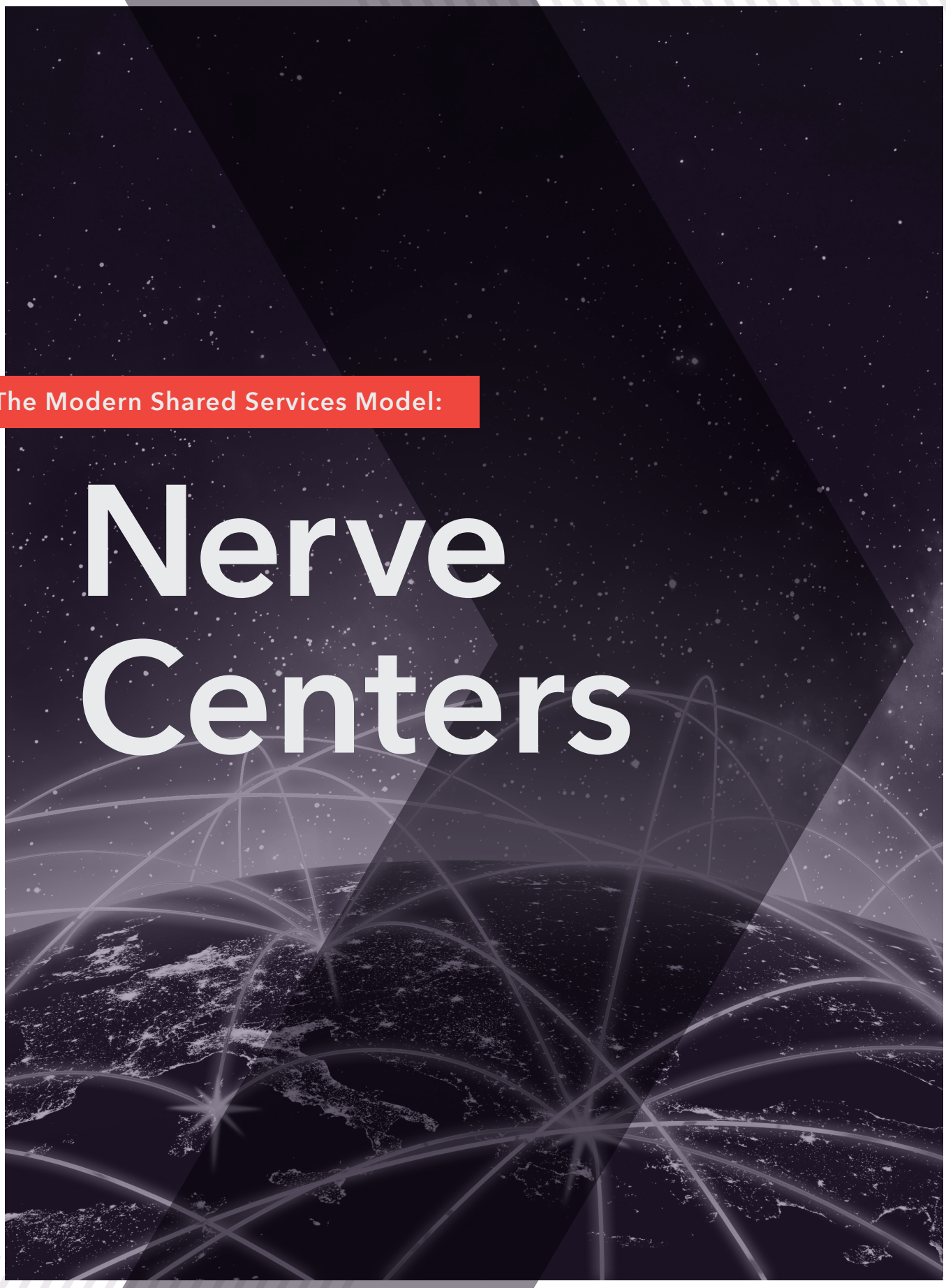
The Modern Shared Services Model:

Nerve Centers



Greater Phoenix Economic Council

Shared Services

As companies scale and adapt to the global economy, many have achieved significant operational benefits by centralizing disparate traditional back office operations – HR, payroll, finance, procurement, legal, customer service and IT – into regional operations hubs, allowing front-line operations to focus on production and service provision.

Shared services adoption led to significant productivity improvements in 79% of companies.[i]

Shared services adoption reduced general and administrative spending by as much as 40%.[ii]

Shared services adoption increased customer satisfaction scores by as much as 40%.[iii]

The evolution of modern shared service centers (SSCs) spans several decades. Beginning in the late 1980s, firms began decentralizing various business functions. Call centers and other back office operations were shifted away from traditional hubs like New York, Los Angeles and Chicago, and into low-cost emerging markets across the U.S. and abroad.

This trend continued at an increased pace following the tech boom and bust of the late 1990s and labor arbitrage became the predominant driver of business operations. Eventually, other business roles including sales and marketing functions were included in decentralization efforts and shifted to third- and fourth-tier markets where firms could become the employer of choice.

Following the Great Recession of 2008, corporate leaders sought to reduce their capital-intensive real estate portfolios and minimize under-utilized office space. This led to a strategy of consolidating corporate services which has been a key theme of corporate operations over the last seven years. Recent consolidation has been coupled with efforts to leverage technology and integrate core business functions. **The result is modern, efficient, technologically sophisticated and highly integrated operations hubs – Corporate Nerve Centers.**

Greater Phoenix Nerve Center History

As corporate restructuring trends played out towards the end of the 20th century, Greater Phoenix gradually became one of the nation's largest call center markets thanks to an available low-cost workforce, affordable land, modern infrastructure, temperate weather and a pro-business climate. Industry players such as American Express, Charles Schwab, Cox Communications, CVS, General Dynamics, Honeywell, Wells Fargo, United Health Group and USAA have long had back office and call center operations in the region.

Greater Phoenix benefited from these call centers, which offered great entry-level career opportunities in the banking, finance, and business services sectors, particularly for workers without college degrees. These customer contact centers helped grow awareness of Greater Phoenix as a desirable business locale. Call centers became anchor points as many companies moved other essential back office operations to Greater Phoenix, eventually evolving into complete business centers with HR, payroll, IT and software, marketing, and other services. The emerging business cluster spurred workforce growth and established a thriving, self-sustaining ecosystem that continues to attract more business to the region.

Greater Phoenix's past and future nerve center success is also tied to continued investments in key infrastructure and a hands-on approach to economic development that includes leaders in government, industry, academia and nonprofit sectors. As the country emerges from the effects of the COVID-19 global pandemic, companies will seek markets that demonstrated a measured, collaborative approach to cultivate top talent and redundant, reliable infrastructure. Greater Phoenix's coordinated development efforts leave the region well positioned to capitalize on future growth.

By centralizing business assets, companies can:

- Streamline costs
- Access large labor pools across various business units
- Facilitate inter-department alignment
- Reduce utility redundancy
- Increase real estate flexibility
- Improve customer experience

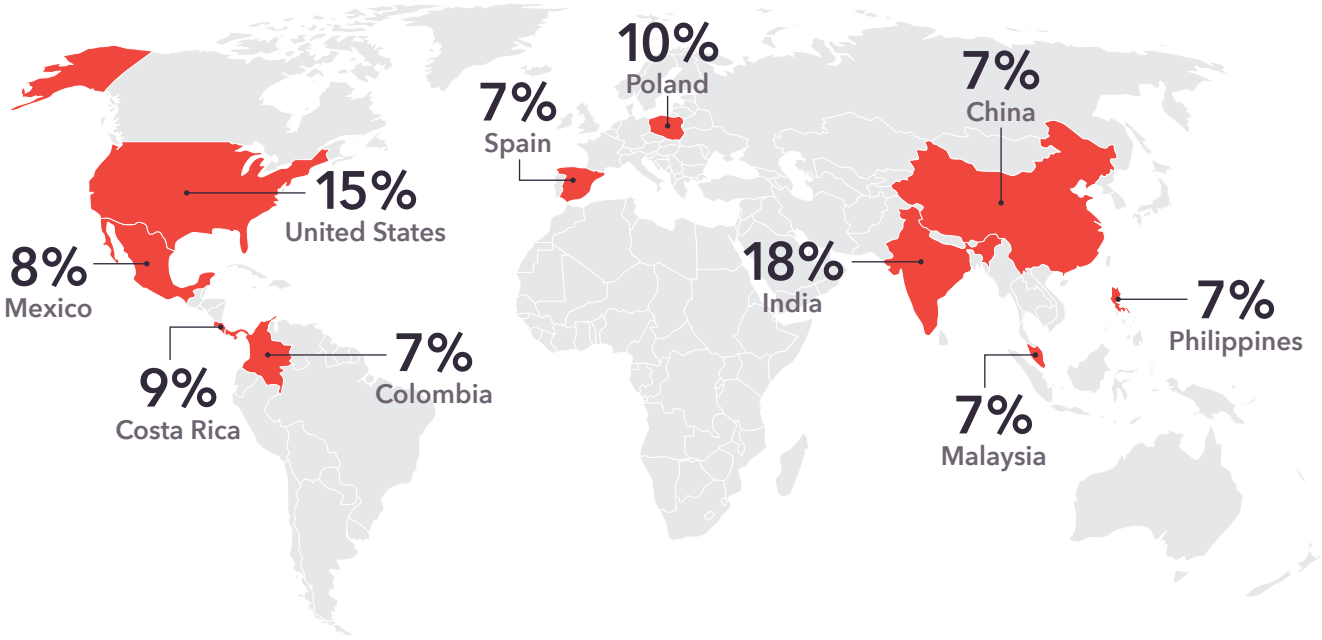
Shared Services Trends

The nerve center evolution is a culmination of three key trends in shared services. These trends highlight opportunities for continued growth in Greater Phoenix and illustrate the impact of nerve centers on the Greater Phoenix economy.

Onshoring and Outsourcing

Several functions, particularly those involving basic computer programming and other rudimentary back-end functions, continue to be outsourced to low-cost markets. However, recent survey data indicates that companies are seeking to increase the number of processes managed internally in the coming years.[iv] Many call center and customer service jobs, which were outsourced to India and the Philippines over the last 20 years, are slowly coming back to the U.S. due to wage increases in top foreign markets and a heightened political focus on re-shoring jobs in the U.S. Additionally, companies can increase market penetration and operational efficiency by embedding themselves within the local community and leveraging local talent and resources. These trends, coupled with a strong competitive position within the U.S., present a major growth opportunity for Greater Phoenix.

Top Destinations for Shared Service Centers:



Source: Deloitte 2019 Global Shared Services Survey Report: 11th Biennial Edition

Technology and Process Integration

Technology continues to be a force for change in the modern business landscape. Integrative software including Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) platforms allow for fluid integration of multiple business operations into singular points of contact. Many of these same platforms offer suites of advanced analytics to help companies synthesize vast amounts of data and better understand their business. Big data, cloud computing and software-as-a-service (SaaS) are now ubiquitous in the business world with over 90 percent of organizations leveraging some form of cloud computing.[v]

Modern technology allows SSCs to centralize and synthesize information on all aspects of the business, and use it to produce new knowledge and insight. Increased process integration has led modern SSCs to incorporate a wider range of operations, touching virtually every aspect of the business. This includes more external-facing activities including sales, marketing and customer service.

“Technology continues to be a force for change in the modern business landscape.”

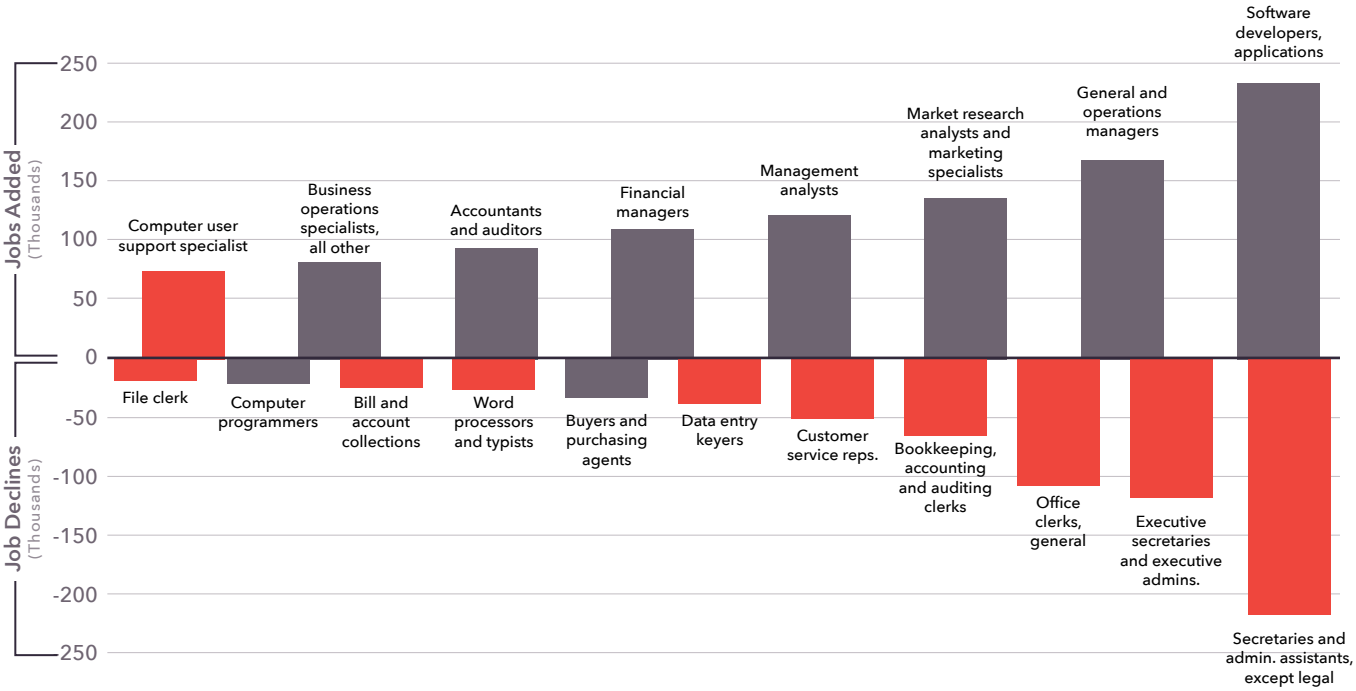
Workforce Evolution

Over the last two decades, workforce demands have shifted because of technology and process innovation. Clerical work is increasingly automated while human work becomes more specialized and unique.

A greater proportion of the business workforce consists of skilled occupations to work alongside technology – computer scientists, software developers, information security specialists and others. Greater emphasis on process innovation increases the need for management analysts, business operations specialists, and logisticians. Customer service is now handled by multi-faceted support specialists fluent in sophisticated software programs and able to manage user experience through multiple modes of engagement.

Increased specialization of back office occupations is correlated with higher wages. According to the Bureau of Labor Statistics (BLS), the fastest declining jobs over the next decade include occupations that have become largely obsolete due to automation, machine learning and offshoring. Alternately, the fastest growing occupations in the next decade include jobs with median annual salaries above the national household median income.

U.S. Shared Services-Related Occupations with the Most Job Growth/Declines (2018-2028)



Source: Bureau of Labor Statistics, 2018

These new workforce roles also require greater training and education. From a sample of 85 shared services-relevant occupations, 57 percent of jobs added since 2001 were in occupations with a typical entry level education requirement of a bachelor's degree or higher. In contrast, 75 percent of job declines in the same time frame were in occupations that required only a high school degree or less.

Typical Entry Level Education	Jobs Lost	Percent of Jobs Lost
High school or less	(3,612,945)	75.3%
Bachelor's	(629,817)	13.1%
Associates and some college, no degree	(542,266)	11.3%
Postgraduate degree	(10,646)	0.2%
Total	(4,795,674)	**100.0%**

Typical Entry Level Education	Jobs Gained	Percent of Jobs Gained
Bachelor's	5,292,919	55.3%
High school or less	3,564,194	37.2%
Associates and some college, no degree	541,752	5.7%
Postgraduate degree	172,090	1.8%
Total	**9,570,955**	**100.0%**

Source: Economic Modeling LLC, 2019

The Nerve Center Transformation

Emergence of the knowledge economy coincides with a paradigm shift in how businesses operate. This evolution is the genesis of modern nerve centers, which are defined by creative and intelligent work, scalability and agility, innovation and a focus on customer experience.

Nerve centers are multifunctional hubs of innovation and knowledge where technology is leveraged to drive efficiency, and ensure consistent and scalable value to customers. Business processes are integrated from end to end, facilitating a seamless information or decision pathway from top to bottom throughout the organization. Business activity and strategy are guided at the regional level, with close connection and constant input from chief executives, allowing for improved governance and faster, more accurate decision-making.

Human work within nerve centers involves managing complex systems and process innovation, requiring a knowledge-driven and solution-oriented approach. Nerve center work is managed by teams of highly-skilled technicians who double as de facto subject matter experts guiding best practices and overseeing company-wide implementation. Talent is hired locally as nerve centers leverage the economic resources of the region and become embedded within local communities.

"Nerve centers are multifunctional hubs of innovation and knowledge, where technology is leveraged to drive efficiency..."

Nerve Center Paradigm Shift

Shared Services Centers	Nerve Centers
» Transactional	» Transformational
» Cost Savings and Resource Optimization	» Value-Adding Innovation
» Centralized Operations	» Comprehensive, Integrated Process Hubs

Common Forms of Corporate Nerve Centers

1. Regional Offices

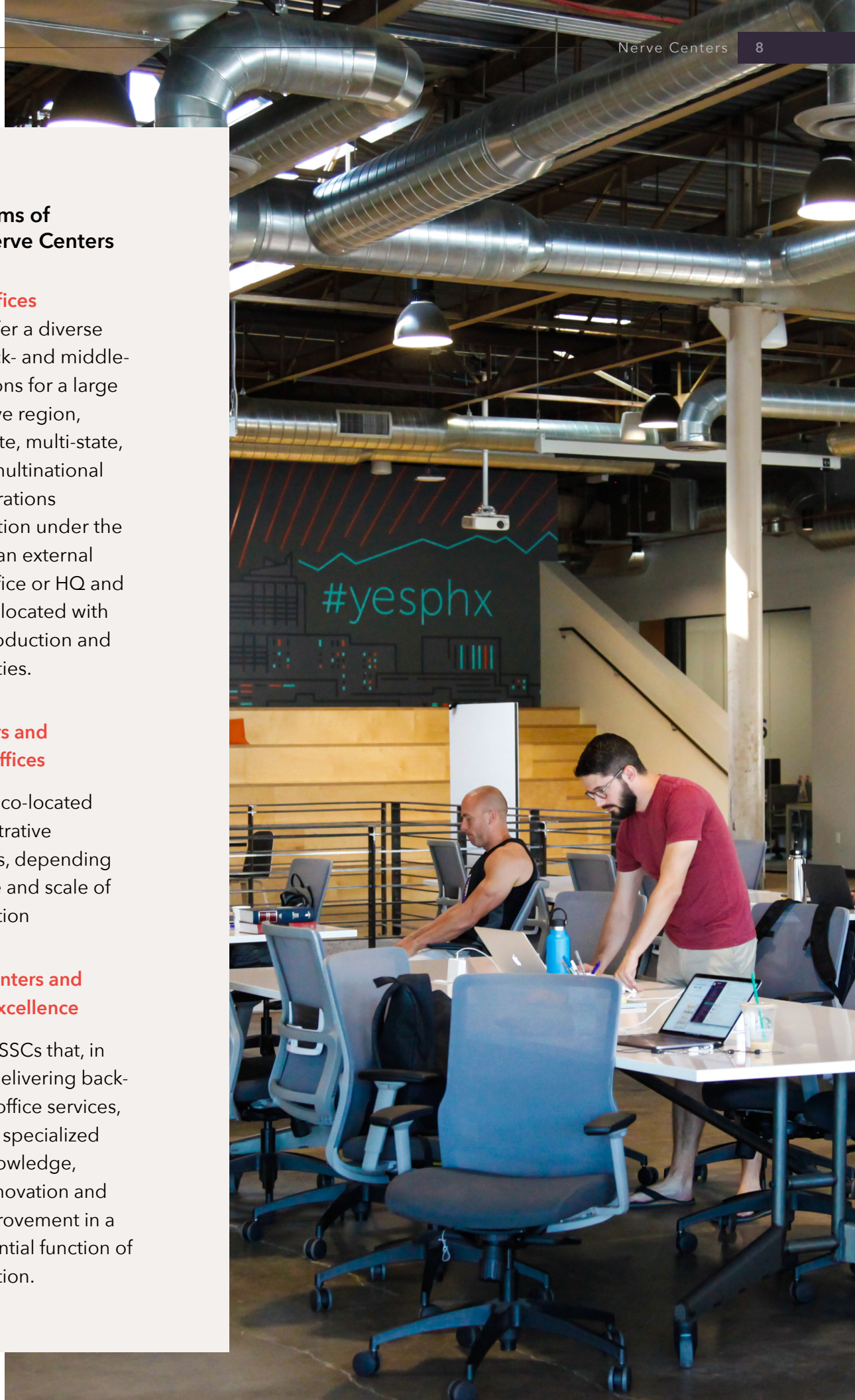
SSCs that offer a diverse range of back- and middle-office functions for a large administrative region, such as a state, multi-state, national or multinational region. Operations centers function under the direction of an external executive office or HQ and are often co-located with front-line production and service facilities.

2. Headquarters and Corporate Offices

SSCs can be co-located with administrative headquarters, depending on the scope and scale of the organization

3. Pure-Play Centers and Centers of Excellence

Stand-alone SSCs that, in addition to delivering back- and middle-office services, function as a specialized source of knowledge, expertise, innovation and process-improvement in a specific essential function of the organization.



Centers of Excellence

Inherent to modern corporate nerve centers is the growing use of Centers of Excellence (CoEs). As hyper-connectivity and technological integration helps businesses optimize their operations faster and more easily, other value-adding innovation is becoming a more critical component of industry competitiveness. Consequently, more than 60 percent of companies in the U.S. that implement a shared services model also utilize a Center of Excellence or Center of Expertise.[vi]

CoEs are small, agile "change agents" within an organization and are essential to driving performance and value in an economy increasingly characterized by knowledge and innovation. CoEs identify areas of knowledge in which the skills of siloed teams are evolving in parallel and unite them so their information, ideas and resources can be shared. This eliminates redundancy, encourages the sharing of resources and ideas, and creates consistency for the client or user. CoEs then create holistic, innovative solutions and manage their application across the company by:

- Managing data analyses and product R&D
- Standardizing operations and guiding best practices
- Developing instructional content, tools and templates
- Providing training, guidance and support to business sites
- Assessing, benchmarking and managing organizational effectiveness

Growing popularity of CoEs is further evidence that nerve center operations will continue to grow more sophisticated, increasing demand for skilled labor. CoEs require strong, consistent engagement and collaboration with business stakeholders, including technical specialists, knowledge experts, and any others who can translate information into useful insight and better decision-making.

Furthermore, CoEs require a culture that encourages flexibility, creativity, collaboration, continuous learning and improvement, experimentation, and risk-taking. An ideal locale for nerve center operations is one with a large and diverse skilled labor pool, and a culture that supports innovation and knowledge production.

Top 5 Areas of Expertise for U.S. Centers of Excellence

Robotics-Driven Automation and AI

Finance

Data Analytics

IT Support

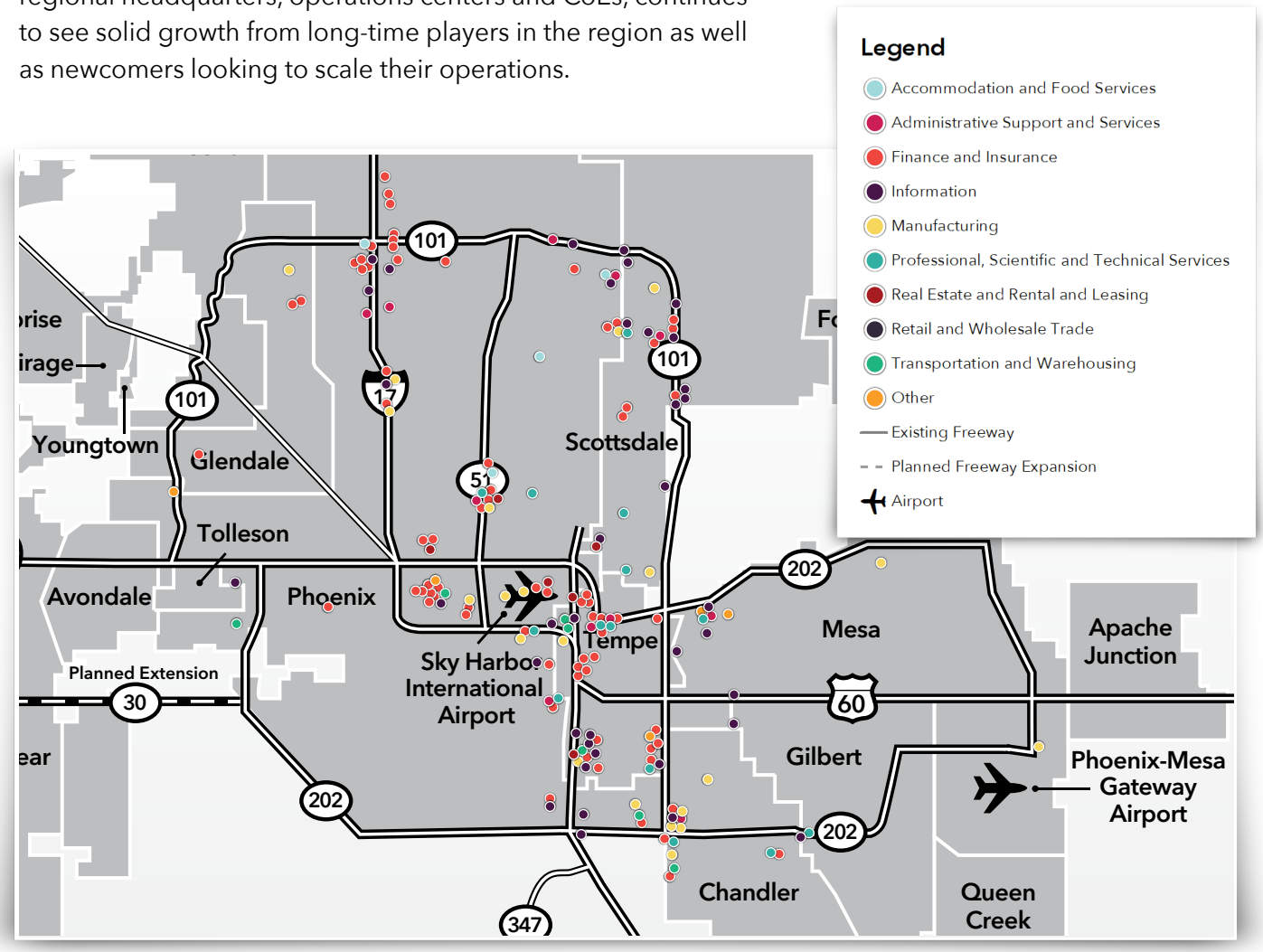
Human Resources

Greater Phoenix Nerve Centers

Nerve centers have made great contributions to Greater Phoenix's economy. Their broad functionality drives demand for employees of virtually all skill levels and disciplines, diversifying the workforce. Because they are industry-agnostic and span all sectors, nerve centers have helped to attract a wide range of industries, including advanced manufacturing, finance, health care, and emerging technologies. Thanks to nerve centers, Greater Phoenix's economy is more diverse and more resilient to economic shocks.

Nerve centers make up a sizable proportion of Greater Phoenix's workforce. This sector, which includes several national and regional headquarters, operations centers and CoEs, continues to see solid growth from long-time players in the region as well as newcomers looking to scale their operations.

Approximately 106 companies have nerve center operations with at least 100 employees in Greater Phoenix [vii]



By the Numbers

Employment of Major Sectors in Greater Phoenix

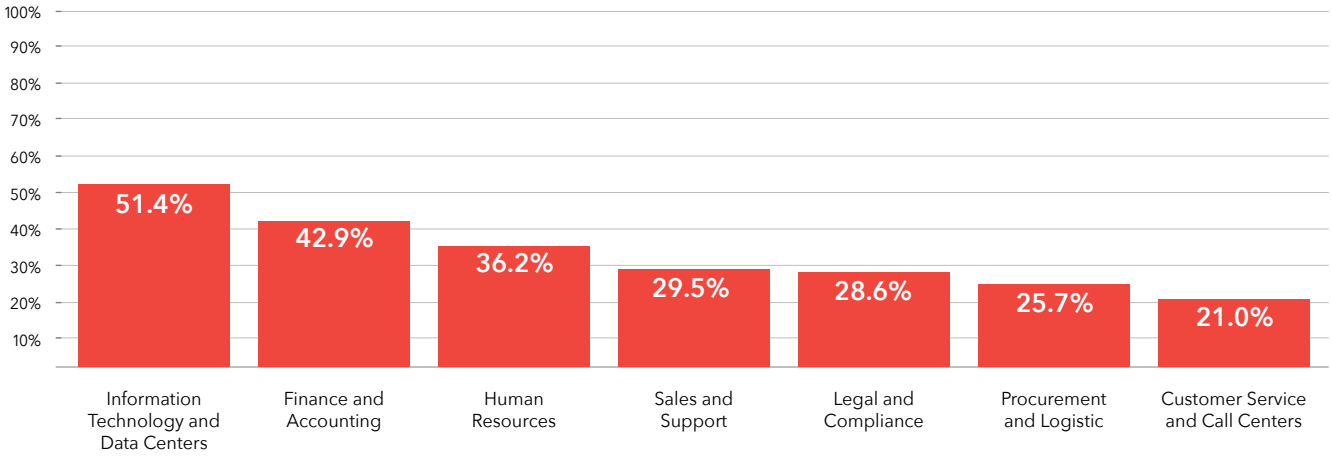
201,478
Administrative and Support Services Jobs

153,366
Finance and Insurance Jobs

142,185
Nerve Centers Jobs

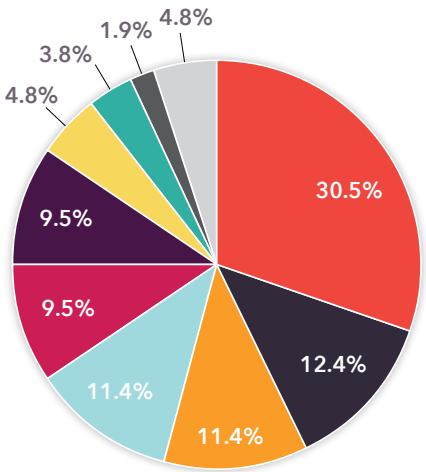
129,653
Manufacturing Jobs

Common Operations in Greater Phoenix Nerve Centers



Greater Phoenix Nerve Center Industry Composition

Finance and Insurance	30.5%
Retail and Wholesale Trade	12.4%
Manufacturing	11.4%
Information	11.4%
Administrative and Support Services	9.5%
Professional, Scientific and Technical Services	9.5%
Real Estate and Rental and Leasing	4.8%
Transportation and Warehousing	3.8%
Accommodation and Food Services	1.9%
Other	4.8%



Source: Maricopa Association of Governments; community survey data

Recent Nerve Center Expansions in Greater Phoenix

Infosys — Navigate your next
1,000 Jobs (2018)

USAA
1,000 Jobs (2017)

CHOICE HOTELS
500 Jobs (2019)

Opendoor
500 Jobs (2019)

svb Silicon Valley Bank
300 Jobs (2019)

Acronis
150 Jobs (2018)

Centers of Excellence in Greater Phoenix

- AgJunction
- American Express
- Axway
- Choice Hotels International
- Clarivate Analytics
- Cox Communications
- Garmin
- GoDaddy
- Infosys
- Investis Digital (Vertical Measures)
- Kudelski Security
- Milestone Technologies
- MUFG
- Orion Health
- PSCU Financial Services
- Scheidt & Bachmann
- Silicon Valley Bank
- Uber
- Wells Fargo

Greater Phoenix Assets

The success of Greater Phoenix nerve centers are attributable to several factors:

- A strong technology sector
- High quality of life
- A culture of innovation and collaboration
- A growing and diverse workforce
- A strong education and workforce training ecosystem
- An affordable, low-burden business environment
- Modern infrastructure
- A fast-growing data center market

Technology

As business operations become more reliant on technology, companies can increase their competitiveness by leveraging the technology assets of the communities in which they operate. Nerve centers thrive in a region with a strong tech presence. Greater Phoenix's tech roots run back to WWII, anchored by legacy semiconductor, aerospace and advanced manufacturing industries. Over time, it has added clusters in information technology (IT), SaaS, data centers, cybersecurity, FinTech and PropTech. Other spillover benefits of Greater Phoenix's tech sector include a sizable skilled labor pool, and modern information and communications technology (ICT) infrastructure.

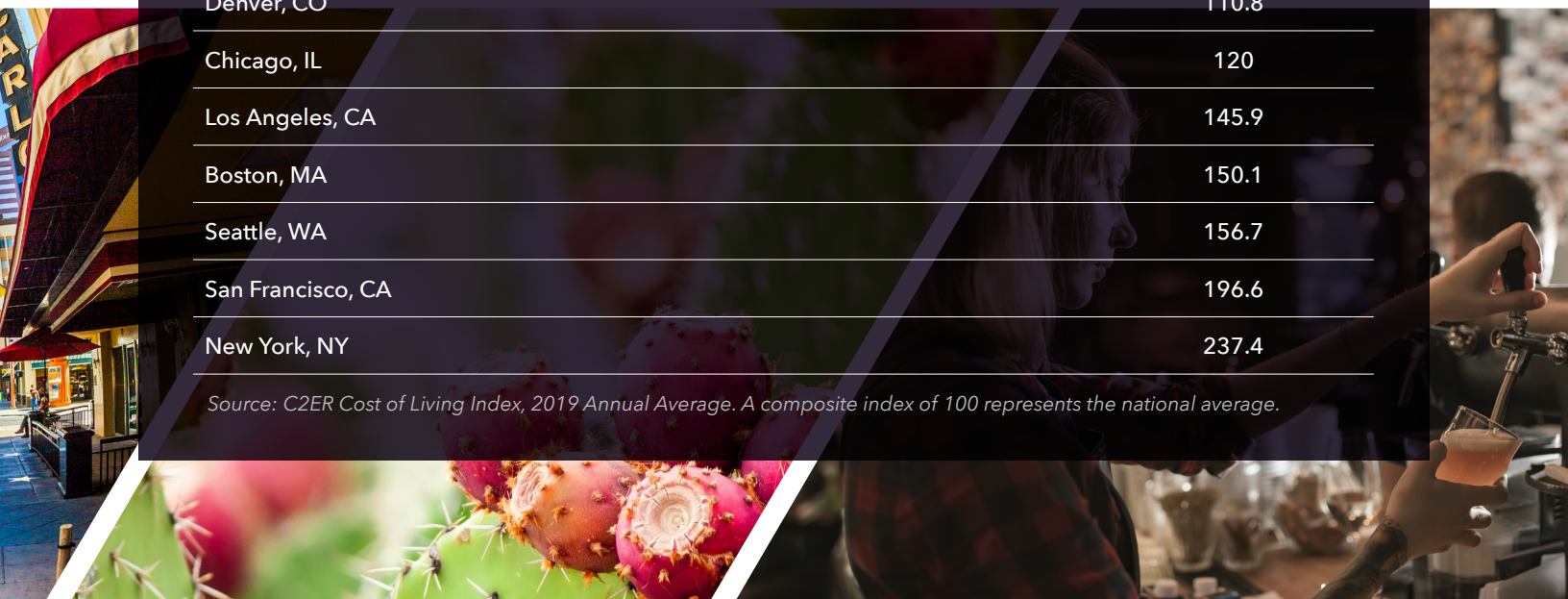
Quality of Life

Companies are drawn to Greater Phoenix for the appealing quality of life offered to employees. Abundant sunshine, proximity to mountains, diverse and open culture, and big city amenities make a strong argument for people looking to relocate from all over the country. A cost of living that falls below the national average means that employees can more readily enjoy these amenities than they could elsewhere.

Cost of Living Index by Metro

Charlotte, NC	97.9
Phoenix, AZ	**98.9**
Salt Lake City, UT	103.3
Dallas, TX	107.7
Denver, CO	110.8
Chicago, IL	120
Los Angeles, CA	145.9
Boston, MA	150.1
Seattle, WA	156.7
San Francisco, CA	196.6
New York, NY	237.4

Source: C2ER Cost of Living Index, 2019 Annual Average. A composite index of 100 represents the national average.



Innovation and Collaboration

Greater Phoenix is committed to fostering a culture and business environment that encourages and rewards innovation. This is evidenced by pioneering regulatory sand boxes that make it easier for innovators to test ideas in the market; cross-industry collaborative research institutes that draw public and private investment in emerging technologies; and partnerships between industry and academia to better prepare the workforce for the economy of the future. Local innovation hubs foster a sense of community and collaboration, helping companies build valuable connections, pool resources and share ideas. These efforts are essential to nerve centers operating in the modern innovation economy.

Workforce

Greater Phoenix's workforce continues to be a key attraction for nerve centers with an available labor pool that continues to outpace the national average. Looking at a targeted sample of 85 nerve center occupations, Greater Phoenix's workforce growth and density rank near the top when compared to other nerve center markets. Labor force growth has outpaced expectations almost twofold since 2001. Over 62 percent of Greater Phoenix's nerve center workforce growth in that time is attributable not to national growth or industry trends, but to the unique economic, cultural and social character of Greater Phoenix. The workforce is further bolstered by the fact that Greater Phoenix remains the second fastest growing metro region by population with a millennial workforce projected to grow 7.2 percent over the next five years, outpacing most other major hubs.[viii]

"Greater Phoenix's workforce continues to be a key attraction for nerve centers, with an available labor pool that continues to outpace the national average."

Shift Share Analysis of Key Metro Areas

Metro	2001 - 2019 Change	Expected Change	Competitive Effect	% Growth Due to Competitive Effect
Salt Lake City	79,374	28,225	51,149	64.40%
Charlotte	109,038	39,133	69,905	64.10%
Phoenix	**182,805**	**68,548**	**114,256**	**62.50%**
Dallas	286,208	125,106	161,102	56.30%
Seattle	185,303	114,100	71,204	38.40%
Denver	104,263	78,074	26,189	25.10%
San Francisco	120,643	134,714	-14,072	-11.70%
Los Angeles	85,126	200,342	-115,215	-135.30%
Boston	59,070	146,585	-87,515	-148.20%
New York	112,957	350,570	-237,613	-210.40%
Chicago	44,526	213,287	-168,761	-379.00%

Source: Economic Modeling LLC, 2019

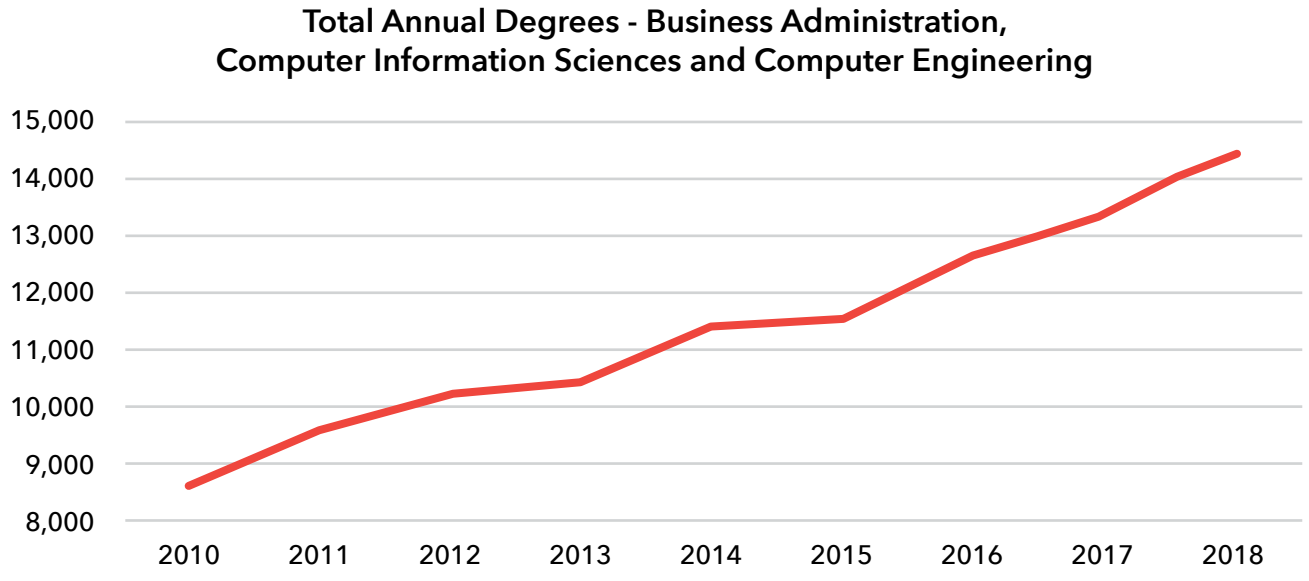
Projected Nerve Center Occupation Growth

Metro	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
Salt Lake City	302,918	30,530	11.20%
Denver	570,316	48,362	9.30%
Phoenix	**754,659**	**62,780**	**9.10%**
Dallas	1,268,638	92,809	7.90%
San Francisco	903,992	63,742	7.60%
Charlotte	401,354	27,206	7.30%
Seattle	751,923	48,525	6.90%
Boston	917,499	32,440	3.70%
New York	3,008,040	98,507	3.40%
Los Angeles	1,873,233	29,556	1.60%
Chicago	1,441,309	18,413	1.30%

Source: Economic Modeling LLC, 2019

Education

A robust postsecondary education system ensures that Greater Phoenix has the talent needed to attract quality businesses looking to expand their mission critical operations. Greater Phoenix benefits from high-quality research universities, career and technical education institutions, and one of the largest community college networks in the country, all of which offer traditional face-to-face coursework as well as flexible online curricula for non-traditional learners and mid-career professionals. Education outputs have steadily risen over the last decade, contributing to a strong skilled labor pool. The number of graduates in business administration, computer information sciences and computer engineering at Greater Phoenix area colleges has increased by 6.6 percent year over year.



Source: National Center for Education Statistics

Business Climate

Businesses commonly cite the lack of resources as a key barrier to leveraging a shared service model to scale operations. For many companies struggling with scale, Greater Phoenix is an ideal market with affordable land and office space, low cost of living, and a thriving advanced services cluster that allows companies to easily plug-and-play. Within the U.S., the rise of SSCs has saturated many popular U.S. markets, leading to rising operational costs. Greater Phoenix's competitive operating costs make it an ideal home for companies looking to avoid saturation.

Nerve Center Annual Business Operating Costs

Operating cost estimates are based on $5 million personal property investment, lease of 100,000 square feet suburban class A office space with utilities included, 500 jobs

Metro Area	Employee Payroll	Fringe and Mandated Benefits	Building / Lease Payments	Property Tax	Total Operating Cost	Local Index
Salt Lake City	$34,964,608	$8,776,096	$2,982,000	$66,725	$46,789,429	98.30%
Phoenix	**$36,042,567**	**$8,559,113**	**$2,889,000**	**$111,870**	**$47,602,550**	**100.00%**
Charlotte	$37,483,383	$8,953,201	$2,667,000	$64,720	$49,168,304	103.30%
Dallas-Fort Worth	$38,616,371	$9,202,848	$3,009,000	$135,955	$50,964,174	107.10%
Denver	$39,184,381	$9,320,232	$2,757,000	$111,833	$51,373,446	107.90%
Boston	$42,677,548	$10,154,149	$2,794,000	$126,000	$55,751,697	117.10%
Los Angeles	$41,069,570	$9,931,765	$5,556,000	$58,350	$56,615,685	118.90%
Seattle	$42,553,727	$10,280,112	$3,994,000	$51,902	$56,879,741	119.50%

Source: Applied Economics Metrocomp 2019

Infrastructure

It is important that the region continue to invest in the development of reliable modern infrastructure to ensure local companies have the distribution, transportation and communications capacities to serve consumers. A relatively young metropolitan region, Greater Phoenix benefits from modern infrastructure and has strategically prepared for the demands of a fast-growing economy. This includes a well-developed freeway system and grid-patterned surface streets for efficient commutes.

Geographic proximity to key markets on the west coast and American southwest remain a key selling point for Greater Phoenix as an operations hub. The region is well-connected via Sky Harbor International Airport, offering convenience, ease of access and connectivity for Greater Phoenix-based corporate operations.

The addition of 5G and modern ICT infrastructure, driven by the second fastest-growing data center market in the country, delivers fast connectivity to customers and data. Multiple fiber optic providers serve the market, providing the connectivity that nerve centers need.

Sky Harbor Airport

- Hub for American Airlines and Southwest Airlines
- 120 domestic and international flights
- Direct flights to London, Toronto, Mexico City and Frankfurt
- Ranked "Best Airport of 2019" by Wall Street Journal

Mass Transit

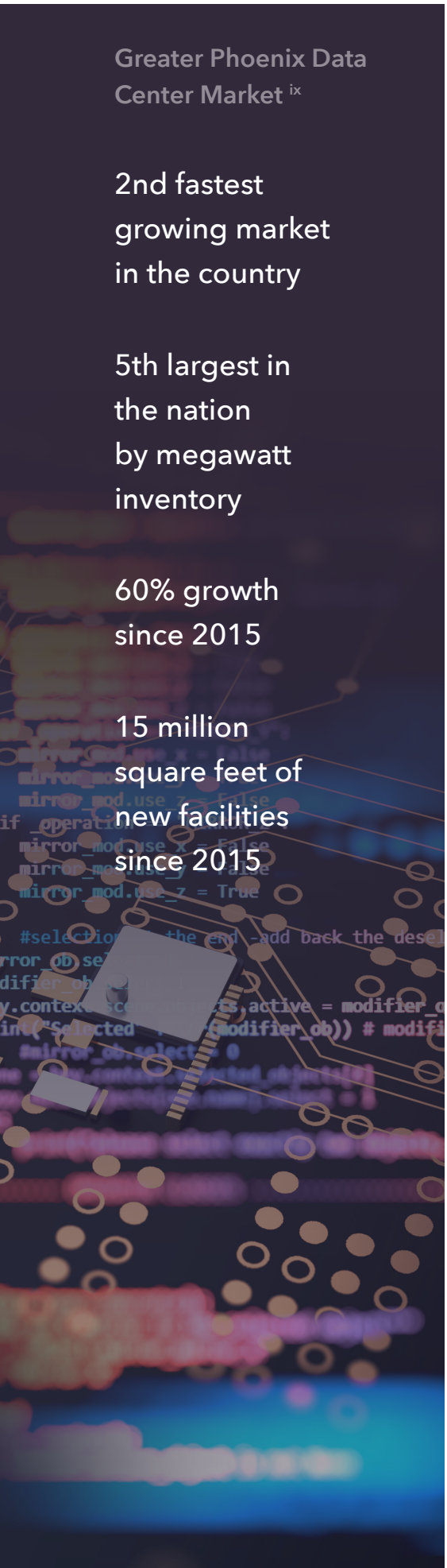
59
Local bus routes

26
Miles of light rail
(60 miles by 2050)

23
Commuter routes

70
Million riders annually

2M
Residents live within 1/4 mile of bus and light rail



Greater Phoenix Data Center Market [ix]

2nd fastest growing market in the country

5th largest in the nation by megawatt inventory

60% growth since 2015

15 million square feet of new facilities since 2015

Data Centers

Greater Phoenix's nerve center operations are notably technology-heavy with more than 50 percent of nerve centers in the area indicating IT and software-related functions. Reliable data storage, access and security are essential to nerve center operations, which rely heavily on data to inform machine learning, improve processes and manage performance.

In the last decade, Greater Phoenix has become one of the top data center markets in the country thanks to affordable land, skilled labor, robust incentive packages and mild climate with low risk of natural disasters. Greater Phoenix is a natural fit for companies looking to co-locate data storage operations alongside other shared services. Examples include PayPal, Verizon, American Express, Bank of America and Charles Schwab. Additionally, local nerve centers benefit from the region's sizable data storage co-location companies that offer infrastructure-as-a-service (IaaS). Greater Phoenix's fast-growing data center industry is indicative of a growing tech sector that nerve centers can leverage for continued success in the future.

Enterprise Data Centers:

- Alaska Federal Credit Union
- American Express
- Apple
- Bank of America
- CDW Direct
- CenturyLink
- Charles Schwab
- eBay
- GoDaddy
- PayPal
- PSCU Financial Services
- Safeway
- Verizon

Data Storage Providers:

- Aligned Data Centers
- Automatic Data Processing, Inc.
- CyrusOne
- Cyxtera
- Digital Realty Trust
- EdgeConnex
- EdgeCore
- Flexential
- H5 Data Centers
- Internap Corporation
- Iron Mountain
- PhoenixNAP
- QTS Realty Trust
- SecureOne Data Solutions
- ViaWest
- Zayo Colocation Group

Opportunities Ahead

Produce Unparalleled STEM Talent as a Market

Nerve centers require talent with greater training and education than ever before. Greater Phoenix must continue to grow talent in the Science, Technology, Engineering and Math (STEM) fields to meet this evolving need. Post-secondary education partners are adapting to this shift by developing relevant degree programs and modernizing offerings in digital and applied learning. Creative partnerships like the Pathways for the Future initiative announced by State Farm and Arizona State University will help cultivate a workforce of lifelong learners able to upskill and adapt to emerging technologies, ensuring that nerve centers have access to the talent needed to be innovative and technologically sophisticated.

"Nerve centers require talent with greater training and education than ever before. Greater Phoenix must continue to grow talent in the Science, Technology, Engineering and Math (STEM) fields to meet this evolving need."

Maintain Investments in Core and Future Digital Infrastructure

Information and Communications Technology (ICT) infrastructure was put in place as Greater Phoenix developed as a technology hub. While the region has relatively robust infrastructure, some areas need maintenance and improvements to remain competitive for quality jobs and talent. Efforts such as The Connective: A Greater Phoenix Smart Region Consortium, which promotes collaborative applied research among public sector, industry, and academia, will address these challenges head on through a regional approach to infrastructure modernization.

"While the region has relatively newer infrastructure, some areas need maintenance and improvements to remain competitive for quality jobs and talent."

Cultivate Pro-Business Policies Towards Advanced Industries

Innovation is at the core of modern nerve center operations. The Greater Phoenix nerve center cluster benefits from a culture of collaboration and a forward-thinking regulatory environment. Legislation such as the Arizona FinTech and PropTech sandbox reduce the regulatory burden on entrepreneurs, making the region an ideal testing ground for advanced technologies. With House Bill 2417, Arizona is one of just a handful of states to recognize the legality of smart contracts and transactions facilitated using blockchain technology. These regulatory efforts, coupled with cross-sector partnerships like the AZ Blockchain Initiative, ensure that nerve centers remain plugged into a culture of innovation. The state has also developed policies such as the Quality Jobs Tax Credit, Qualified Facilities Tax Credit, and Computer Data Center Program to attract high quality jobs to the area. Arizona must continue to shape the business environment to remain on the forefront of the industry.

Promote Urban Development and Mobility

Millennials now account for nearly 40 percent of the U.S. labor force and are responsible for much of the value-adding innovation occurring within nerve centers. Attraction and retention of the millennial demographic is critical to sustaining the necessary nerve center workforce in the long run. There is growing demand among millennials and creative class professionals for urban 'live-work-play' communities, characterized by walkability and proximity to mass transit.

Additionally, although nerve center workforces are increasingly tech-oriented, they are still highly mixed and require access to a diverse labor pool. Mixed-mode transportation also increases the mobility of low-wage workers with limited automobile access. Proximity to work and multiple options for transportation ensure worker mobility and convenience as they commute to the office. This will help nerve centers retain the diverse workforce that nerve centers require.

Being a relatively young metro area, Greater Phoenix's infrastructure was designed around the automobile, resulting in a low-density urban core and suburban sprawl. Over time, this has put Greater Phoenix at a competitive disadvantage compared to other nerve center markets, many of which are in dense urban areas with lower commute times and more options for urban housing.

Development strategies that promote affordable, high-density, mixed-use communities near mass transit will generate significant image capital for Greater Phoenix and enhance regional attractiveness. This includes not only light rail, but also shaded sidewalks, bike lanes, open community spaces, affordable workforce housing, and shared parking facilities. Greater Phoenix municipalities must continue to leverage assets such as the Maricopa Association of Governments (MAG), Valley Metro, and other regional leaders to inform decisions around transit-oriented development. Collaborative coordinated land use strategies among the municipalities would allow for pooled resources and ensure investment in long-term sustainable infrastructure for the region.

Conclusion

Greater Phoenix has evolved from a locale for affordable call centers and back-office operations, to a modern industrial hub that integrates technology, knowledge and innovation across all industries. As essential business operations converge with Industry 4.0 technologies, Greater Phoenix's unique economic and cultural attributes make it a prime location for a diverse range of nerve center operations. Greater Phoenix has established itself as a place where companies can leverage technology and innovation to scale and add value to clients and stakeholders.

"Greater Phoenix has established itself as a place where companies can leverage technology and innovation to scale and add value to clients and stakeholders."

Glossary

Center of Excellence/Expertise (CoE)
a team or department within an organization focused on the research and development of new technologies and business processes, as well as implementation and oversight of best practices. CoEs can focus on general process/technology improvement, or specialize in a specific technology, tool, or business concept that is unique to the organization.

Information and Communications Technology (ICT)
a broad term used to describe integrated information communication systems including computer networks, telephone networks, databases, wireless data systems, conduits, software, audiovisual communication systems, and any other technologies designed for the transmission of information across geographies.

Innovation Economy
an economic system in which prosperity is directly tied to technological innovation and generation of new knowledge and intellectual property; contrasts with classical economic models centered around agriculture and manufacturing

Mission Critical Operation
an essential process or other component, the failure or disruption of which will lead to serious and/or catastrophic impacts on an organization

Nerve Center
the latest evolution of corporate shared services that places heightened importance on process innovation, utilization of Industry 4.0 technologies, and integration of operations and information across the organization

Shared Services
a business model in which the provision of back-office operations and services (IT, HR, payroll, etc.) is managed internally by a central team or department rather than dispersed among individual business locations or branches

Appendix: Nerve Center Relevant Occupations

The list below consists of 85 occupations selected for analysis in this report based on their relevance to general nerve center operations, as well as their relevance to nerve center operations in Greater Phoenix.

SOC	Description
13-2011	Accountants and Auditors
11-3011	Administrative Services Managers
43-3011	Bill and Account Collectors
43-3021	Billing and Posting Clerks
43-3031	Bookkeeping, Accounting, and Auditing Clerks
43-4011	Brokerage Clerks
13-2031	Budget Analysts
13-1199	Business Operations Specialists, All Other
13-1028	Buyers and Purchasing Agents
11-1011	Chief Executives
13-1031	Claims Adjusters, Examiners and Investigators
11-3111	Compensation and Benefits Managers
13-1141	Compensation, Benefits, and Job Analysis Specialists
13-1041	Compliance Officers
11-3021	Computer and Information Systems Managers
15-1143	Computer Network Architects
15-1152	Computer Network Support Specialists
15-1199	Computer Occupations, All Other
43-9011	Computer Operators
15-1131	Computer Programmers
15-1121	Computer Systems Analysts
15-1151	Computer User Support Specialists
43-4021	Correspondence Clerks
13-1051	Cost Estimators
43-4041	Credit Authorizers, Checkers and Clerks
43-4051	Customer Service Representatives
43-9021	Data Entry Keyers
15-1141	Database Administrators
43-6011	Executive Secretaries and Executive Administrative Assistants
43-4071	File Clerks
13-2051	Financial Analysts
43-3099	Financial Clerks, All Other
11-3031	Financial Managers
13-2099	Financial Specialists, All Other
41-1012	First-Line Supervisors of Non-Retail Sales Workers
43-1011	First-Line Supervisors of Office and Administrative Support Workers
11-1021	General and Operations Managers
43-4161	Human Resources Assistants, Except Payroll and Timekeeping
11-3121	Human Resources Managers
13-1071	Human Resources Specialists
43-4199	Information and Record Clerks, All Other
15-1122	Information Security Analysts
43-9041	Insurance Claims and Policy Processing Clerks
41-3021	Insurance Sales Agents
13-2053	Insurance Underwriters
23-1011	Lawyers
43-4131	Loan Interviewers and Clerks
13-2072	Loan Officers
13-1081	Logisticians
13-1111	Management Analysts
11-9199	Managers, All Other
13-1161	Market Research Analysts and Marketing Specialists
11-2021	Marketing Managers
15-1142	Network and Computer Systems Administrators
43-4141	New Accounts Clerks

43-9199	Office and Administrative Support Workers, All Other
43-9061	Office Clerks, General
43-9071	Office Machine Operators, Except Computer
15-2031	Operations Research Analysts
43-4151	Order Clerks
43-3051	Payroll and Timekeeping Clerks
43-3061	Procurement Clerks
43-5061	Production, Planning, and Expediting Clerks
27-3031	Public Relations Specialists
11-3061	Purchasing Managers
43-4171	Receptionists and Information Clerks
41-9099	Sales and Related Workers, All Other
11-2022	Sales Managers
41-3099	Sales Representatives, Services, All Other
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
41-3031	Securities, Commodities, and Financial Services Sales Agents
43-5071	Shipping, Receiving and Traffic Clerks
15-1132	Software Developers, Applications
15-1133	Software Developers, Systems Software
15-2041	Statisticians
43-5081	Stock Clerks and Order Fillers
13-2081	Tax Examiners and Collectors, and Revenue Agents
13-2082	Tax Preparers
27-3042	Technical Writers
41-9041	Telemarketers
11-3131	Training and Development Managers
13-1151	Training and Development Specialists
43-9022	Word Processors and Typists

Footnotes:

i. Deloitte. 2019 Global Shared Services Survey Report Executive Summary: 11th Biennial Edition. (London: Deloitte Development LLC, 2019), 13. 79 percent of respondents saw productivity improvements of at least 5 percent.

ii. Daub, Matthias, Andreas Ess, Jonathan Silver, and Samir Singh. Does the global business services model still matter? (New York: McKinsey & Company, 2017), 3. McKinsey found that SSC models reduced general and administrative spending by 30 to 40 percent.

iii. Ibid. SSC models increased customer satisfaction by 20 to 40 percent.

iv. Deloitte. 2019 Global Shared Services Survey Report Executive Summary: 11th Biennial Edition. (London: Deloitte Development LLC, 2019), 18. Approximately 12 percent of respondents indicated plans to increase the number of processes managed in-house over the next three to five years, compared to just 2 percent in 2017.

v. RightScale. RightScale 2018 State of the Cloud Report. (Santa Barbara, CA: RightScale, Inc., 2018), 2. 96 percent of survey respondents indicated that they use cloud technologies.

vi. Shared Services and Outsourcing Network. State of the Global Shared Services Market Report 2019. (London: SSON, 2019).

vii. Custom analysis of Maricopa Association of Governments (MAG) 2018 Employer Database and community survey data

viii. Vogel, Vanessa, Drew Callow, and Kristen Stephenson. The Greater Phoenix Tech Story. (Phoenix, AZ: CBRE, Inc., 2020), 6.

ix. CBRE. North American Data Center Report H1 2019. (Los Angeles, CA: CBRE, Inc., 2019), 6.

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