relating to hosting major sporting events.

WORKFORCE AND EDUCATION ENVIRONMENT

- The Governor's Office of Science, Innovation and Technology (OSIT) serves a key role in working to meet the state's workforce demands. OSIT helps with coordinating and aligning efforts by K-12 and higher education institutions, workforce development and employers to improve science, technology, engineering, and mathematics (STEM) education and STEM workforce development in Nevada.
- Another major state resource helping develop new opportunities in the region is the Governor's Office of Workforce Innovation (OWINN), which was created in 2016 to align the state's efforts to diversify the economy by helping develop a skilled workforce aligned with the state's changing economic demands.
- The relatively lower-wage profile provides significant opportunities for the region, especially in light of recent minimum wage legislation in nearby states like California,¹ which follow an annual escalator that will lead to sustained wage increases in subsequent years.

STATE ECONOMIC DEVELOPMENT INCENTIVES

- The state has a number of targeted tax abatements on top of an already favorable business tax climate that seek to further attract businesses in specific target industries. Notable abatements are the Data Center Tax Abatement, Aviation Parts Abatement, Personal Property Tax Abatement, Modified Business Tax Abatement, and Sales and Use Tax Abatement. Each of these are oriented toward encouraging capital investments tied to the creation of high-paying jobs. Together with the Silver State Works hiring incentive, Nevada ranks as the top state in the Mountain West for economic development incentives.² However, Nevada has not yet broken into the top 10 nationally for such incentives, and must continue to further develop competitive incentive structures to succeed in the highly competitive economic development landscape.
- Economic development incentives are not always aligned with priority policy and economic development areas. For example, WaterStart provides a foundational technology transfer resource to the region, but there are no specific incentives or funding sources structured to encourage investment in water technology. To the extent that existing incentives can be employed to support other policy areas, those links must be clearly drawn and widely publicized to fully capitalize on development opportunities.

¹ State of California Industrial Relations. Official Notice: California Minimum Wage. 20 Feb. 2017. Web.

² Arend, Mark. "Top Competitive States: In It To Win It." Site Selection Magazine Online. Site Selection Magazine, May 2015. Web. 24 Feb. 2017.

Source: Tax Foundation 2017 State Business Tax Climate Index Ranks and Component Tax Ranks. Tax Climate Index is a weighted average of components designed to capture relative importance of each component.

STATE BUSINESS TAX CLIMATE COMPARISON

| STATE | OVERALL BUSINESS TAX CLIMATE INDEX RANK | CORPORATE TAX RANK | INDIVIDUAL INCOME TAX RANK | SALES TAX RANK | UNEMPLOYMENT INSURANCE TAX RANK | PROPERTY TAX RANK |
|------------|---|--------------------|----------------------------|----------------|---------------------------------|-------------------|
| NEVADA | 5 | 34 | 1 | 41 | 43 | 8 |
| UTAH | 9 | 3 | 12 | 17 | 22 | 5 |
| ARIZONA | 21 | 19 | 19 | 47 | 13 | 6 |
| CALIFORNIA | 48 | 33 | 50 | 40 | 16 | 15 |

RECOMMENDED TARGET INDUSTRY MIX:

For a region the size of Southern Nevada, it is critical to have a diversified target industry mix to guide economic development efforts. However, diversification across top-line industries can also benefit from some level of integration or alignment across specific elements within each industry. In fact, this type of cross-industry alignment serves as a strategy to help unite the success of multiple industries tied to emerging dimensions or categories the region is poised to cultivate. Additionally, the term “target industries” inherently communicates the manner in which this type of economic growth should be pursued – by focusing on specific areas where economic development agencies can positively influence growth, or preserve current market positioning. For example, consider the region’s gaming, tourism, and conventions industry cluster. The size and stature of this cluster, including its entrenched position in the

regional economy, is such that it requires very little support from an economic development standpoint to continue reaching strong levels of performance. However, categories exist within this cluster that feature opportunities for rapid growth due to a shifting regulatory environment (such as in eSports), or those where the industry stands to be further buoyed through the introduction of innovation and technology (such as in security applications in gaming). This philosophy used to guide the establishment of this recommended industry mix, and the focus for each, is directly tied to areas LVGEA and its partners can directly influence, including planning for workforce, community development, and advocacy as opposed to targeting industries that must and will continue to perform well without concerted economic development efforts.

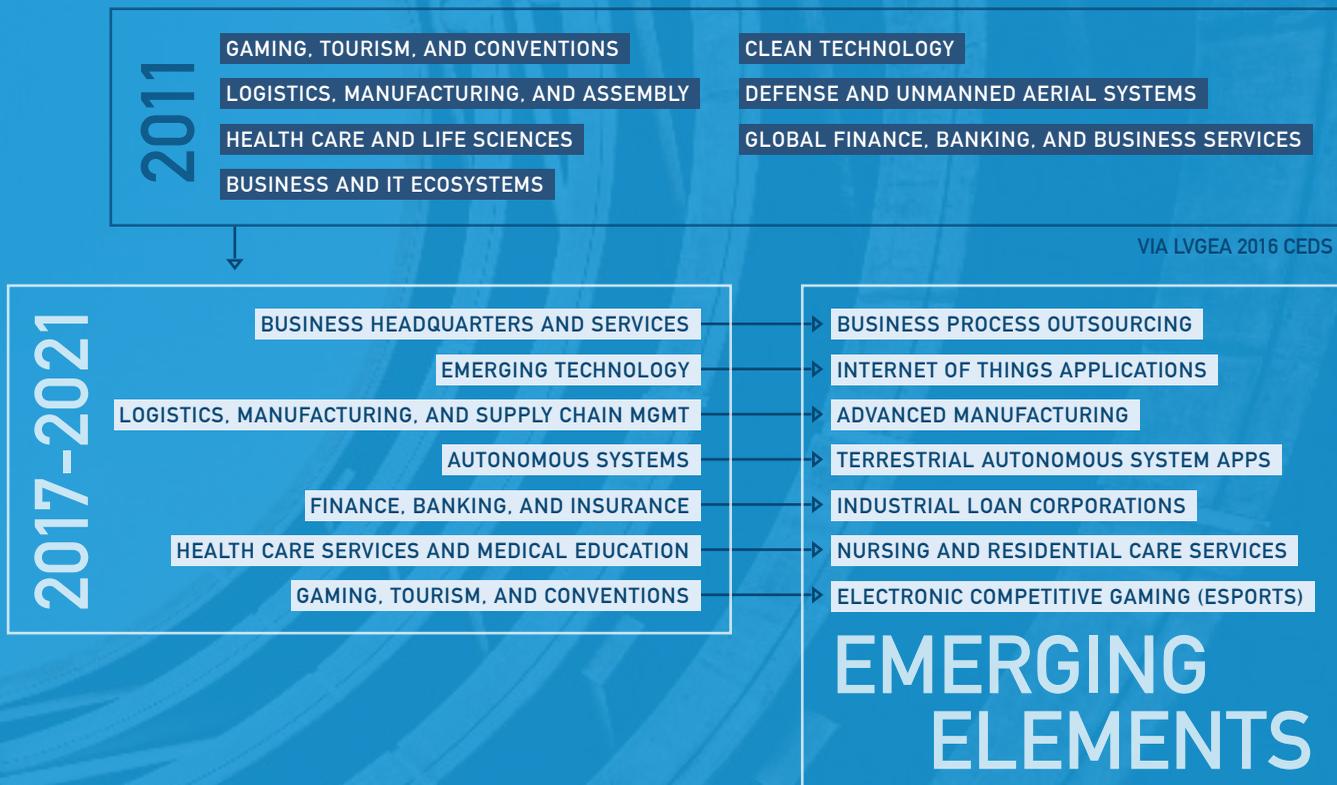
2017-2021

Additionally, industries are recommended as a clustered set of narrower supporting components but referred to throughout as an “industry” due to the close alignment each sector maintains and how those sectors can and should work in tandem with one another. Furthermore, as part of this validation framework, these recommendations are based on three distinct criteria:

1. Recent performance and growth within the Southern Nevada market, indicating both unmet demand and recent momentum
2. Relative growth, indicating a still underserved but in-demand regional market
3. Growth potential based on regional assets and/or ways in which Southern Nevada is positioned to uniquely compete on a regional, national or international level based on recent global industry trends, innovation or projected activity

Each existing target industry was analyzed and considered for relevance in the current economic development environment, both in nomenclature and strategic focus, with recommendations outlined in detail below relative to past versus current industry mix, with an emphasis on the embedded emerging opportunities within each.

The following diagram outlines current target industries, as identified and recommended within the 2011 Brookings-SRI study, with modifications based on the 2016 LVGEA CEDS report, which features global finance, banking, and business services as a target industry in lieu of the statewide focus on mining; the recommended target industry mix for LVGEA and its partners to utilize in guiding economic development strategies for the next five years; and the emerging elements included across this recommended target industry mix offering the most acute growth opportunities in the short-to-medium-term.



TARGET INDUSTRY

Business Headquarters and Services

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SUBSECTORS:

- MANAGEMENT OF COMPANIES AND ENTERPRISES
- PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES
- ADMINISTRATIVE AND SUPPORT SERVICES

OVERVIEW

One of the strongest signals a regional economy can send to both incumbent market participants and business development targets is, “we’re open for business.” Although a regional focus on “business headquarters and services” is often only an extension of business recruitment efforts directed toward other industries, establishing this industry as a direct target for economic development reflects the strength of regional assets that can be leveraged toward the recruitment of business headquarters – regional headquarters or operations, U.S. locations for international companies, and corporate headquarters – as well as the professional, technical, administrative and support services that serve as core inputs into business headquarters or operations and support service firms. For example, the region has seen significant recent successes and growth in business process outsourcing (BPO) companies, a trend expected to continue due to a favorable environment for human resources and workforce, quality of life, and public policy.



REGIONAL ASSETS

MULTI-MODAL CONNECTIVITY

Easy, convenient, and low-cost access to a variety of transportation options is a critical component for companies looking to establish a presence in a new area, including but not limited to: access to raw materials, supply chain products, vendor or client connectivity, trade route connectivity, and workforce access to key markets. In Southern Nevada, the region's air connectivity is one of the most visible and differentiated assets within the multi-modal connection mix, helping facilitate easy access in and out of the region. The region saw 5.9 million international visitors¹ and 42.3 million total visitors in 2015,² and McCarran International Airport supports more than 30 airlines providing nonstop service to more than 145 destinations. Additionally, I-15 and the development of I-11 provide direct connectivity to major markets in the region.

LOW TAX ENVIRONMENT

In addition to positive recent trends in employment and firm growth within this cluster, Nevada's statewide tax environment provides a competitive advantage for economic development officials to leverage for corporate recruitment of business headquarters and related supply chain activities, particularly considering the relative friendliness of the state's taxing and business policy mix among neighboring states. The Tax Foundation business tax climate ranking for Nevada is ranked 5th nationally and is higher than any of Nevada's neighboring states, particularly when compared to California's ranking of forty-eighth nationally. According to the Guinn Center for Policy Priorities, from a competitive perspective, any incremental increase in statewide sales or property taxes would likely be offset by the lack of a state and corporate income tax, with very few goods exchanged within the state actually subject to state sales taxes. Furthermore, the recent passage of the statewide business entity or "commerce tax" contains enough fundamental elements of "sound tax policy" while providing a dedicated funding stream for deficiencies in Nevada's K-12 education system that allow negative implications of the tax to be offset in the long-term through other critical community or quality-of-life improvements.

1 "Las Vegas International Visitation Estimates." Las Vegas Convention and Visitors Authority. 17 Nov. 2016. Web. 19 Feb. 2017.

2 "Final Report and Recommendations." Southern Nevada Tourism Infrastructure Committee 4.03 (2016): Southern Nevada Tourism Infrastructure Committee. 27 Sept. 2016. Web. 19 Feb. 2017.

WORKFORCE COMPETENCY IN BUSINESS SERVICES

With Southern Nevada's historical, market-leading position in gaming, tourism, and hospitality, the region has successfully cultivated significant workforce competencies in accounting, finance, legal, and other professional and technical positions. This type of workforce asset serves a critical need for business service companies. Although developed through hospitality and related activities, accounting, finance, legal, and other professional occupations have broad transferability to a number of different high-level and high-pay positions in business services. Furthermore, recent minimum wage legislation in nearby, competitive states like California³ follow an annual escalator in terms of sustained wage increases in subsequent years, which will continue to apply upward pressure on companies located in states with this type of shift. In contrast, Nevada features a much more competitive policy environment with lower minimum wages that, even if increased along a similar escalated path, still provides companies such as BPOs an incentive to relocate or establish a new presence within the western U.S. with a lower-cost alternative for the next several years along with greater wage predictability.

3 State of California Industrial Relations. Official Notice: California Minimum Wage. 20 Feb. 2017. Web.

OPPORTUNITIES AND THREATS

Recent organic growth in management of companies and enterprises, a subsector traditionally represented by business headquarters and related operations, features strong upward trends along with an elevated jobs multiplier to catalyze sustained growth as a target focus for business development. For example, in Clark County, the subsector has grown from 13,444 jobs in 2008 to 18,358 in 2015, which represents 34% regional growth compared to 16% for the U.S., an impressive growth rate considering the area has only experienced 1% growth across all industries over the same time period. Furthermore, a regional jobs multiplier of 2.36 for this subsector means that economic development wins will pay large dividends in terms of indirect and induced employment impact with a focused effort to attract regional headquarters, U.S. locations for business enterprises, and corporate headquarters.

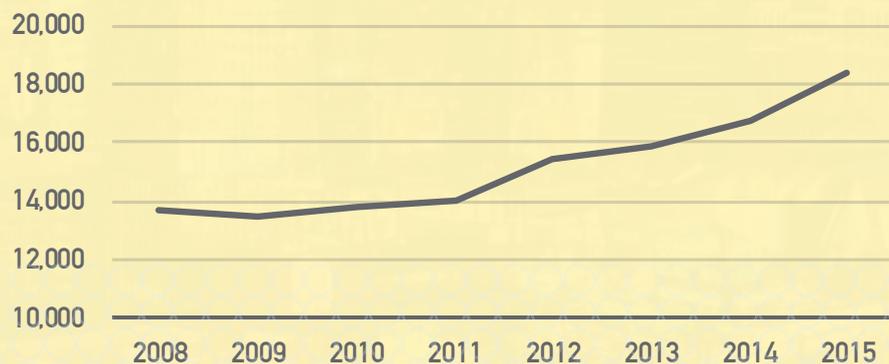
Additionally, professional and technical services have been growing rapidly nationally, with roughly 10% growth since 2008 compared to 4.5% growth across all industries in the U.S. While this subsector grew more slowly in Southern Nevada than the national trend over the same period, the rate of growth has accelerated more recently with employment in professional and technical services increasing 15% in the region from 2011 to 2015. This focus area expands on and overlaps with the Brookings-SRI target industry focus areas of clean technology research and development, process and logistics consulting services, research and development in health (life sciences), and computer systems design and related services. With a jobs multiplier of 2.65, the

scientific research and development services subsector has an impressive multiplier effect for indirect and induced impacts associated with primary growth. In turn, the region is well positioned to accommodate growth through leveraging assets such as data and physical infrastructure, in-demand workforce training programs, and a tax environment with no corporate or personal income taxes. Furthermore, the State of Nevada’s Department of Employment, Training and Rehabilitation (DETR) employment projections indicate the industry is already expected to grow by more than 30% throughout the current 10-year forecast horizon of 2014 to 2024,⁴ surpassing the region’s overall projected growth of 26.4% for the same period. This projected growth rate is much greater than national projections in the same industry, which anticipates 10% growth over the same period.

Finally, an underlying but important component to support the overall target industry cluster of business headquarters and services is administrative and support services. This industry has been growing rapidly in the region since 2008 – with more than 17% in employment growth compared to 10% national growth over the same timeframe – benefiting from skill sets and workforce availability stemming from the region’s well-entrenched positions of strength in gaming, tourism, and conventions. While administrative and support jobs typically represent entry-level positions and lower wages, these are also jobs that are contained within large-scale BPO or similar support service operations and thus offer transferable skill sets and, in many instances, upward mobility opportunities in a structured corporate environment.

⁴ Nevada Statewide Occupational Employment and Projections, 2014-2024. Publication. Nevada Department of Employment, Training and Rehabilitation, Print.

EMPLOYMENT IN MANAGEMENT OF COMPANIES AND ENTERPRISES



TARGET INDUSTRY

Emerging Technology

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SECTORS:

- DATA PROCESSING, HOSTING, AND RELATED SERVICES
- INFORMATION SERVICES, SOFTWARE, AND DATA PROCESSING
- COMPUTER PROGRAMMING AND SERVICES

OTHER RELEVANT SECTORS:

- CLEAN TECHNOLOGY
- WATER TECHNOLOGY

OVERVIEW

In 2011, Brookings-SRI identified Business IT Ecosystems as a statewide target industry by aggregating a number of subsectors focused around call centers, BPOs and shared services, e-commerce operations and headquarters, data centers, cyber security, and more. As the study notes, "... despite this small size, there are promising opportunities for growth that have previously been under-marketed and unrecognized,¹" a statement that is markedly different from the more mature environment for technology-related enterprises and innovation that exists in 2017. Despite the growth that has taken place in these related subsectors over

¹ Muro, Mark; Lang, Robert; Young, Ophelia. "Unify, Regionalize, Diversify: An Economic Development Agenda for Nevada." Brookings. Brookings, 14 Nov. 2011. Web. 20 Feb. 2017.



the past six years, trends indicate Southern Nevada in particular is well positioned to leverage existing, foundational infrastructure and regional assets to accommodate additional growth as a western U.S. hub for technology, extending into sectors powering other high-growth categories such as autonomous systems, gaming, computer programming, and more. Additionally, research, development, and investment activities from recent years in areas such as water management, renewables, and clean technologies have developed the underlying technologies to the point where these elements are now more fully integrated into consumer demand across a number of different high-growth sectors in the region. As such, investments in emerging technology will be well-positioned to be leveraged across other target industries, such as in advanced manufacturing or hospitality. Furthermore, over the past several years, the region's brand in technology-related innovation has been elevated from one that was previously under-marketed and unrecognized to one that now maintains a competitive position regarding new market entrants and workforce.

As outlined below, the opportunities associated with these various high-growth, emerging niche technologies are too significant in today's environment – and the possibilities for regional success too great – to not be cultivated through one industry, or a cluster-based approach.

REGIONAL ASSETS

CORE INFRASTRUCTURE AND EXISTING CAPABILITIES IN DATA PROCESSING AND HOSTING

One of the region's core infrastructure components and existing market participants, Switch, is a primary driver behind historical industry growth and represents a highly unique asset for continued cultivation throughout the region to support economic development. Additionally, high-speed fiber infrastructure and connectivity provide technology-focused companies with the necessary bandwidth to serve a global customer base in tandem with leading data processing and hosting capabilities. Meanwhile, business incubators, accelerators, and training facilities such as RedFlint provide unique learning and supportive growth environments for technology companies working to solve problems in the areas of hospitality and entertainment.

PREVIOUS AND EXISTING R&D EFFORTS IN RENEWABLE ENERGY AND WATER TECHNOLOGY

As the region's core information technology base continues to expand, the more acute areas of opportunity for significant but uncharted growth revolve around emerging technologies, with subsectors that accommodate both traditional IT services and growing markets such as water and clean technology. While these opportunities currently represent narrow niches, and thus their potential for contributing a large portion of job growth within the overall regional economy over the next five years is similarly constrained, the region offers unique momentum and intellectual capital because of focused investments over the past several years. Furthermore, strong consideration must be placed on the current federal regulatory and policy agenda, one in which fewer federal investments are expected to be made in "green" or "clean" technologies; for example, over the past eight years, billions in federal dollars alone were invested to stimulate the growth of this market but only realized 2% of total statewide employment in 2011. A Brookings study estimated that the federal government spent over \$150 billion on clean tech from 2009-2014, with annual spending dropping from \$44.3 billion in 2009 to \$11 billion in 2014, thanks to a decline in stimulus spending.¹ With less of an emphasis expected on renewables or alternate fuel technologies from 2017-2021, LVGEA and its regional partners should place stronger emphasis and priority on subsectors such as water-focused technology advancements or other emerging technologies less reliant on federal investments in order to reach their full potential. Additionally, opportunities

exist to apply regional successes in research and development for these niche areas, led by organizations such as the Desert Research Institute and WaterStart. In this vein, new opportunities should be cultivated using proven technology via pilot programs to define the value proposition of applications beyond the categories they were designed to support, such as integration of cutting-edge water detection and monitoring systems into technology or telecommunications infrastructure. This type of R&D activity offers tremendous alignment with Internet of Things applications, such as how renewables and related technologies can be integrated into a home-based environment, or in support of manufacturing innovation for companies like food and beverage manufacturers and wastewater or chemical treatment companies heavily reliant on dependable, low-cost water.

EXISTING MARKET PARTICIPANTS WITH HIGH VISIBILITY ACROSS GLOBAL TECHNOLOGY MARKETPLACE

The image of Las Vegas and Southern Nevada as high-tech hubs has grown considerably stronger in recent years. This growing visibility has been led by the strength of core emerging technology companies and the recurring benefits of serving as the annual host of the Consumer Electronics Show (CES) – the global technology-focused trade show – but also supported by strong brands like Zappos, Amazon, Faraday Future and Hyperloop that have established a presence in the region across an array of related industries. Establishing a high-tech image for the region is an important step toward developing the critical mass of talent that companies in this industry need in order to accelerate growth in the region.

A CAPABLE WORKFORCE WITH STRONG INDUSTRY DEMAND AND NEED FOR GROWTH

Growth in this industry has been very strong for Southern Nevada in recent years when measured in employment and the number of firms entering the industry. However, industry demand continues to outpace regional supply for workforce, an issue that must be mitigated through additional investments in and emphasis on cultivating regional degree programs or concentrations rooted in computer science, technology, cybersecurity, and robotics, while encouraging in-migration of non-residents to facilitate continued growth in the region.

¹ Jenkins, Jesse; Murro, Mark; Nordhaus, Ted; Shellenberger, Michael; Tawney, Letha and Trembath, Alex. "Beyond Boom and Bust: Putting Clean Tech on a Path to Subsidy Independence." Brookings. Apr. 2012. Web. 20 Feb. 2017.

IN FOCUS

REGIONAL HIGHER EDUCATION DEGREE PROGRAMS

- **UNIVERSITY OF NEVADA, LAS VEGAS**

- Undergraduate: information management, computer science, computer engineering
- Graduate: management information systems, computer science

- **NEVADA STATE COLLEGE**

- Undergraduate: engineering technology (with computer network, electronics, or telecommunications option)

- **COLLEGE OF SOUTHERN NEVADA**

- Degree programs: computing and information technology, computer office technology

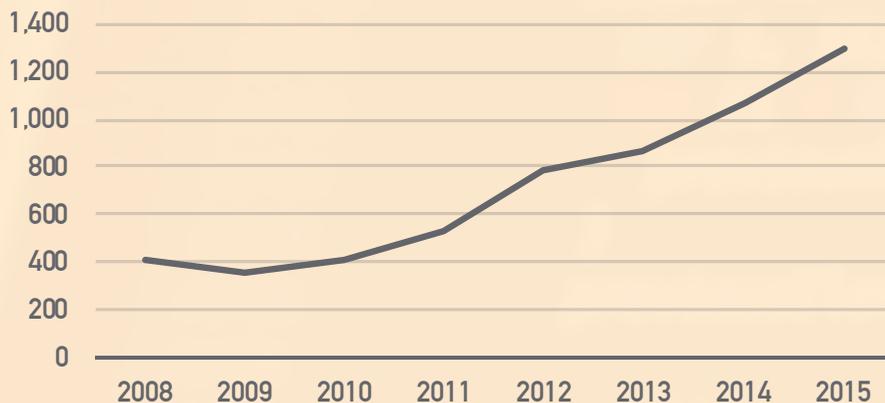
Additionally, the Governor's Office of Science, Innovation and Technology (OSIT) serves a key role in working to meet these inherent workforce demands. OSIT helps with coordinating and aligning efforts by K-12 and higher education institutions, workforce development and employers to improve science, technology, engineering, and mathematics (STEM) education and STEM workforce development in Nevada. In addition to supporting this industry cluster, growth in the region's STEM-related workforce facilitated by these and other efforts will serve to further meet the workforce needs of other target industries or industry clusters, such as Autonomous Systems and Logistics, Manufacturing and Supply Chain Management, with significant shared occupational demand.

OPPORTUNITIES AND THREATS

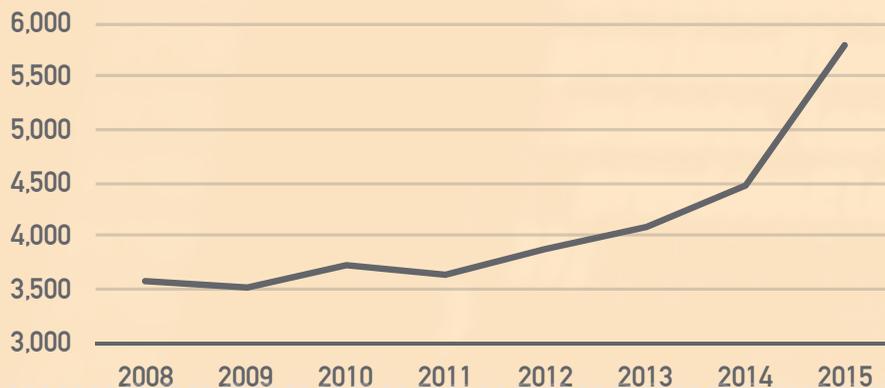
Led by jobs multipliers of 3.36 for **information services, software and data processing** and 2.20 for **computer programming and services**, the “information technology ecosystem” component of this target industry also creates significant indirect and induced opportunities for employment in areas that Southern Nevada is positioned to support with the necessary infrastructure and built-in market demand. In particular,

the growth this industry has seen over the past seven years is primarily due to workforce trends rooted in **data processing, hosting and related services**, catapulting the region from a location quotient of less than 1.0 in 2008 to 2.8 in 2015. Furthermore, over that same timespan, employment in the region has more than tripled (from 409 to 1295), much greater than even the strong national trend of 14% growth since 2008.

EMPLOYMENT IN DATA PROCESSING, HOSTING AND RELATED SERVICES



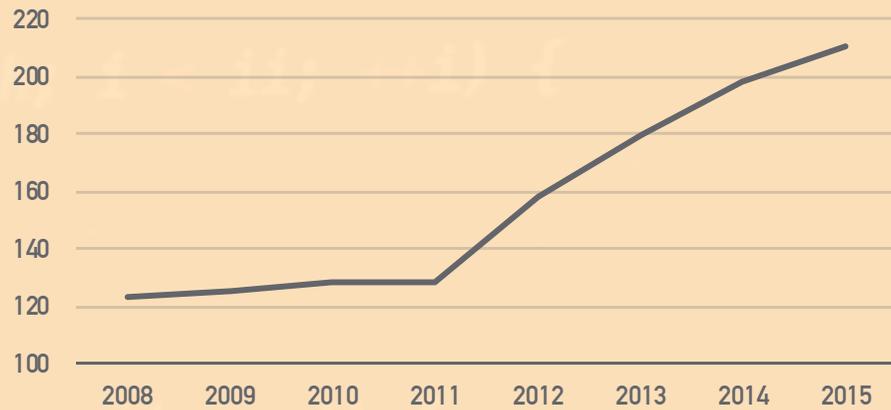
EMPLOYMENT IN COMPUTER SYSTEMS DESIGN AND RELATED SERVICES



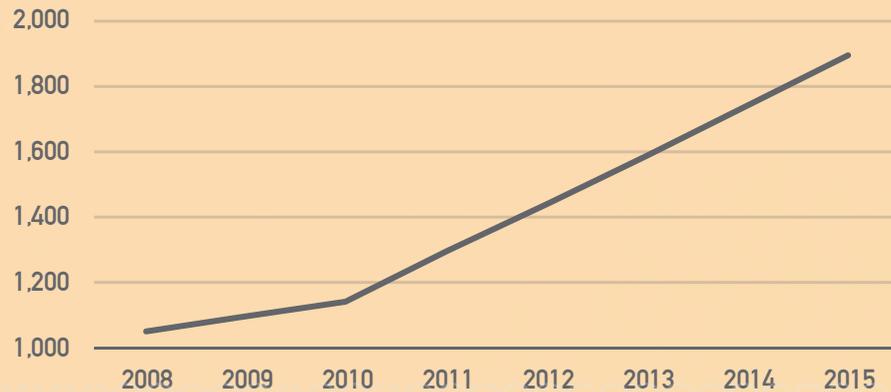
Over this same timeframe, employment has more than tripled in **data processing, hosting and related services**, experiencing 317% growth since 2008 compared to 13.9% growth nationally. Additionally, employment in **computer systems design and related services** has also demonstrated robust growth, with total headcounts at area firms increasing by 61% since 2008 compared to 32% growth nationally.

Total firm activity in this cluster has seen tremendous growth over the past several years, with more than 70% growth in **data processing, hosting and related services** since 2008, compared to 27.5% growth nationally, and more than 80% firm growth in **computer systems design and related services** since 2008, compared to 35.5% growth nationally.

FIRMS IN DATA PROCESSING, HOSTING AND RELATED SERVICES



FIRMS IN COMPUTER SYSTEMS DESIGN AND RELATED SERVICES



Furthermore, 2017 occupational forecast data produced by the State of Nevada¹ identifies in-demand occupations with strong alignment to this target industry cluster, which generally tends to have a wage profile lower than national trends, helping to make the region attractive as a lower-cost place of doing business for firms in this highly competitive industry.

These national and regional employment growth trends for sectors supported by information technology professionals are due in part simply to the proliferation and commercialization of technology solutions in uncharted areas. For example, a 2015 McKinsey Global Institute Report estimates the total potential economic impact of \$3.9 to \$11.1 trillion per year in 2025 for applications of the “Internet of Things” (IoT, or connected devices) and related use cases, as well as the value these technologies realize in terms of “productivity improvements, time savings, improved asset utilization, as well as an approximate economic value for reduced disease, accidents, and deaths.”² A recent Mercatus Center study reviewed several

estimates of potential IoT growth, which provide a consensus view that connected devices are expected to more than double between 2014 and 2019.³ With strong jobs multipliers and a multi-faceted asset mix to promote technology growth in the region, Southern Nevada is well positioned to meaningfully contribute toward becoming a key component of these global economic impact levels. Additionally, the region’s competitive policy and taxing environment – a key component to attracting business headquarters and related services – provides technology companies with a broad base of resources for manufacturing, workforce, logistics, and existing technology infrastructure for the testing and market-based implementation of IoT technologies or applications. The Mercatus Center study also noted likely growth in location-based advertising and connected gaming within the context of IoT, offering additional opportunity for the region to build on core strengths to develop industry-leading expertise in emerging areas.

1 Lamarre, Manny; Potts, Bob; Anderson, Bill. “Nevada Governor Brian Sandoval.” In-Demand Occupations: Leveraging Labor-Market Data with Industry Insights to Strategically Align Nevada’s Education and Workforce. Jan. 2017. Web. 20 Feb. 2017.

2 Manyika, James; Chui, Michael; Bisson, Peter; Woetzel, Jonathon; Dobbs, Richard; Bughin, Jacques; Aharon, Dan. “Unlocking the Potential of the Internet of Things.” McKinsey & Company. June 2015. Web. 20 Feb. 2017.

3 Thierer, Adam; Castillo, Andrea. Projecting the Growth and Economic Impact of the Internet of Things. Mercatus Center at George Mason University. Print.

Source: Top Occupations identified in In-Demand Occupations report from GOED, OWINN and DETR. Salary Data retrieved from CareerOneStop.org, which publishes wage data from Bureau of Labor Statistics, Occupational Employment Statistics Program.

MEDIAN HOURLY WAGE:

| SOURCE | OCCUPATIONAL TITLE | CLARK COUNTY | UNITED STATES | % U.S. WAGE |
|---------|---|--------------|---------------|-------------|
| 15-1199 | COMPUTER OCCUPATIONS, ALL OTHER | \$31.56 | \$40.98 | 77.0% |
| 15-1122 | INFORMATION SECURITY ANALYSTS | \$34.03 | \$43.33 | 78.5% |
| 15-1133 | SOFTWARE DEVELOPERS, SYSTEMS SOFTWARE | \$42.83 | \$50.76 | 84.4% |
| 11-3021 | COMPUTER AND INFORMATION SYSTEMS MANAGERS | \$55.18 | \$63.27 | 87.2% |
| 15-1134 | WEB DEVELOPERS | \$28.80 | \$31.23 | 92.2% |
| 15-1132 | SOFTWARE DEVELOPERS, APPLICATIONS | \$44.31 | \$47.24 | 93.8% |
| 15-1143 | COMPUTER NETWORK ARCHITECTS | \$45.90 | \$48.19 | 95.2% |
| 15-1151 | COMPUTER USER SUPPORT SPECIALISTS | \$22.71 | \$23.38 | 97.1% |
| 15-1121 | COMPUTER SYSTEMS ANALYSTS | \$41.37 | \$41.25 | 100.3% |
| 15-1142 | NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS | \$42.07 | \$37.41 | 112.5% |

TARGET INDUSTRY

Logistics, Manufacturing, and Supply Chain Management

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SECTORS:

- MANUFACTURING
- AIR TRANSPORTATION
- TRUCK TRANSPORTATION
- SUPPORT ACTIVITIES FOR TRANSPORTATION
- WAREHOUSING AND STORAGE
- PROCESS AND LOGISTICS CONSULTING SERVICES



OVERVIEW

The Southern Nevada landscape for manufacturing is one marked by the strong tandem of the region's strategic geographic location and existing assets, including opportunities associated with leveraging development-ready land, industrial capabilities, regional connectivity, and the state's business-friendly tax climate. In particular, the region features a number of established industrial properties, including Apex Industrial Park in North Las Vegas, as well as sites in the planning stage or those that are currently under development, such as in Boulder City. Additionally, the region offers unique assets capable of stimulating additional market activity, including established infrastructure and excess public services in Laughlin, an engaged effort to attract small-to-medium sized manufacturing facilities in Mesquite, and recent successes in Henderson with the development of high-tech manufacturing operations. While some threats exist in the region that may impede more rapid growth in this industry cluster – primarily due to a lack of supporting or costly infrastructure in some areas and concerns surrounding availability of skilled labor – regional market participants have demonstrated resolve over the past several years to mitigate these threats and coordinate with one another to both increase the readiness of the region's infrastructure for development and pursue large-scale manufacturing opportunities like those associated with the planned Faraday Future factory site in North Las Vegas. Furthermore, increased regional capabilities in robotics engineering and information technology help to align this industry cluster around opportunities in advanced manufacturing, while recent economic development successes in warehousing and logistics operations provide additional momentum for the region to pursue significant growth in the coming years.

REGIONAL ASSETS

CONNECTIVITY AND STRATEGIC GEOGRAPHIC LOCATION

Multi-modal connectivity serves as one of Southern Nevada's most evident assets capable of being leveraged across multiple industries, but particularly as it relates to logistics and manufacturing. In addition to the myriad low-cost and direct access routes available through McCarran International Airport, I-15 represents a key shipping and freight corridor for industry participants and the development of I-11 to connect the Las Vegas market with Phoenix – expected to be completed in 2018 – will improve connectivity to nearby markets while opening up new opportunities for logistics, transportation, and warehousing activities and developing the supply chain for existing and potential manufacturing firms. The construction of I-11 also includes restoring rail access to Boulder City and the location of the corridor beyond undeveloped land. In addition, the Boulder City Municipal Airport offers potential for warehousing and distribution in the area. Furthermore, the City of Mesquite offers a strategic location for warehousing firms seeking ready access to I-15 and markets such as Salt Lake City and Los Angeles.

AVAILABILITY OF DEVELOPMENT-READY SITES AND INFRASTRUCTURE

Economic development stakeholders in the region have accomplished a great deal in the coordination around advancing large-scale industrial parks such as Apex, and utilizing those investments to spur market activity. Significant amounts of acreage now exist to support a range of manufacturing-related operations throughout Southern Nevada, particularly those that exist as a result of the supply chain relationship between manufacturing and logistics – sectors that often grow in tandem with one another due to their interrelated activities. However, infrastructure issues such as those involving water, power, and sanitary sewer services still represent challenges that must be addressed holistically as the region further advances activity across these sectors, using successes such as those involving Faraday Future and Apex as a guide for regional coordination to meet industrial and development needs.



RECENT SUCCESSES TO CATALYZE ADDITIONAL INDUSTRY MOMENTUM

In late 2016, Southern Nevada experienced two major economic development successes with Amazon's new fulfillment center in North Las Vegas and The Honest Company's operations facility, collectively representing approximately 1,500 new jobs for the region. However, even prior to these investments, the region's warehousing and storage industry was growing rapidly with 33% employment growth between 2008 and 2015 versus 23% nationally. While it represents a fairly sizable industry in terms of total employment and demonstrates positive growth over time for the region, a large portion of those figures are attributable to supporting the region's economy in general – similar to how hospitals naturally fill a supporting role in an

area's economy. Nonetheless, with strong and low-cost multi-modal transportation options, a burgeoning technology industry, development-ready industrial areas, and geographic proximity to major distribution centers, the region can expect to see continued growth in warehousing and storage over the course of the next five years and should position itself to capitalize on the momentum of recent announcements by Amazon and The Honest Company. Furthermore, Faraday Future's ongoing efforts to establish a 3 million square foot factory site and automotive manufacturing facility – with more than \$160 million invested by the company to-date in site development and equipment – provides additional momentum to industry activity with accompanying visibility and interest on a global level.



OPPORTUNITIES AND THREATS

The logistics, manufacturing, and supply chain management industry cluster benefits from a prime location in the western U.S. with transportation, warehousing, and storage as a leading support target. Employment trends in warehousing and storage validate this position, growing 33.2% from 2008 to 2015. Similarly, the number of firms in the region has grown by 36.9%, indicating that this is a broad-based trend, not simply the success of a single company.

While manufacturing has historically not represented a large share of the Southern Nevada economy, rapid changes in manufacturing processes and the applications of technology and automated services support global industry trends in manufacturers looking to retool factories and modernize related operations. The region's lower-cost, business friendly environment with lower taxes presents an option for companies considering such an investment that may choose to build a new factory or production facility rather than upgrade

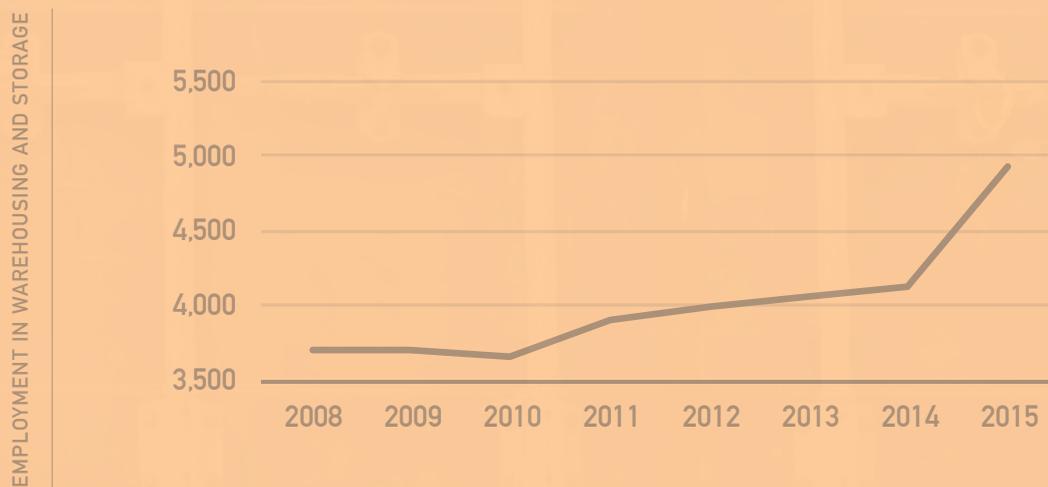
an existing one. This is also true internationally, with companies finding U.S.-based manufacturing to be a competitive choice for operations, with advancements in process automation helping to make U.S. production costs more competitive within the global landscape. The benefits of manufacturing to complement the region's economy are significant and thus should be a core component of long-term economic development strategies given the industry's large jobs multipliers and ability to support a broadened, more diversified economic base through indirect and induced job impacts. Certain industries merit even more specific attention given their alignment with other target industries and the potential for overall job growth, including computers and electronics manufacturing (jobs multiplier of 2.48), transportation equipment (jobs multiplier of 2.10), and communications equipment (jobs multiplier of 1.85). More specifically, opportunities associated with emerging opportunities such as



food manufacturing offer alignment with other target industries such as gaming, tourism, and entertainment, leveraging agricultural assets and ongoing innovation in niches like water technology that offer cross-industry applications to these types of manufacturing activities.

Additionally, while the process and logistics consulting services subsector serves as a niche component of this industry cluster, it is also one that can be considered as an indicator of how well the overarching business services industry is truly expanding to become a regional and national force. Although it currently only includes 100 employees in the region after falling off in recent years, the national trend has demonstrated employment growth of almost 18%, indicating potential room for employment and firm growth if logistics enterprises accelerate and gain traction in the coming years.

While stakeholders have recently demonstrated how regional cooperation can help to address noted infrastructure challenges associated with manufacturing, primarily through the Apex Industrial Park, a significant impediment and ongoing threat to realizing the full potential of manufacturing operations in Southern Nevada revolves around a lack of existing infrastructure. This is particularly true in areas where the costs associated with infrastructure-related investments, such as providing access to energy and water within greenfield sites, may be too cost-prohibitive for a small-to-mid-sized manufacturer to undertake. Additional consideration must continue to be placed by stakeholders on addressing noted infrastructure challenges and ensuring as much alignment as possible surrounding corporate recruitment and economic development efforts in any such areas throughout the region.



TARGET INDUSTRY

Autonomous Systems

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SECTORS:

- ENGINEERING SERVICES
- COMPUTER SYSTEMS DESIGN
- TRANSPORTATION EQUIPMENT MANUFACTURING

OTHER RELEVANT SECTORS:

- AERIAL AND TERRESTRIAL UNMANNED AUTOMATED SERVICES
- HARDWARE AND SOFTWARE DEVELOPMENT
- DEFENSE

OVERVIEW

In 2011, Brookings-SRI recommended the establishment of Aerospace and Defense as a target industry for statewide growth due to anticipated growth and opportunities involving unmanned aerial vehicles (UAVs) and the maintenance, repair, and overhaul of aircraft systems. Much of this focus was rooted in anticipated opportunities for the commercialization of hardware and software developed for U.S. Department of Defense aerial systems, particularly given the region's strong historic defense presence and the natural resources and landscape for testing such technologies. However, in years since, this market has been slower to reach the levels of adoption that would warrant a sustained focus primarily on UAVs. Since 2011, terrestrial unmanned automated systems have experienced more rapid growth with a clearer path toward commercialization. In January 2016, McKinsey & Company issued guidance suggesting an accelerated use of autonomous technology in the automotive industry, stemming from new revenue streams



“driven by shared mobility, connectivity services, and feature updates” with new business models capable of expanding automotive revenue pools by approximately 30% and adding up to \$1.5 trillion. As a region, Southern Nevada is positioned to aggressively pursue a substantial portion of this economic activity and accommodate the industry’s growth through multiple avenues, including the manufacturing, testing, and implementation of autonomous technologies in both hardware and software, with established vehicle-to-infrastructure (V2I) capabilities, a progressive public policy environment, and existing plans for mobility solutions. Furthermore, like the incumbent market presence an industry such as health care represents for the region, the defense sector is – and will continue to be – a significant economic driver for Southern Nevada without primary targeting in the form of traditional economic development efforts, particularly with an expected increase in military spending commitments over the next four years.

As such, this targeted industry features a shift between 2011 and 2017, with a more holistic focus on autonomous systems, leveraging the region’s positioning to become a market leader for the manufacturing, testing, and implementation of terrestrial autonomous vehicle technologies in conjunction with a continued emphasis on growing UAVs, while continuing to cultivate and support efforts to maintain a robust defense sector with corresponding economic activity. Through this shift, this redefined target industry also offers strong alignment with the region’s emerging technology and logistics, manufacturing, and supply chain management categories.

¹ Kaas, Hans-Werner; Mohr, Detlev; Gao, Paul; Muller, Nicolai; Wee, Dominik; Hensley, Russell; Guan, Mingyu; Moller, Timo; Eckhard, Gregor; Bray, Garrett; Beiker, Sven; Brotschi, Alexander; Kohler, Dominic. “Automotive Revolution: Perspective towards 2030.” McKinsey & Company (2016): Jan. 2016. Web. 20 Feb. 2017.

REGIONAL ASSETS

PUBLIC POLICY AND PLANNING

As private sector companies continue to develop autonomous vehicle solutions, policymakers at the local, state, and national levels are similarly working to establish regulations and infrastructure to accommodate the introduction of these solutions to the consumer marketplace. According to Emil Michael, Uber's Senior Vice President for Business, companies like Uber that are actively developing autonomous vehicle solutions are focused on identifying test markets for the deployment and fine-tuning of the underlying technology, recently stating "in most states and cities, there are no rules about driverless cars."¹ To meet these needs, the City of Las Vegas in particular maintains a test-ready grid system for the deployment of terrestrial autonomous vehicles, with built-in V2I capabilities, wired high-speed fiber connectivity, an intelligent street network, and traffic signal improvements. The city also benefits from a well-established framework for mobility solutions in the form of the 2016 Las Vegas Mobility Master Plan and progressive public policies² at the local level. These solutions provide a basis for attracting automotive companies focused on rapid prototyping and technology testing in a high-density environment – particularly given the logistics, density, and policy-related challenges technology companies or manufacturers may experience in other similarly-sized markets. These local policy advancements are complemented by state-level reviews of autonomous-focused policies regarding transportation, including those initiated by Hyperloop as alternative transportation solutions with public policy considerations. Additionally, state-level organizations like the Nevada Institute for Autonomous Systems serve as coordinating and collaborating resources to support ongoing industry growth within the state.

ROBUST DEFENSE SECTOR

Nellis Air Force Base, Creech Air Force Base, and the Nevada Test and Training Range collectively contribute to the employment of more than 14,000 military personnel and civilians with an annual economic impact of \$5.5 billion. As such, the regional defense sector features numerous assets and opportunities to facilitate private sector activity in niches such as aircraft manufacturing, engineering services, and computer design. These defense assets also provide leading capabilities for military intelligence gathering and a source of workforce with transferable skillsets to private sector opportunities, although this alignment must continue to be cultivated by regional stakeholders.

¹ Levy, Ari. "Uber: The Biggest Challenge for Our Self-Driving Cars Is Finding Cities to Test Them in." CNBC. CNBC, 15 Feb. 2017. Web. 20 Feb. 2017.

² City of Las Vegas. Resolution Establishing Downtown Las Vegas as an Innovation District for Purposes of Promoting and Adopting New Transportation Infrastructure and Mobility Technologies. 2016. Web. 20 Feb. 2016.

EXISTING RESOURCE MIX AND RELATED INFRASTRUCTURE

While the global UAV industry has been slow to reach significant levels of commercialized success, Southern Nevada possesses some of the most relevant and necessary resources to support continued growth as part of a balanced target industry focus on automated systems. These resources include aerial and drone testing sites in Boulder City, Henderson, and Mesquite with a wide range of geographic features and mix of proximity to urban and rural areas. Additionally, the region's climate and landscape provide an ideal testing environment where visibility and predictability are essential. In terms of cross-industry alignment, Faraday Future's planned manufacturing plant for the Apex Industrial Park represents an important cornerstone for electric vehicle manufacturing, a component of the automotive industry with a strong correlation to the deployment of autonomous systems, while additional development-ready land and sites offer similar manufacturing capabilities for the hardware that can be powered through the integration of autonomous systems.

SIGNIFICANT RESEARCH AND WORKFORCE CAPABILITIES

Much work has been done in research and development activities to support the growth of UAV technologies and capabilities, creating a strong workforce competency in autonomous systems, matched by higher education efforts to grow capacity and establish a leading research position in areas such as robotics, including those capabilities offered through UNLV's College of Engineering Robotics Lab. The continued cultivation of these capabilities is a critical component to continued growth in automated systems for the region, particularly given the fierce competition for talent and workforce among companies developing automated vehicle solutions. Sebastian Thrun, founder of Google's self-driving car team and Stanford University computer science adjunct professor, estimated the "going rate" for experts in computer vision, robotics, intelligent systems and artificial intelligence reached \$10 million in late 2016,³ further demonstrating the impact such workforce capabilities can create in terms of attracting private sector economic activity to lower-cost areas.

³ Bhuiyan, Johana. "Ex-Googler Sebastian Thrun Says the Going Rate for Self-Driving Talent Is \$10 Million per Person." Recode. Recode, 17 Sept. 2016. Web. 20 Feb. 2017.

OPPORTUNITIES AND THREATS

Given the autonomous systems industry cluster is one that features many niche categories, little comparative historical data is available to identify workforce and private sector growth trends and related opportunities. However, much research and forecasting has been done and continues to progress as these underlying subsectors rapidly evolve.

In May 2016, PricewaterhouseCoopers authored a report focused on the commercial applications of drone technology, estimating the 2015 global market value of manufacturing civilian drones at \$1.4 billion; however, estimates involving the addressable market value of drone powered solutions suggest a potential market value of \$127 billion.¹ Additional and significant estimated value exists with terrestrial autonomous applications, including \$1.5 trillion in expanded automotive revenue pools. Although the full realization of these revenues and the resulting economic impact each set of revenues creates in its respective regional environment may not exist until 2025, industry experts suggest testing and development activities to support this full deployment of vehicles and related technologies will continue to advance rapidly.² According to Morgan Stanley, in a June 2016 Blue Paper report titled, “Global Investment Implications of Auto 2.0,” early adoption opportunities for autonomous vehicles are most pronounced in narrowly defined geographic zones like a city center,³ offering strong alignment with existing assets in the City of Las Vegas to support such deployment.

Additionally, the industry is poised to grow in tandem with other target industries such as emerging technology and logistics, manufacturing, and supply chain management due to the alignment between the underlying categories. The phrase “changing car” represents a number of embedded trends, including those involving electronic car manufacturing, which require 11,000 parts compared to 30,000 parts for a gasoline car.⁴ As companies are finding it easier to establish manufacturing facilities in a new location further from the traditional automotive parts supply chain – such as the early success of Faraday Future’s decision to establish a production facility in North Las Vegas – the region should aggressively pursue new manufacturing opportunities related to autonomous systems given the breadth of available sites and manufacturing capabilities and potential benefits of having design, testing, and manufacturing all concentrated in the same region.

1 Mazur, Michael; Wisniewski, Adam; McMillan, Jeffery. “Clarity From Above.” Drone Powered Solutions. PricewaterhouseCoopers, May 2016. Web. 20 Feb. 2016.

2 “The Driverless, Car-sharing Road Ahead.” The Economist. The Economist Newspaper, 09 Jan. 2016. Web. 20 Feb. 2017.

3 “Auto Industry Is Ripe for Disruption.” Morgan Stanley. Morgan Stanley, 16 Apr. 2016. Web. 20 Feb. 2017.

4 “Cars 2025.” Goldman Sachs. Goldman Sachs, Web. 20 Feb. 2017.

TARGET INDUSTRY

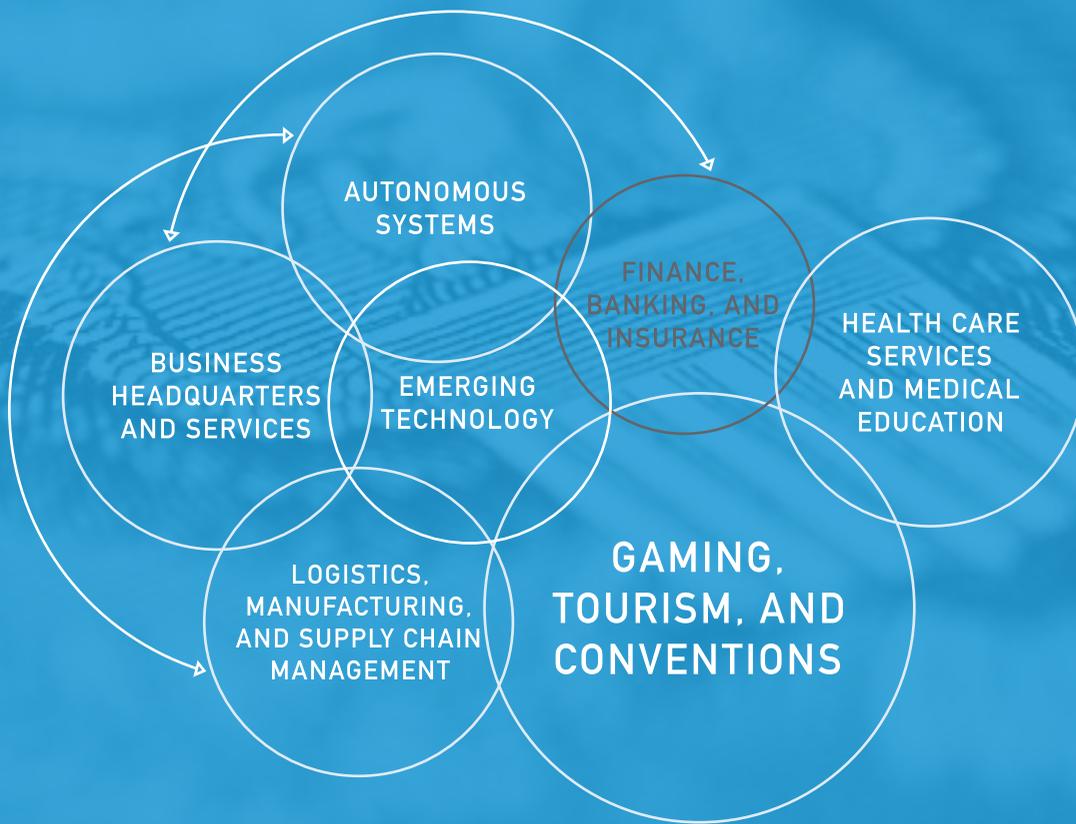
Finance, Banking, and Insurance

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SECTORS:

- CREDIT INTERMEDIATION AND RELATED ACTIVITIES
- SECURITIES, COMMODITY CONTRACTS, AND INVESTMENT
- INSURANCE CARRIERS AND RELATED ACTIVITIES

OVERVIEW

The finance, banking, and insurance target is one that should remain relatively similar to the existing focus on target growth opportunities in this cluster for Southern Nevada over the course of the next five years. The region's position as a leading convention and trade show destination brings global businesses from a wide array of industries to Southern Nevada on a regular basis, and the region remains poised to leverage this opportunity to attract global capital across a variety of finance-related activities. However, the underlying assets that make Southern Nevada an attractive location for companies in finance and banking apply equally well to regional and national companies, as well as companies in the closely related insurance industry. In addition, Southern Nevada benefits from state policies that offer unique advantages to expand lending services in an evolving federal policy environment. Southern Nevada also benefits from sustained growth and opportunity in financial and banking, the region has seen strong growth in insurance-related activities with health insurance carrier employment growth of 30% between 2008 and 2015. Stakeholders in the region should work to continue to build on that recent success by facilitating growth in insurance carriers and associated services.



REGIONAL ASSETS

HIGHLY UNIQUE AND ACCOMMODATING REGULATORY ENVIRONMENT

Nevada is one of only two states that actively charters Industrial Loan Companies (ILCs). ILCs offer commercial firms an opportunity to establish a direct financing mechanism to help facilitate product sales and bridge the regulatory divide separating banking and commercial activity. Nevada currently has four industrial banks, including USAA Savings Bank, Beal Bank USA, Toyota Financial Savings Bank and Eaglemark Savings Bank (owned by Harley-Davidson). Federal approvals for new ILCs have frozen since the Federal Deposit Insurance Company (FDIC) became increasingly concerned about the FDIC's limited ability to supervise an ILC's parent company. However, the emerging regulatory environment of the Trump Administration is expected to reduce regulations and return to a more streamlined review and approval process, making ILCs a prime target for developing new business activity in the coming years, with a tremendous downstream economic impact.

GLOBAL AND REGIONAL CONNECTIVITY

The high degree of connectivity provided by McCarran International Airport provides 145 nonstop destinations, including domestic and international locations. This regional asset can help facilitate travel for client meetings around the world as well as provide easy access for investors and clients coming to the region. With an existing base of 5.9 million international visitors,¹ and 42.3 million total visitors in 2015² – including a large number of business travelers – Southern Nevada can leverage the existing flow of business executives to help grow the finance and banking by recruiting banks to handle personal banking needs as well as financing companies that can be well positioned to host face-to-face meetings with executives already coming to the area. The region's geography also provides highway access within a one-to-two-day drive for much of the western U.S. and particularly easy access to California. Additionally, while the region is at relatively low risk of earthquakes³ and many other natural disasters, Southern Nevada can be an attractive location for insurance carrier services and claims adjusters that exist as centralized resources to support emergency or disaster response efforts.

1 "Las Vegas International Visitation Estimates." Las Vegas Convention and Visitors Authority. 17 Nov. 2016. Web. 19 Feb. 2017.

2 "Final Report and Recommendations." Southern Nevada Tourism Infrastructure Committee 4.03 (2016): Southern Nevada Tourism Infrastructure Committee. 27 Sept. 2016. Web. 19 Feb. 2017.

3 "USGS Forecast for Damage from Natural and Induced Earthquakes in 2016." USGS. Web. 20 Feb. 2017.

LOW TAX ENVIRONMENT

Much in the same way the general pro-business tax environment facilitates recruitment efforts across many industries, Nevada's statewide tax environment provides a competitive advantage in recruiting finance and insurance companies. These companies are less dependent on nearby access to natural resources for production and can be successful in any large metropolitan area with efficient transportation to facilitate client and company access, both within and outside of the region. With a business tax climate ranking ranked 5th nationally – higher than any of Nevada's neighboring states in the western U.S. – this policy environment has already proven to be a tremendous asset, helping tip the scales in company location decisions that are more reliant on availability of commercial real estate and workforce, both of which are readily available in Southern Nevada. The recent passage of the statewide commerce tax, which taxes businesses based on gross receipts rather than income, could be seen as a limiting factor in this industry given the proportionally large volumes of money traded in finance and insurance activities; however, the law was structured with differentiated tax rates across industries and certain exclusions, including interest and dividend income, which have kept the overall business tax climate in Nevada ranked as one of the best in the nation.

WORKFORCE COMPETENCY IN BUSINESS SERVICES

As a global leader in gaming, Southern Nevada has well-developed workforce competencies in accounting and finance. In addition to gaming, the number and size of other hospitality-related businesses has led post-secondary institutions in the region to develop high quality programs in accounting, finance, legal, and other professional occupations. Moreover, the visibility of opportunities in these occupations has attracted many students to these fields and generated a large, steady pipeline of talent that can help new finance and insurance businesses grow rapidly.

OPPORTUNITIES AND THREATS

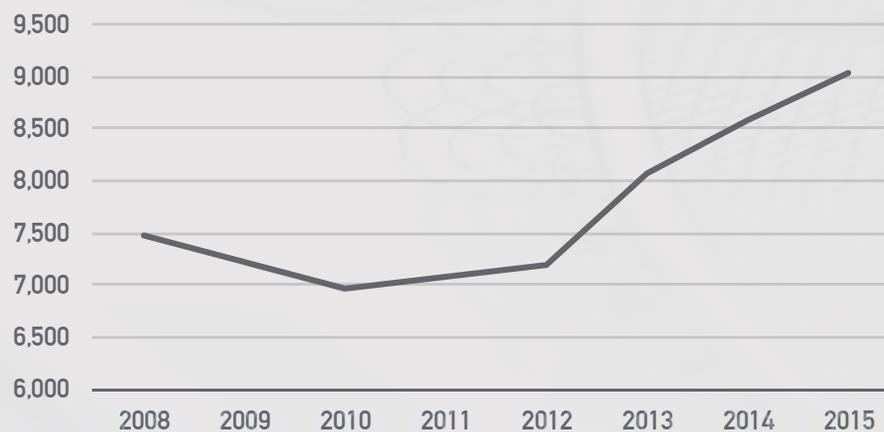
One of the more unique, emerging opportunities for this industry involves the combination of an existing component to the state's policy mix that serves as a differentiated competitive asset and an expected pivot under the Trump Administration that focuses on reducing business regulations to facilitate economic growth. Nevada is one of only two states actively chartering and working to establish new industrial banks in the form of ILCs. The state's existing ILCs include three located in Southern Nevada: USAA Savings Bank, Beal Bank USA, and Toyota Financial Savings Bank. All three have been successful in the region and rank highly among the nation's largest ILCs. Helping establish new ILCs brings a core set of jobs within the bank, but perhaps more importantly presents an opportunity for a much larger set of back-office business services to support the ILC's operations. ILCs also bring new capital into the region to promote community development in order to meet Community Reinvestment Act requirements. In addition, new ILCs create a local presence for national and international companies that can be leveraged to recruit other company operations to the region. While industrial banks serve as an emerging growth opportunity for this industry, it should be treated as a medium-to-long-term strategy as the new federal regulatory environment takes shape.

In addition to the very unique opportunity offered by ILCs, global banking has been experiencing somewhat of a revival in the United States, with Nevada as a leading example of success. After many years in which American wealth was drawn to countries with strong privacy protections, the United States passed the Foreign Account Tax Compliance Act (FACTA) in 2010, requiring banks to disclose information on accounts held by U.S. citizens.¹ Inspired by the success of FACTA, the Organization for Economic Co-operation and Development (OECD) created a similar set of standards for international reporting and has encouraged 97 jurisdictions to impose those disclosure regulations; however, the United States has declined to participate and thus does not require domestic banks to provide similar reports to other countries.² These recent trends have helped the U.S. experience a resurgence as a global financial center, with banks establishing new locations in Nevada. Southern Nevada is further positioned to take advantage of this opportunity given the global connectivity provided by McCarran International Airport.

¹ "Summary of FATCA Reporting for U.S. Taxpayers." IRS. IRS, Web. 20 Feb. 2017.

² Drucker, Jesse. "The World's Favorite New Tax Haven Is the United States." Bloomberg.com. Bloomberg, 27 Jan. 2016. Web. 20 Feb. 2017.

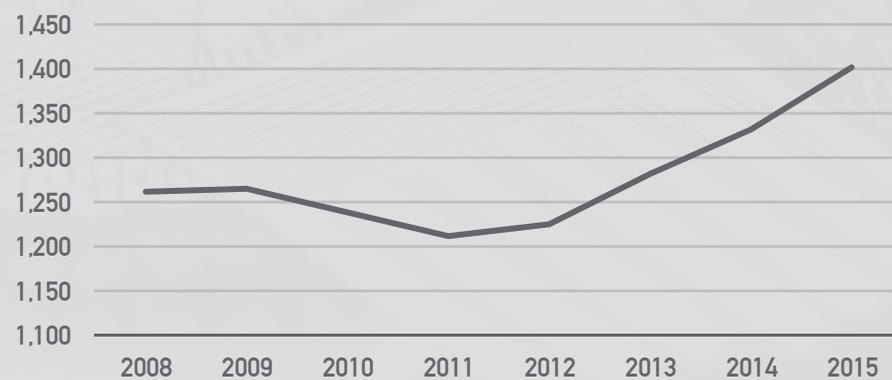
EMPLOYMENT IN INSURANCE CARRIERS AND RELATED ACTIVITIES



In addition to specific targeted opportunities in finance, recent growth in insurance and strong alignment between finance and insurance in supporting assets – including workforce – make insurance a logical extension of a focus in developing new financial business activity. Growth in insurance-related services has been particularly strong within the broader finance and insurance sector, with employment increasing by 20.5% since 2008 and number of firms increasing by 11% over the same period. While much of the recent growth in insurance can be attributed to the surge in health insurance carrier activity stimulated by increased support for privately purchased insurance through the

2010 enactment of the federal Affordable Care Act (ACA), recent growth in the Southern Nevada insurance industry is also compounded by 37% employment growth over the same time period in **claims adjusting** and 58% growth in **third party administration of insurance funds**. The rapid growth of these two subsectors suggests an opportunity for the region to further establish itself as a financial and insurance service center, considering how much stronger the region has performed compared to national trends in subsectors such as claims adjusting, which grew only 4.7% nationally over the same time period.

FIRMS IN INSURANCE CARRIERS AND RELATED ACTIVITIES



TARGET INDUSTRY

Health Care Services and Medical Education

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SECTORS:

- HOSPITALS
- AMBULATORY HEALTH CARE SERVICES
- NURSING AND RESIDENTIAL CARE FACILITIES

OVERVIEW

As a base industry, health care is not typically considered to be an economic driver itself; nearly every community has some minimum level of healthcare assets that by default create jobs and promote marketplace activity. Oftentimes, economic development organizations are most effective when stakeholders are able to inform policies or workforce development efforts that help industries grow and build a stronger asset base for business recruitment, as opposed to only focusing on business recruitment. This is as true in an area with the population of Las Vegas or the Southern Nevada region as it is in much smaller or more compact communities. For example, while the Las Vegas Medical District serves a key role for the region and overall healthcare sector in guiding investments, asset development, and coordinated service delivery, the district itself is more a component of overall economic growth and quality of life, as opposed to a growth catalyst for emerging opportunities. This type of cultivation is an important component of long-term economic growth for the region.



Additionally, unique opportunities exist in Southern Nevada to go beyond a more traditional supporting role in health care and pursue a more focused economic development strategy around health care services and medical education. These services are supported by a mix of assets and data-based trends, ranging from retirees choosing the region due to lower cost of living compared to nearby states, available amenities in areas like Laughlin and Mesquite, and large scale age-restricted planned communities in and around Las Vegas. The region also benefits from a favorable climate, inexpensive direct air connectivity, and a favorable statewide tax environment, including no personal income tax. Health care is a central component in attracting retirees and is poised to facilitate rapid growth through an aging baby boomer generation. To accomplish this, regional stakeholders will benefit from working to establish a reputation for excellence in health care, which has received a boost from cancer research and clinical trials taking place through the Cleveland Clinic's Lou Ruvo Center for Brain Health. Moreover, as one of the world's leading tourism destinations, Southern Nevada has opportunities for the convergence of specialty destination medical and wellness services and tourism-related area assets.

Noted workforce shortages within the healthcare industry serve as cautionary guidance surrounding pursuing a "destination health care" strategy too quickly without the necessary resources and infrastructure to accommodate the needs and expectations of those receiving any such services and risk diminishing the credibility of the region's brand. Instead, Southern Nevada should continue moving along the current growth trajectory of establishing the necessary partnerships and cultivating workforce capacity across the region, building on successes in destination-related strategies such as attracting medical meetings as a function of tourism but one that thereby contributes positively to the regional brand for health care, and cultivating emerging components to this market in areas such as destination wellness services, concierge medicine, telemedicine, and medical education.

REGIONAL ASSETS

SUPPORTIVE PLANNING AND INFRASTRUCTURE

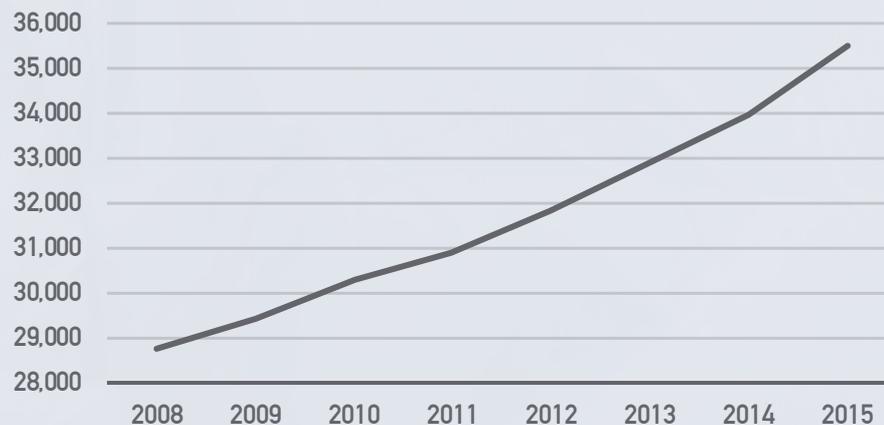
From a regional perspective, Southern Nevada features a number of natural and policy-related assets attractive to individuals seeking a destination for permanent residency where health care capabilities are a central concern, such as for retirees. Additionally, an existing master plan for health care in Las Vegas serves to organize development and serve as an anchor point to drive growth while also promoting a positive regional brand for a variety of healthcare capabilities. The VA Southern Nevada Healthcare System provides key services to the area's more than 200,000 veterans and has the potential to provide specialty services to many more from outside of the region given the high degree connectivity. While the region's tourism market and embedded health and wellness capabilities suggest potential for an emerging subsector such as medical tourism, a lack of integrated service delivery and an overarching lack of qualified medical professionals to

provide such services serve as cautionary guidance that any focus on growth in medical tourism should be medium-to-longer-term, with strategies and resources prioritized more toward focusing on opportunities where likelihood for shorter-term growth is most evident (e.g., nursing and residential care facilities). As this medical tourism subsector begins to mature, regional assets such as a strength in existing wellness capabilities in spas along the Las Vegas strip, concierge medicine for tourists, and medical meetings and conventions can be more effectively leveraged toward business recruitment while maintaining the current, tourism-focused "destination" brand for the region.

A SHORT STAY FOR SPECIALTY SERVICES

An individual's healthcare decisions and health history are some of the most private pieces of information that exist. In fact, federal privacy laws surrounding medical records are some of the strictest for protecting personal information. Because of the region's unique

EMPLOYMENT IN AMBULATORY HEALTH CARE SERVICES

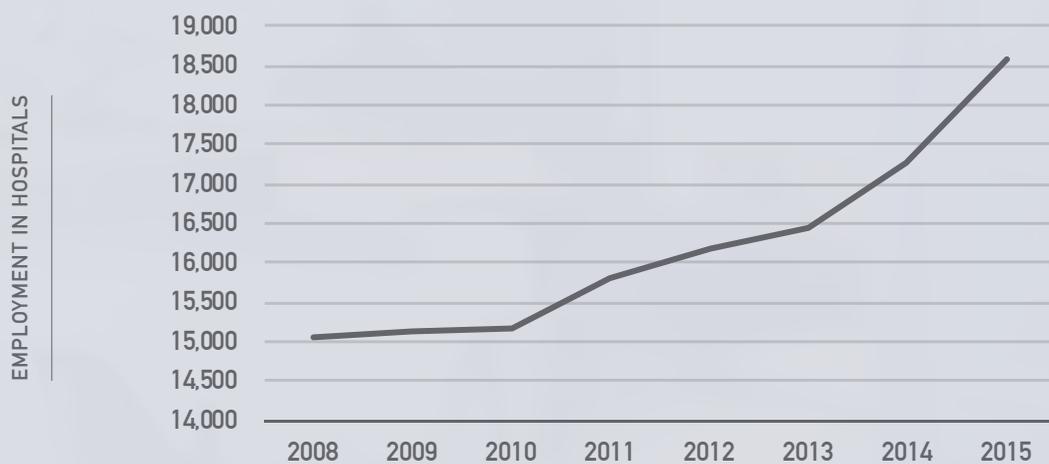


location within a one-to-two-day drive of much of the western U.S. and the high degree of connectivity provided by McCarran International Airport, the region is well positioned to provide healthcare services that an individual would feel more inclined to keep private. The region also has the technological expertise – which continues to grow – to utilize telemedicine capabilities to facilitate pre- and post-operative check-ups. The types of services best suited to medical tourism in Southern Nevada would include non-invasive or minimally invasive procedures in plastic surgery, bariatric surgery, and fertility services.

PLANNED EFFORTS TO GROW REGIONAL MEDICAL WORKFORCE

Regional stakeholders recognize the lack of a qualified workforce to adequately grow a variety of healthcare-related subsectors. In the short-term, with employment needs ranging from physicians and registered nurses to medical scientists and researchers, these same

stakeholders note the opportunities to address such a deficiency through planned efforts and collaboration with area higher education institutions. For example, the UNLV School of Medicine is scheduled to begin with its first class in the fall 2017 semester while plans are in place for another medical school at Roseman University College of Medicine, in addition to the existing Touro University Nevada College of Osteopathic Medicine. These efforts should continue moving forward in order to meet the needs of industry while positioning residents and recent graduates for employment placement in high-paying, highly-specialized jobs. Collectively, the sustained growth of these medical schools and related programs will serve as a valuable input toward catalyzing the growth of all medical-related services, expanding access to care and creating additional opportunities in emerging subsectors with cross-industry potential such as those that exist in medical research.



OPPORTUNITIES AND THREATS

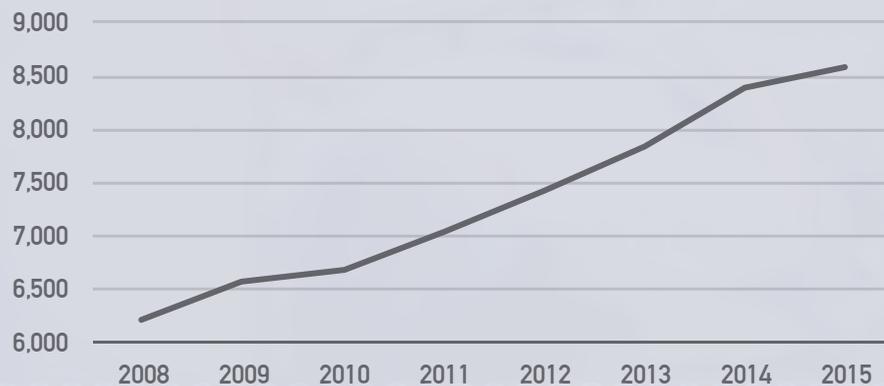
Overall, the region's location quotient for health care is 0.60 – and, more specifically, 0.56 for **hospitals**, 0.76 for **ambulatory health care services**, 0.38 for **nursing and residential care facilities**, and 0.34 for **research in physical, engineering, and life sciences**. As with any community, health care is a critical industry for diversifying the economy and providing a more competitive environment in terms of community assets and quality of life. As outlined below, health care industry performance has grown rapidly in recent years, raising the location quotient closer to 1 and featuring strong growth trends exhibited between 2008 and 2015 across all three major growth subsectors within the health care category, including 23.5% growth in ambulatory health care services, 23.5% growth in hospitals, and 37.9% growth in nursing and residential care facilities.

Nursing and residential care facilities have historically maintained a relatively low location quotient – only 0.29 in 2008 – but the subsector has seen rapid growth of 26.5% between 2008 and 2015, suggesting an opportunity for growth even if just to support the current population in need of such services. However, when compounded with a focus on targeting retirees using the region's natural assets such as a warm climate, low cost of living, strong air connectivity, and a high-performing overall health care sector, the opportunity for destination health care offers tremendous growth potential across a variety of subsectors necessary to meet the needs of this growing demographic.

The historical trajectory demonstrated by ambulatory and health care services has been driven by significant growth in the number of facilities operating in this industry, with the number of regional firms in this subsector increasing more than 50% since 2008. Due to the relative size of these subsectors, these recent gains have already contributed substantial numbers of jobs to the regional economy – 12,645 new jobs across these three growth-oriented components of this industry cluster – further demonstrating the potential value of continued growth in this area.

Additionally, while residential housing suffered during the Great Recession and the decline of the housing bubble, construction employment data indicate a regional housing recovery nearing pre-recession levels that is now capable of supporting expanded residential offerings, including, but not limited to, retirement communities and long-term care facilities. Residential construction employment was growing rapidly before the housing bubble burst and the recession set in – falling to a low of 2,400 jobs in 2012, but has steadily increased since – up to 4,200 jobs in 2015. As it relates to supporting opportunity scenarios for retirement communities and residential care facilities, a recent study by SmartAsset Tools examined 2014 US Census Bureau data on migration patterns for those ages 60 and over

EMPLOYMENT IN NURSING AND RESIDENTIAL CARE FACILITIES



and found Nevada to be a top 10 retirement destination,¹ while a 2016 National Movers Study by United Van Lines indicates that 32.4% of inbound residents move due to retirement, ranking Nevada 2nd in terms of inbound retirees, behind only Florida.² Regional economic development officials can leverage the opportunities embedded within these trends and rankings to continue cultivating planned retirement communities with age restrictions, thereby attracting more retirees to the region and encouraging additional economic activity among companies or individual practitioners.

Finally, as noted in the Las Vegas Regional Strategic Plan for Health & Wellness Travel,³ estimates of the size and future growth of the global market for medical tourism vary considerably. However, there is no doubt that an opportunity exists, albeit one that appears to be more medium-to-longer-term. Recent studies project the global value of medical tourism at \$50 billion annually, with growth potential toward \$170 billion

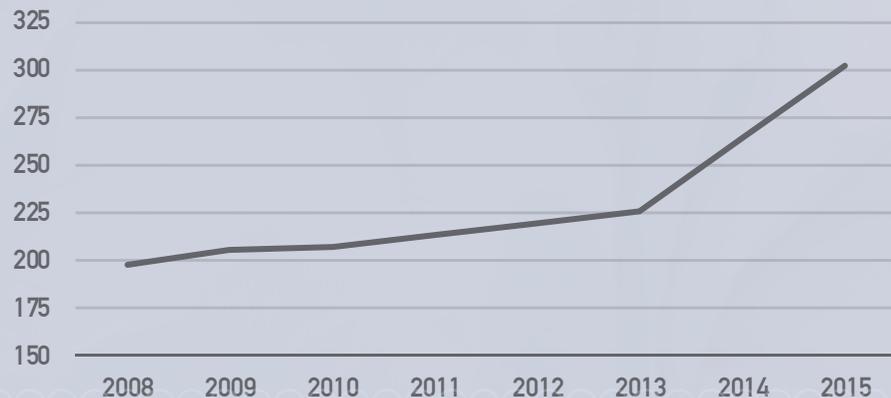
over the next decade and the global wellness industry worth upwards of \$500 billion annually. As a point of comparison, in 2015, the International Healthcare Research Center and Global Healthcare Resources authored a study assigning a global value of \$439 billion to medical tourism. It is clear that at the present time, Southern Nevada continues to struggle to compete on the basis of low cost while the region must continue making progress in order to develop a reputation for the level of world-class expertise that would attract consumers, and thus spur new economic activity on the basis of quality. However, the underlying consumer demand to combine certain medical treatments with an appealing tourist destination positions the region to be increasingly competitive in this area, with a short-term focus on attracting visitors regionally for a more limited set of specialty services, along with long-term potential to grow as the area’s medical schools mature and help establish a larger cluster of expertise.

1 Wallace, Nick. "Where Are Retirees Moving?" SmartAsset. N.p., 04 May 2016. Web. 20 Feb. 2017.

2 "2016 National Movers Study." United Van Lines. Web. 20 Feb. 2017.

3 Shoemaker, Stowe; Geizner, Douglas; Gordon, Michael; Farrow, Vince; Smith, Cheryl. "Las Vegas Regional Strategic Plan for Health & Wellness Travel." Las Vegas Regional Strategic Plan for Health & Wellness Travel Las Vegas Heals. 2 June 2016. Web. 20 Feb. 2017.

FIRMS IN NURSING AND RESIDENTIAL CARE FACILITIES



TARGET INDUSTRY

Gaming, Tourism, and Conventions

RELEVANT NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) SECTORS:

- AMUSEMENTS, GAMBLING AND RECREATION
- ACCOMMODATION
- FOOD SERVICES AND DRINKING PLACES
- PERFORMING ARTS AND SPECTATOR SPORTS

OVERVIEW

As a tourism capital of the world, one of Southern Nevada's top-performing industries over time has been gaming, tourism, and conventions. In 2015, the cluster was represented by a location quotient of 2.7, which is based on 2015 Quarterly Census of Employment and Wages via regional and national employment data for the following subsectors – amusements, gambling and recreation; accommodation; food services and drinking places; and performing arts and spectator sports. With such high employment levels and strong performance relative to that of the U.S., there is no doubt that the industry and its supporting activities should continue to drive economic growth in the region for years to come. From an overarching industry perspective, this industry cluster will likely continue to function in a nation-leading capacity with limited involvement or influence from economic development agencies, particularly given its relative size and maturity. Instead, economic development efforts should focus on continued diversification beyond core industry components and growth of emerging areas. This is especially true for opportunities with cross-industry alignment, such as eSports and online competitive gaming, as significant economic potential exists for the region in gaming as well as components of the region's emerging technology industry. Security applications, gaming equipment, film and other emerging categories offer similar and unique opportunities to leverage existing area assets within a well-defined industry cluster to support sustained growth.



REGIONAL ASSETS

POLICY ENVIRONMENT FOCUSED ON CULTIVATING HIGH-GROWTH GAMING

While traditional gaming continues to occupy a large portion of current industry activity, the full potential of this sector is further buoyed by recent regulatory tweaks by the Nevada Gaming Control Board to accommodate eSports betting in the state. Recent market analyses suggest the growth of the global eSports category will generate \$1.1 billion in 2019, with \$352 million in 2015 revenues alone.¹ The region is poised to claim a large portion of this economic activity due to the potential for in-casino and on premise eSports tournaments and alignment with the region's most visible industry brand and the resulting visitor activity. This opportunity is further supported by workforce partners at higher education institutions such as UNLV – where degree programs offer specialized gaming design classes for hands-on learning and the packaging of industry-specific innovation projects or solutions – as well as the University of Phoenix's RedFlint business incubator and technology hub in Las Vegas.

¹ Global Esports Market Report: Revenues to Jump to \$463M in 2016 as US Leads the Way." Newzoo. 25 Jan. 2016. Web. 20 Feb. 2017.

DIVERSIFICATION AND INNOVATION ACROSS REGIONAL MARKET PARTICIPANTS

While the City of Las Vegas maintains a large portion of the region's employment and private firms in this industry, other parts of the region are actively working to integrate a diversified, niche-based approach to facilitate growth and an expanded local tourism industry. In Boulder City, a recent study on adventure tourism outlined opportunities to more strategically leverage local assets such as proximity to Lake Mead National Recreation Area, while Mesquite is actively working to develop a tourism niche rooted in sports complex hoteling. These and other similar efforts should continue to be cultivated as they represent an opportunity to diversify the industry while broadening opportunities for sustained growth across the entirety of the region.

STRONG, COLLABORATIVE PARTNERSHIPS BETWEEN AREA ECONOMIC DEVELOPMENT AND TOURISM AGENCIES

LVGEA, GOED, LVCVA, and other related agencies maintain strong working relationships that are often instrumental components in pursuing opportunities for economic development in the industry. Most importantly, a formal memorandum of understanding (MOU) between LVGEA, GOED, and LVCVA supports LVCVA's ongoing operations of the nation's only convention center designated as a World Trade Center site. Additionally, dedicated staff resources at LVCVA serve valuable roles in helping to incubate subsector economic activity and supporting lead generation efforts, such as those involving medical tourism.

POTENTIAL INTRODUCTION OF NEW ASSETS TO STIMULATE NEW MARKET ACTIVITY

Southern Nevada stakeholders continue to pursue opportunities related to the relocation of professional sports franchises to Las Vegas. These opportunities bring significant tourism and related economic impacts to the region. The region took a major step forward with the recent announcement of an NHL expansion team that will begin play in Las Vegas during the 2017 to 2018 season. In addition, the region is actively working to bring an NFL franchise to the region. According to a 2016 study commissioned by the Southern Nevada Tourism Infrastructure Committee, the economic impact created by the development and operations of Las Vegas Stadium would realize an estimated \$620 million in annual economic impact and recurring direct, indirect and induced employment of 5,982 jobs – all of which are independent of the significant one-time impacts during the stadium’s construction phase.² While the benefits to short- and long-term industry performance for tourism and related sectors are clear, any such recurring economic impact will likely also be realized through other sectors that stand to gain through support or indirect services, including niche opportunities in categories such as building regional capacity for sports medicine or investing in automated transportation solutions for high-volume sporting events.

² “Final Report and Recommendations.” Southern Nevada Tourism Infrastructure Committee 4.03 (2016); Southern Nevada Tourism Infrastructure Committee. 27 Sept. 2016. Web. 19 Feb. 2017.

HIGHER EDUCATION, WORKFORCE AND INDUSTRY ALIGNMENT

Given the industry’s historical performance and size of the workforce it employs, higher education institutions in the region serve a valuable role in helping to continue supplying a local workforce while working with industry participants to bring innovation to these and related sectors. For example, UNLV offers both an undergraduate and graduate degree in hospitality management with various areas of concentration, while the College of Southern Nevada offers degree or certificate programs in hospitality management, hotel management, casino management, tourism, convention and event planning, and engineering technology for slot technology technicians. In particular, UNLV knowledge fund projects use students to help industry partners develop new table games and introduce innovation into areas such as applied data analytics and cybersecurity application development. The innovation generated by these types of industry partnerships also offers exportability to other markets, generating new revenues external to the regional market.

OPPORTUNITIES AND THREATS

As outlined above, the industry's location quotient of 2.7 in 2015 represents significant employment activity beyond that of the rest of the nation. Although an analysis of location quotient data between 2008 and 2015 indicates a modest decline over time, relative employment is still holding strong at such levels that this type of decline is not necessarily a negative indicator of overall industry performance. The industry's absolute numbers continue to increase, visitation has grown, and the spillover possibilities into other sectors are so high that there is potential for some of this decline to be more a reflection of success in diversification of the regional economy and faster growth elsewhere. This growth is combined with subtler shifts such as the potential for some casino or hotel jobs to be classified as "retail," providing shops rent space and hiring employees separately rather than providing "in-house" services using casino or hotel employees.

The industry continues to excel in areas such as trade shows; in 2015, Las Vegas hosted 54 of the nation's 250 largest trade shows and earned the Trade Show News' top ranking for the 22nd consecutive year. LVCVA continues to advance components of the industry that have strong correlations to both tourism's performance and those regional sectors positively affected by bringing thousands of market participants to the area through trade shows. This concept of cross-industry alignment is evident across these target industry recommendations, but particularly within this category given the manner in which emerging opportunities such as eSports, security applications, and technology development stand to positively impact growth within other target industries.

Additionally, the region's substantial number of inbound travelers provide opportunities focused around the implementation of international business development strategies, leveraging cultural alignment that may exist in the region toward identifying foreign countries with similarities in target industries, and thus potential for corporate recruitment.





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