

Lincoln's Community Vision: Strategic Recommendations for a Globally Competitive City



June 30, 2015

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Executive Summary



Executive Summary

Project Overview

This **economic development vision plan** will serve as a roadmap for Lincoln to become a globally competitive destination city. It assesses how to optimally align the city's assets for future prosperity, and details industries that Lincoln is equipped to focus on. It lays out strategies that will best allow Lincoln to attract and retain the types of workers and businesses that will be competitive on a worldwide playing field.

The vision plan is many months in the making. It started with a **stakeholder engagement** process, in which AngelouEconomics (AE) conducted dozens of interviews with key stakeholders from the private and public sectors. AE also held focus groups with experts from leading sectors of the economy, and accumulated critical feedback from members of the Steering Committee, made up of industry leaders. And nearly 3,000 residents and businesses participated in our **online survey**. That is a record level of engagement among AE client cities, and it communicates very robust community interest in participating in Lincoln's economic future.

The most important factors according to **resident respondents** were: public schools, affordability, and jobs. The widest gap between rated importance and Lincoln's performance were: jobs/underemployment, and employee compensation. The most important factors to **business respondents** were: public schools, and affordability. The widest gap between rated importance and Lincoln's performance for business respondents were: tax climate and their ability to attract and retain skilled employees.

The stakeholder engagement was then supplemented with extensive quantitative and qualitative research to provide a thorough **market assessment** of the community's strengths and weaknesses along with current and future economic trends. The market assessment weighed Lincoln's quality of life and business environment against **benchmark cities**. The cities – **Madison, Boulder, and Lexington** – were chosen by AE

in conjunction with LPED based on similarity to Lincoln in size, industry clustering and their relatively high level of public employment either through universities or the presence of a state capital.

Based on the market assessment findings a **target industry analysis** was conducted to identify four industries that will do the most to advance its global competitiveness. The target industries are:

- **Finance and Insurance**
- **Life Sciences**
- **Advanced Manufacturing**
- **IT & Business Services**

These industries are supported by niche areas to focus on that will best grow each respective industry. The niches cover emerging as well as mature and diversification target areas, and include big data analytics, digital manufacturing and design, robotic farming, and plant science, among other areas. (See p. 20 for a full list.)

The strategic vision plan details goals, strategies and actions for Lincoln to pursue that account for the community's challenges and leverageable assets and that will best secure Lincoln's economic future.

Executive Summary

Project Summary

Lincoln has come a long way since AngelouEconomics first conducted an economic strategic plan for the community more than a decade ago. A stable, diversified economic base has emerged. Quality of life is improving through projects like the Haymarket and the city's extensive bike and trail network. A burgeoning hi-tech sector holds the promise of positively shaping the city's future. Public and private sector leaders are imbued with an optimistic, can-do spirit, eager to see Lincoln through to the next stage of its economic development. Lincoln is home to a strong work ethic, quality public schools and high graduation rates. UNL's entry into the Big Ten is paving the way for greater academic collaboration and financial access to research funding.

Lincoln's Key Assets include:

- **Diversified economic base** – A diverse mix of industries, including manufacturing, healthcare, hi-tech, and finance and insurance, has helped pad Lincoln from the effects of economic downturns. UNL and the state capital make for further diversification and resilience.
- **School system; graduation rates** – Public and private school options are notably strong and graduation rates are higher than the national average.
- **Public-private partnerships** – Lincoln's successful track record with PPP's paves the way for future cooperation, essential toward the aim of producing world-class infrastructure. Further strengthening those relationships, especially as they relate to transportation and tech infrastructure, is vital to future prosperity.
- **Burgeoning startup community** – Dynamic startups clustered in the Haymarket provide a foundation to propel Lincoln's IT sector to the next level.

- **The Haymarket** – The revitalized downtown district improves Lincoln's quality of life and holds great potential to attract and retain talent and businesses.
- **Higher education** – UNL, Nebraska Wesleyan University, and Southeast Community College among other area institutes of higher learning provide a steady stream of qualified graduates into the workforce. UNL is invested in research areas that with proper alignment with the private sector can stimulate economic activity.

Lincoln's cost of living, while rising, particularly downtown, is far from prohibitive. Lincoln continues to be a great place to raise a family – so much so that many young professionals who seek out “greener pastures” find life in Lincoln to be greenest of all when they are ready to start a family.

There is a palpable sense of momentum in Lincoln, and community leaders are right to be pondering what the “next big thing(s)” economically may be that will boost the city's global competitiveness. Sustaining that momentum, though, will require better aligning the city's assets, while confronting potential inhibitors of growth.

Talent attraction and retention – among both skilled and underskilled workers – will significantly impact Lincoln's economy. The low unemployment rate means nearly everyone can find work but often not at wage levels or in roles that encourage settling in Lincoln. The low unemployment rate also signals to some businesses that there is not enough talent to justify relocating to Lincoln. As the US economy grows more sophisticated, matching graduate skills with the needs of the marketplace will require close collaboration between institutes of higher learning and major local employers. Quality of life improvements must be matched by affordable rents and better wages, so as to attract and retain young professionals.

Executive Summary

Project Summary, cont.

Lincoln's demographics are growing more diverse. To make full use of this asset, the community must ensure these new residents – and in some cases new citizens – are socially and economically integrated into the whole. They can fill skilled and underskilled positions and make Lincoln more competitive internationally.

Key Challenges are:

- **Workforce attraction and retention** – To truly become a globally competitive city, cities need to attract and retain talent. Toward that end Lincoln's wages, job opportunities and quality of life will need to improve.
- **Second-generation business starters, mentors and founders** – Lincoln has a shortage of such individuals, who are critical to guiding the next generation of successful entrepreneurs
- **Assimilation of newcomers** – World class cities have diversified populations, and Lincoln could stand to do more to welcome and assimilate outsiders.
- **Infrastructure** – Infrastructure is a cornerstone of global competitiveness, and while Lincoln has made significant improvements, there remains a deficit in areas like broadband and roads.
- **Coordination** – Lincoln's myriad assets, including UNL's research departments and its diversified private sector, are not well-coordinated, limiting their economic capacity, as well as Lincoln's ability to attract global attention and foster international relationships.

Taking these assets and challenges in mind, this report puts forth several **key recommendations** (colored in **red** throughout the report) that Lincoln should embrace in its pursuit of economic excellence:

- **Adopt a global approach to business and talent recruitment**
- **Connect UNL, the capitol, Antelope Valley and other strategically important areas of the city through bike lanes, foot paths, landscaping, roadways and other means.**
- **Expand internet infrastructure to include fiber to the home and every business**
- **Host an annual international entrepreneurial event related to sports tech**
- **Invest in big data/predictive analytics**
- **Establish a food safety buyers market where technologies can be demonstrated and purchased**

Growth will need to be smart. (See sidebar on p. 59.) The Haymarket makes for a vibrant downtown core, an enviable pillar to build off of, but it should be understood as a work in progress. Its preponderance of bars and restaurants should give way to a more diversified retail base that appeals to a broader age demographic. Affordable rents and the inclusion of amenities like grocery stores will help attract a critical mass of residents and businesses and cut down on suburban sprawl. At the same time, Lincoln will need new thoroughfares designed to ease traffic and open up new areas for development. This effort should involve vibrant, new mixed-use neighborhoods, and include bike lanes and public transportation options that improve connectivity between city corridors. A master plan connecting select areas will facilitate this process.

Executive Summary

Project Summary, cont.

Public policy, both at the state and local level, can help with talent attraction and retention, and render beautification and infrastructural efforts more effective. Initiatives should be explored with vigor. Our policy recommendations include:

- **CAPCO (an economic development tool for building venture capital infrastructure)**
- **Tax exemption for income from intellectual property**
- **In-state tuition expansion**
- **Façade improvement grants**
- **Public Wi-Fi**
- **Local option funding (or LB840) for workforce development and talent attraction programs**
- **Public art spaces**
- **Master planning that strengthens connectivity between districts and neighborhoods**

Lincoln should position itself ahead of economic trends wherever possible. (See pages 31-34.) Improving broadband infrastructure will improve capacity for businesses across sectors. Predictive big data analytics will inform many leading industries in Lincoln from life sciences to finance and insurance. Prototyping services and robotization also figure to be more central to business activity.

The Vision 2015 group, crucial to the realization of a number of completed downtown projects, has a role to play in this vision plan as well. The group of civic leaders should throw its financial clout behind

several or all of the following efforts:

- Staffing a full-time talent attraction specialist at LPED
- Strengthening connectivity between various districts and neighborhoods
- Expanding internet infrastructure to include fiber to the home and every business
- Hosting annual international entrepreneurial events related to sports tech and big data analytics

Seeing greater cooperation between Lincoln and Omaha stands to benefit the region as a whole, and Lincoln, with an expanding list of economic strengths, is in good position to move the relationship in that direction, especially between their respective University of Nebraska campuses but also in sectors like IT and healthcare. Other areas ripe for collaboration between the two include talent recruitment, entrepreneurship and national and international marketing.

To better compete regionally and internationally, Lincoln should market itself more aggressively. (See p. 40.) The assets are there – from low business costs and a diversified workforce to an attractive quality of life – they need to be highlighted and packaged.

Executive Summary

Project Summary, cont.

To ensure the economic prosperity and global competitiveness of Lincoln, the community should focus on three broad, overarching goals:

- **Develop world class workforce/talent/infrastructure**
- **Nurture a globally competitive entrepreneurial ecosystem**
- **Strengthen collaboration among key economic assets**

These three goals, which form the backbone of the Vision Plan, are **supported by specific strategies and actionable steps** that will facilitate their realization, including:

- Stronger investment in physical and technological infrastructure
- Improving coordination – between large and small businesses; the public and private sector; and training facilities and research facilities with the business community.
- Expansion of talent attraction and retention efforts
- Accelerating the commercialization process
- Growing cluster of angels and mentors in hi-tech
- Establishing specialty areas within tech
- LPED and Nebraska Innovation Campus collaborating to attract international entrepreneurs



Executive Summary

Project Summary, cont.

Best practice examples highlighting strategies effectively undertaken by other communities that Lincoln can glean from are strewn throughout the report.

A section on **existing and proposed public policy incentives** is also included. The initiatives speak to the goals and strategies we've put forth in the recommendations and which can be advocated for by the Lincoln Partnership for Economic Development (LPED) and its partners at the local and state levels.

An **implementation matrix** will supplement this report. The matrix prioritizes actions, assigns economic development partners and sets the actions on a timeline, allowing LPED to review the progress and levels of success of the Vision Plan.

Lincoln's operating budget is significantly lower than comparable benchmark cities. (See table on p. 34.) The Vision Plan calls for **additional funding** to shrink that deficit and allow LPED to successfully carry out the initiatives put forth in this document. The additional funding will be essential to the success of the plan.

Time waits for no one, especially in the hyper-competitiveness of the 21st century, in which communities either control or are controlled by the unsympathetic realities of globalization. Winners in this fluid, rapidly evolving landscape have a vision for themselves and pro-actively pursue it. Lincoln has a track record of successfully building community support for and advancing its economic interests.

This plan is Lincoln's most ambitious yet. It will be the most challenging to implement, given its international scope, its emphasis on mastery of technology in various fields, and the need to anticipate industry trends in a fast-changing world.

Successful implementation will thus require a total group effort: strong participation – and partnering – among community members and the private and public sectors. LPED and its partners will require new sources of funding, which will necessitate business leaders adopting a less cautious approach than has typically been the case in the Lincoln area. Additionally, it will require an astute allocation of human and institutional resources, and new forms of institutional capacity will need to be developed in some cases.

Lincoln is on the right track, but greatness cannot be taken for granted; rather it must be relentlessly pursued.

“If we don't lead on this...other states are going to continue to take the talent out of our state.”

- Zach Wiegert, founder of Tetrad Property Group, on Lincoln's need for economic development zones and other incentives

Acknowledgements

AE would like to thank the Lincoln Partnership for Economic Development and the Lincoln Chamber of Commerce, who have retained AE for this project, for their invaluable guidance and support. We would also like to thank members of the Steering Committee, industry leaders and residents who offered their vital insights into the community.

Steering Committee Members	
Member	Organization
Angie Muhleisen	Union Bank & Trust Company
Brad Bryan	City Impact
Brad Strittmatter	Olsson Associates
Cathy Beecham	FUSE Coworking
Dan Black	US Bank
Harvey Perlman	University of Nebraska
James Abel	NEBCO, Inc.
James Bowen	Five Nines Technology Group
Kimberly Russel	Bryan Health
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Marc LeBaron	Lincoln Industries
Mike Dunlap	Nelnet
Rick Hoppe	City of Lincoln
Sue Wilkinson	Ameritas Life Insurance Corp.
Thomas Smith	Smith Hayes Financial Services Corporation
Tom Henning	Assurity Life Insurance Company

Stakeholder Engagement & Market Assessment



Downtown Lincoln

Stakeholder Engagement

The initial phase of the project included stakeholder engagement through one-on-one interviews and a community wide survey of residents and businesses. Both of these contributed to understanding the vision and goals of the community’s economic development efforts. **The survey garnered impressive support from the local residents and businesses. In total there were nearly 3,000 responses.** For the resident survey, more than half of respondents are 45 years or over. Eighty-seven percent reported a secondary degree. Approximately 3 out of 4 respondents report a higher household income than the median in the Lincoln MSA. Nearly 80 percent have lived in Lincoln for 10 or more years.

In a series of questions, residents were asked to, first, measure the importance of a number of economic development factors and, second, to rate Lincoln’s performance on each. **Public schools, affordability, and jobs were the most important factors according to respondents.** Employee compensation and available jobs/underemployment had the widest gaps between importance and Lincoln’s performance.

The business survey drew a diverse set of responses from various industries, but the most common reported business types were professional services, finance and insurance, and construction. Almost half of respondents employ under 10 workers. **Forty-five percent of respondents have been in business in Lincoln for 25 years or more.**

In response to a similar series of questions that were asked of residents, **talent attraction and retention, quality of life, and access to customers were cited as the most important factors to businesses.** In general, the gaps between business respondent’s measure of importance and their rating of Lincoln’s performance were less pronounced than residents. However, tax climate and their ability to attract and retain skilled employees did show sizeable gaps.

Resident Respondent Factor Comparison

	Importance	Rating	Difference
Quality of public schools	4.50	3.97	0.53
Cost of living	4.45	3.50	0.95
Affordable healthcare	4.41	3.33	1.08
Available jobs/underemployment	4.41	3.35	1.06
Affordable housing options	4.39	3.45	0.94
Employee compensation	4.28	2.99	1.29
Aesthetics/appearance	4.24	3.62	0.62
Parks and resources for recreation	4.23	3.84	0.39
Creative and cultural arts scene	3.82	3.68	0.14
Parking availability	3.79	3.12	0.67

Strengths to Promote

Our analysis of Lincoln’s quality of life and business climate identified the strengths, assets, and challenges important to the economic development of the city.

Diverse Mix of Industries

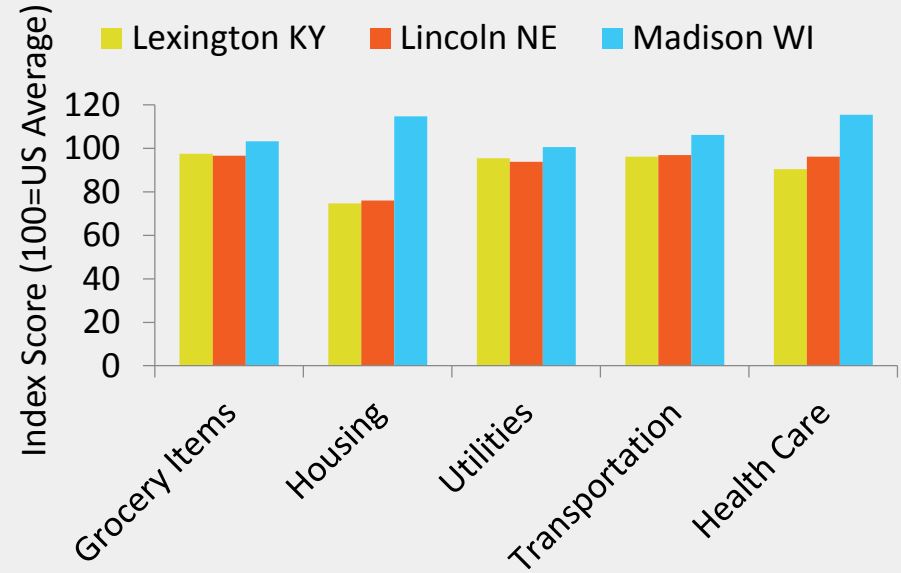
Lincoln has a diverse mix of industries, as determined by the sizeable concentration of various sectors of the local economy. The measure used to determine the strength of industry clusters is called a location quotient (or LQ). LQs are the ratio of people working in a sector locally compared to the ratio of people working in the sector nationally. An LQ above 1 indicates that the local area has a larger share of employment in that sector than would be expected nationally. LQs around 2 and above are particularly strong clusters. Lincoln has a number of sectors with an LQ around 1.5, meaning that there sizeable clusters in a variety of economic activities. This data is shown in detail on page 68 of the appendix.

Lincoln’s economic diversity allows it to remain relatively unaffected from downturns in the national economy. The recession had an effect on employment in Lincoln, but since 2010 employment has grown by 5 percent. The sectors that witnessed the strongest growth have been trade and transportation, business services, and education and healthcare.

Low Cost of Living

Lincoln is less expensive on a number of household costs that give it an edge in attracting talent from outside. In particular, housing is much less expensive. Most housing units are valued below \$200,000. Median housing values in Lincoln are lower than all of the benchmark cities and the U.S. average. Yet, there is also evidence that there is a shortage of housing, which may be driving up costs. For renters, more than half pay under \$750 per month, compared to just a third nationally. Yet, despite a low median rent, half of residents are putting over 30 percent of their income toward their rent. A variety of reasonably priced housing options are needed to attract a diverse workforce.

Comparison of Major Spending Categories (2014)



Cost of Local Government (2013)

City	Cost of government per capita	Cost of government per household	Percent of median household income
Lincoln	\$507	\$1,294	2%
Lexington	\$938	\$2,350	5%
Madison	\$1,098	\$2,588	4%
Boulder	\$1,115	\$2,797	4%

Sources: C2ER; US Census Bureau; current local city budgets

Strengths to Promote

Educated Workforce

Lincoln has a number of options for higher education that it can offer to current or potential residents. Degree attainment is higher than both the U.S. and statewide averages at the high school and bachelor's degree levels.

Quality of Life Amenities

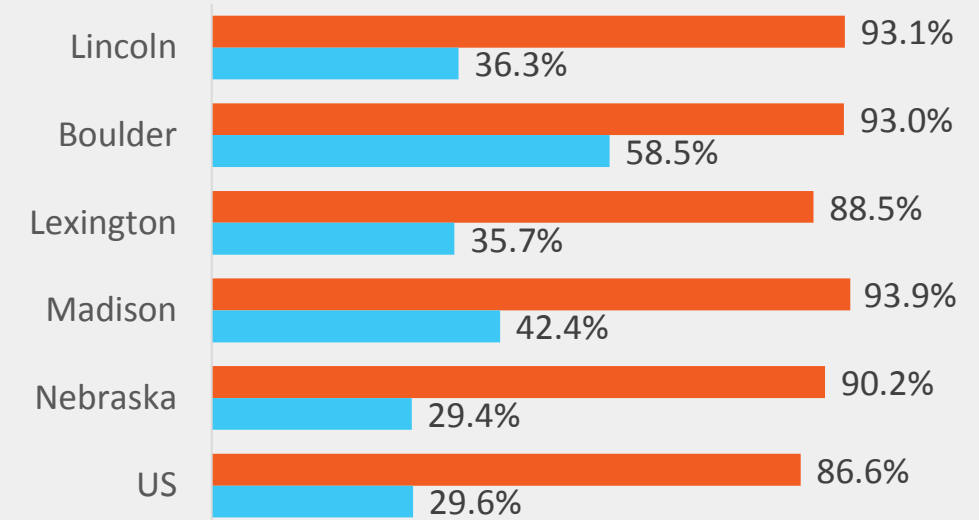
Amenities like parks and trails can help attract talent to Lincoln. Such green spaces have been shown to add monetary value to adjacent properties. Lincoln has more acres of park space per 1,000 residents than the benchmark cities.

The Haymarket district is a strength that can be used to promote the city to outside talent. It is succeeding as both a commercial and residential district. It is likely that pent up demand and the district's proximity to UNL has contributed to its success. The district has also been able to draw consumers from other parts of the city, as well as those who live outside the city. A retail leakage study shows a retail surplus in Lincoln, meaning that retailers are drawing consumers from outside the city.

Startup Scene

Lincoln's startup scene is composed of venture capital funds, a network of angel investors, an accelerator, and a business incubator program. The health of Lincoln's startup scene depends on these groups working together and cultivating the other aspects of Lincoln's entrepreneurial ecosystem. Recently, the number of deals in the state of Nebraska has increased, while the value of those investments have yet to reach the heights seen prior to the dot-com bubble. Since 2010, Nebraska's state VC investment ranking among other states has jumped from 45th to 35th. In terms of VC deals per capita, Nebraska ranks 15th.

Degree Attainment (2013)



■ Percent high school graduate or higher ■ Percent bachelor's degree or higher

Parks & Trails Comparison

City	Acres of Parkland	Acres per 1,000 residents	Miles of Trails
Lincoln	5,974	22	78
Madison	2,600	11.6	51
Lexington	4,275	16	27
Boulder	1,490	14.4	145

Sources: US Census Bureau; current local master plans

Assets to Leverage

Venture Capital Growth

A handful of startup companies in Lincoln have been successful enough to gain recognition for their significantly quick rate of revenue growth. Hudl's growth has been phenomenal, growing 2,500 percent between 2009 and 2012. These fast growing companies, however, are not unique to one sector of the economy but instead mirror the diversity of industries present in Lincoln. Compared to all metropolitan areas in the U.S., Lincoln has a significant location quotient, 2.4, for venture capital deals. A challenge going forward will be in retaining these companies once they need to expand.

Attracting Statewide Talent

The majority of individuals coming into Lincoln are coming from various parts of Nebraska. Nearly 3,000 people moved from Douglas County (Omaha) to Lancaster County in 2012. Most who are leaving are relocating to either larger metro areas (San Francisco, Denver, and Miami), likely for the greater variety of employment opportunities, or small communities.

International Trade

International trade in Lincoln centers on transportation equipment (e.g. Kawasaki) and machinery manufacturing. Compared to the benchmark communities, Lincoln has fewer exports in total and per capita.

R&D Expenditures

Academic research and development is a key driver to Lincoln's economy, but the community can do more to leverage it as an asset for economic growth. Expenditures for academic research have been increasing since 2010 at UNL, but the university is still behind the institutions located in the benchmark cities. UNL ranks 16th in the U.S. in academic R&D spending for agricultural sciences, a subset of life sciences.

Fast Growing Companies in Lincoln

Company	3-yr Growth (2009-2012)	Revenue (2012)	Industry	Employees
Hudl	2535%	\$14.1 million	Software	73
Infogressive	293%	\$2 million	Security	12
Five Nines Technology Group	145%	\$10 million	IT Services	57
Executive Travel	126%	\$3.8 million	Travel & Hospitality	34
Lincoln Industries	79%	\$118 million	Manufacturing	467
Pen-Link	59%	\$23.3 million	Software	67
Heme Management	45%	\$3.8 million	Health	19

Academic R&D Expenditures (2013)

Institution	Expenditures	Expenditures per student
University of WI - Madison	\$1.1 Billion	\$26,000
University of CO - Boulder	\$386 Million	\$12,000
University of Kentucky	\$340 Million	\$12,000
University of NE - Lincoln	\$267 Million	\$11,000

Sources: Inc 5000; NSF

Challenges to Overcome

Low Wages

In Lincoln, median incomes are just above the U.S. average and not distinctly different than the rest of the state. Metropolitan areas throughout the U.S. generally have higher median incomes than non-metro areas. This is the case for both of the major metro areas in Nebraska. However, whereas the difference between Omaha and the state average is over \$5,000, the gap between Lincoln and the state is under \$500. Much of this likely has to do with the low competition from workers outside the region. If Lincoln is able to draw more talent from outside, wages are likely to increase due to greater competition.

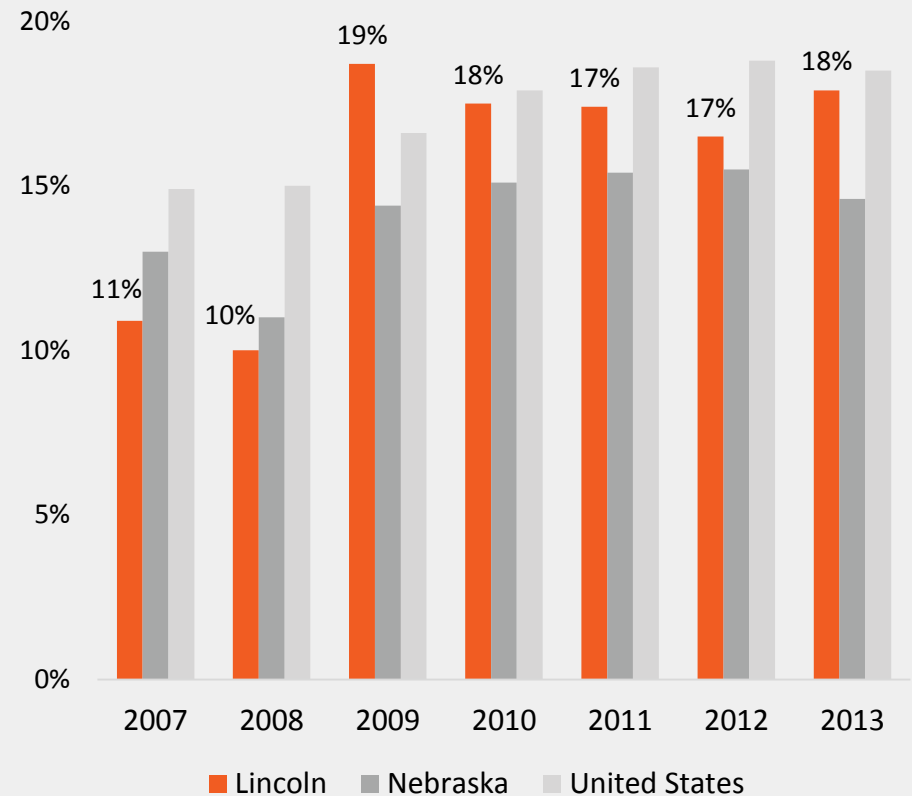
Low Unemployment

Another challenge for Lincoln is one that is less obvious. Lincoln has historically had a low unemployment rate compared to the nation as a whole. When thinking about the quality of life for local residents, this can be a sign of economic stability. Yet, low unemployment rates can pose challenges for employers if the region cannot attract enough workers from outside, as well as diminish the abilities of companies to expand or relocate in the area.

Increases in Poverty

In 2007, 11 percent of families with children were in poverty. As of 2013, that share jumped to 18 percent. During that time, Lincoln saw a greater increase in poverty than seen nationally. The roots of poverty in Lincoln and the increases that the community has seen in recent years should be better understood so that Lincoln can afford more residents a high quality of life.

Percent of Families with Children Under 18 Living in Poverty (2007-2013)



Sources: US Census Bureau

Challenges to Overcome

Talent Attraction & Retention

Being able to retain the best and brightest of Lincoln, coming out of high school or college, is a top priority for the city. The job market and higher education opportunities, apart from an amenable quality of life, have kept a number of graduates at both levels in the city, but Lincoln can do more to ensure that graduates create a lasting bond locally. Out of all UNL graduates reporting employment from December 2009 to August 2014, just under 70 percent stayed within the state of Nebraska. More than half of those who stayed in the state were residing in Lincoln. Three colleges, Agricultural Sciences & Natural Resources, Business Administration, and Education & Human Sciences, reported above average retention of students in the state. Colleges reporting below average include Engineering, Arts & Sciences, Architecture, Fine & Performing Arts, and Journalism.

Lack of Diversity

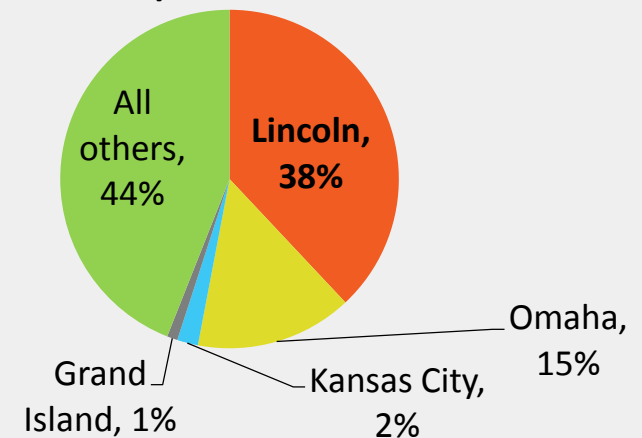
Although the city attracts a lot of individuals for education and work, when compared to the benchmarks Lincoln is not all that diverse. Lincoln also has the lowest share of foreign born residents. The U.S. share is nearly double. Diverse communities benefit from stronger ties to the global economy and trade. Attracting international talent can further the goal of extending Lincoln's global reach. Some positive signs of change have occurred, however. The top three minority groups have witnessed growth since 2008.

Mobility & Density

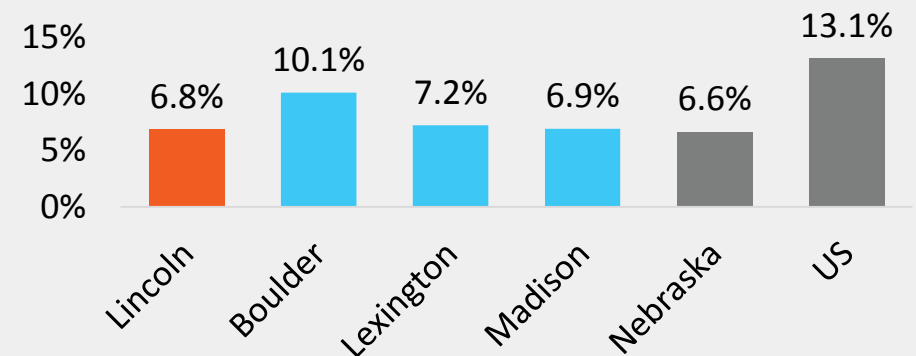
Mobility is an important challenge for Lincoln if it is going to continue to grow. Most of its residents work in the city's core and commute alone, meaning that local roadways will feel the stress associated with additional commuters. Providing the infrastructure to grow nodes of activity along the city's edge can help solve some of the mobility issues, but Lincoln should also look to balance outward growth with a focus on downtown and central city redevelopment. Downtown and the

Haymarket district enhance the appeal of the city. Having a wider variety of transportation options and better unifying them through bike lanes, foot paths and other connective measures can help these districts become more dense and socially and commercially vibrant.

Top Destinations for Employed UNL Graduates (2009-2014)



Percent Foreign Born (2013)



Sources: UNL Career Services; US Census Bureau

Target Industry Analysis



Pinnacle Bank Arena

Selecting Target Industries

Economic development is most efficient when local professionals have detailed targeted industries which can give focus to their resources and efforts. The most significant benefit of targeting industries comes from the creation and cultivation of industry clusters. Types of businesses, like people, tend to cluster in a location because of the presence of resources, workers, or ideas. Because of this, cities tend to find that certain industries, often with unique specializations, have decided to concentrate in their area due to the quality of one of those elements.

In order to decide on what industries Lincoln should target, it should be determined what clusters already exist, which ones are growing, what assets Lincoln has to support their growth, and which industries are the best match to achieve the project's stated goals. **This information was used to select the target industries and it is bolded in each industry section. Additional information can be found in the appendix.**

Filter 1 – Industry Clusters

Location quotients (LQs) above 1 indicate that the industry has a greater concentration locally than nationally. Clusters with a particularly high LQ are a likely sign of local industry know-how, exceptional employee skills, developed supply chains, and heightened R&D activity. Industry clusters can provide greater efficiency of resources and lower costs of doing business. There are a number of **strong clusters found in Lancaster County, which include healthcare, arts & entertainment, finance and insurance, and transportation & warehousing.**

Filter 2 – Growth Industries

If clustering is the initial filter in the selection process, then growth is the second. Each of the strong clusters listed above have seen local growth in Lincoln over 10 years. **Clusters that have seen national growth, such as business services and professional and technical services have opportunities to grow locally.**

Competitive Assets



**Burgeoning startup
Community/State incentives**



Nebraska Innovation Campus



Haymarket



Research Activity



Diversified Economic Base



Strong Work Ethic



**Abundant Resources for Education
& Training**

Selecting Target Industries

Filter 3 – Competitive Assets

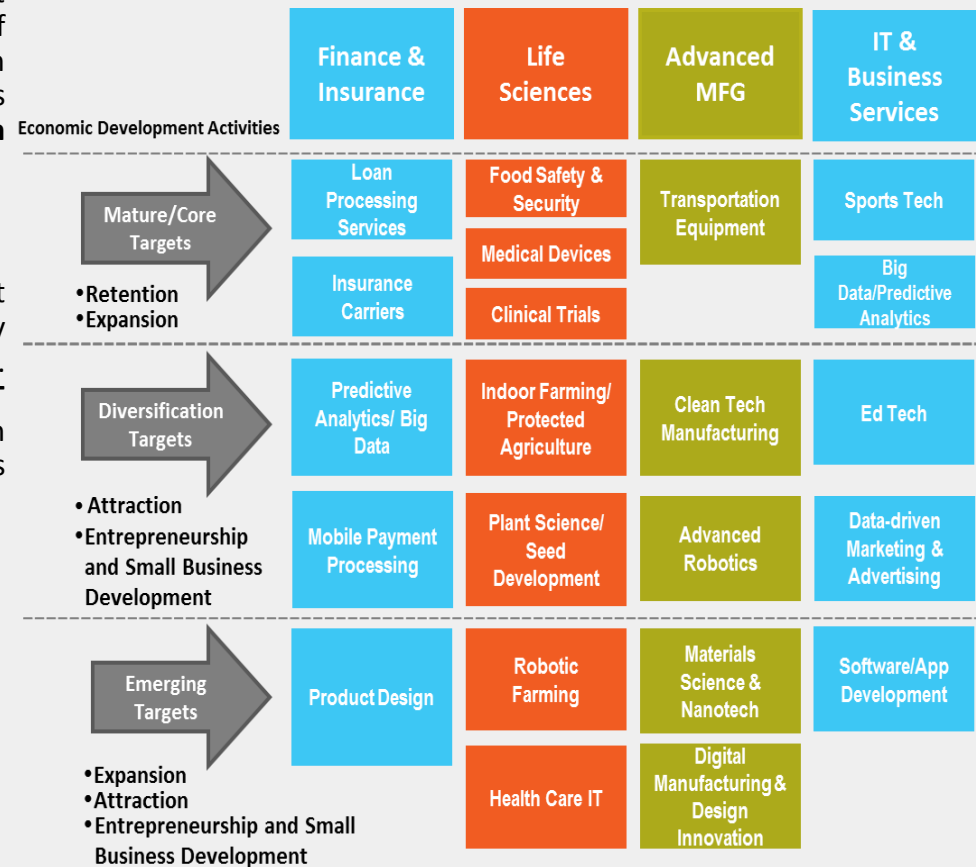
Local economic development assets are the third filter used to select target industries. **These competitive assets are listed above.** Many of Lincoln’s strengths center on **entrepreneurship and innovation**, which have been used as a theme throughout the development of industries and niches. **Advanced manufacturing, life sciences, and the tech industry were determined to be the best matches for those assets.**

Filter 4 – Project Goals

The project vision provides us with the final filter to select target industries. The goals of the project, as stated previously, focus primarily on workforce and infrastructure, entrepreneurship, and collaboration. **Finance and insurance, life sciences, advanced manufacturing, and IT and business services** can help meet those goals. A rationale for each target industry, as well as a summary of the analysis conducted is presented in the remainder of this section.

Lincoln’s Target Industries & Niches

After sifting through all of the filters, finance and insurance, life sciences, advanced manufacturing, IT & business services were chosen as target industry. We believe that targeting these industries will benefit Lincoln’s economic development efforts. This does not mean that no other industry will grow locally, but that focusing resources in their direction will help the community meet their goals. Each of these industries have smaller clusters that can serve as specializations, or niches. The graphic to the right organizes those niches by the niche’s status in Lincoln (either mature, emerging, or providing diversification). A general description of each niche follows the rationale and analysis for each industry.



Finance and Insurance

The Finance and Insurance industry in Lincoln includes providers of financial and insurance products, as well as companies that offer services associated with those products. This industry is one of the most mature in Lincoln, meaning that **the cluster has a particularly solid foundation in the area**. Due to this, there is a **developed pool of local talent** with skills in this trade. Locally the industry has seen **steady growth** in most of its components (as shown in the table to the right), unlike trends seen nationally. Given the support found for innovation in Lincoln, local firms are in strong position to capitalize on industry wide changes that demand product customization. These elements together provide a strong rationale for targeting Finance and Insurance.

Throughout the US, Finance and Insurance has seen declines in employment since 2008. In comparison, the state of Nebraska saw a small decline (about 1 percent per year) during the recession. Employment in Lincoln, however, has been relatively steady. **A few of the smaller components of the industry have seen considerable growth in local employment since 2003**. Average wages in Lincoln have increased by 36 percent since 2003, which mirrors statewide and national trends.

This industry's key occupations, which can serve as a guide for attraction, retention, and development efforts, are found in the appendix. An examination of occupations for this industry shows that locally there are few financial managers/analysts, given the relatively low LQs. Overall, **there are many high-growth occupations projected for this industry**, which may be indicative of the changing nature of the industry. Since the industry is fairly mature in Lincoln, the salary index appears relatively strong. Thus, it may be more difficult to compete with lower wage communities.

The target industry analysis also included an examination of local business operating costs for this industry. This was done by creating a model business, detailing the major costs associated with employee compensation, building and lease costs, property taxes, and utilities, and comparing those costs to communities that may be competing for that

2013 Annual Industry Facts

Establishments: 623

Employees: 10,500

Total Wages: \$571 M

Finance and Insurance Areas of Growth

Industry Component	Local 5 yr	Local 10 yr	US 5 yr	US 10 yr
Insurance Carriers				
Depository Credit Intermediation	X	X		
Agencies, Brokerages, and Other Insurance Related Activities		X	X	X
Nondepository Credit Intermediation	X	X		
Activities Related to Credit Intermediation	X	X	X	
Securities and Commodity Contracts Intermediation and Brokerage	X			
Other Accounting Services	X	X	X	X

10-year growth = 2003-2013, 5-year growth = 2008-2013

Sources: Bureau of Labor Statistics, AngelouEconomics

same business. For this industry the benchmark locations chosen for the cost of operations analysis included **Boulder, Lexington, and Madison**. The results show that **only Lexington is cheaper than Lincoln**, which is a product of the lower wages for finance and insurance workers in Lexington. The high average cost savings (across benchmarks) for employee payrolls seen in Lincoln is a product of higher wages in Boulder. Lincoln has utility and lease payment savings when compared to all of the benchmarks.

Finance and Insurance

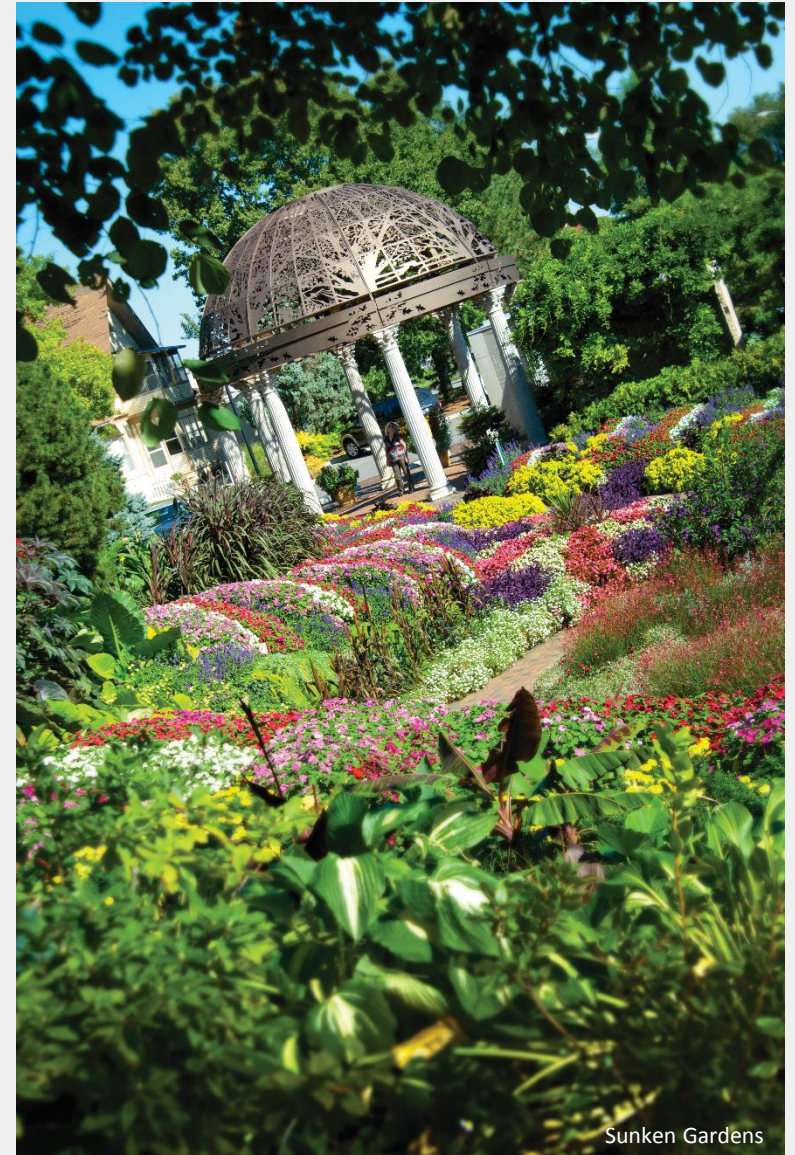
Within each industry there are certain niches that would benefit from an expanded economic development focus. Some are mature, or established, industries that will require support for expansion and retention. A few are emerging industries that will need an extra focus on attraction, as well as expansion. Others are industries that can help diversify the local base of companies.

Loan processing services: This mature niche is particularly strong in Lincoln, and continues to grow. The broader industry trends dictate that financial products, including loans, will need to better meet individual customer needs. Thus the processing of loans and the services that are provided to customers must become more flexible and responsive.

Insurance carriers: Even without considering the shifts occurring in medical insurance, the insurance industry is witnessing a multitude of developments that will likely change the kinds of products offered and the ways in which they are managed. Consumers desire policies that are both easy to navigate and “smart,” meaning that they are better tailored to their unique lifestyles. As the middle class grows in other regions of the world, life insurance products become more affordable.

Mobile payment processing: Apple, Google and other heavy hitters as well as startups are moving into mobile payment processing. The niche is anticipated to disrupt the fundamentals of monetary transactions, and there will be plenty of support service opportunities.

Product design: As finance and insurance companies offer more online services, product design will be central to their success, especially with younger generations. Successfully tapping emerging markets, where customer interest is expected to increase, will require further advances in product design. Information technologies like mobile devices, social media, big data, cloud computing and predictive modeling are driving competition, and successfully incorporating these technologies into product design will be central to success.



Life Sciences

The Life Sciences industry includes a mix of services, product development, and research into health and food. Nebraska's significance to food production nationally allows Lincoln the opportunity to expand its presence in related activities. Additionally, **UNL has strong research assets in agriculture and food sciences that can serve as an engine for growing this industry locally.** The new Nebraska Innovation Campus can be a cornerstone for furthering the commercialization efforts of UNL. Strong local healthcare providers, along with growth in the healthcare industry at all levels, provide a solid rationale for a continued Life Science focus in Lincoln.

Local employment growth has been strong, apart from a small dip in 2011. Statewide and national employment have remained much steadier, averaging 1 percent to 3 percent per year from 2009 to 2012. **Businesses that support agricultural producers, as well as healthcare services, saw the largest increases in employment locally.** Wages, however, are growing at a slower rate nationally, indicating that the broader economy is seeing job growth at lower-paying positions.

This industry's key occupations, which can serve as a guide for attraction, retention, and development efforts, are found in the appendix. **Occupations found in this industry include a variety of educational backgrounds and skill levels.** Lincoln has fairly competitive wages for occupations in this industry. Since Life Sciences is among the highest projected growth industries, it is therefore important to ensure that workforce development of this industry receives adequate support.

In the Life Sciences, **the benchmark locations were Boulder, Lexington, and Madison.** The results show that Lincoln is the second lowest in total operating cost. Lexington's low property taxes contribute to the lower total cost. **Lincoln is competitive on payroll, which accounts for nearly 65 percent of the total cost,** and building costs across the board.

2013 Annual Industry Facts

Establishments: 2,183

Employees: 15,400

Total Wages: \$644 M

Life Sciences Areas of Growth

Industry Component	Local 5 yr	Local 10 yr	US 5 yr	US 10 yr
healthcare	X	X	X	X
Medical & Testing Laboratories	X	ND*	X	X
Support Activities for Agriculture	X	X	X	X

*ND = No data

10-year growth = 2003-2013, 5-year growth = 2008-2013

Sources: Bureau of Labor Statistics, AngelouEconomics

Life Sciences

Robotic farming: Robotic farming covers the increasingly sophisticated mechanized equipment being used – or will be used – for everything from milking livestock and shearing to tilling cornfields and pruning and weeding. Farmbots, or agribots, can be aerial or land-based, and can be used to reduce production costs, improve consistency, and increase yields and scale of production. Given R&D activity at UNL and Nebraska’s tradition of agriculture, Lincoln is in a strong position to capitalize on this niche.

Indoor farming: Indoor farming entails the production of agriculture in smaller spaces that produces higher yields than traditional farming. It makes farming possible in city environments and helps meet the growing demand for locally harvested produce. Vertical indoor farming, in which planters are stacked to the ceiling, consumes up to 98 percent less water and 70 percent less fertilizer than outdoor farming. Here again, given the research activity and Nebraska’s proficiency in agriculture, this niche is a good fit for Lincoln.

Plant science/seed development: This niche includes the study and manipulation of plants and seeds to produce more favorable outcomes in terms of yields and environmental adaptability. Activities at Nebraska Innovation Campus compliment this niche.

Food safety and security: This niche covers the prevention of illness from food through proper preparation and storage; and the availability, access, and utilization of food. The science of this area is growing more sophisticated through technology, and the niches above along with research areas at UNL make it a good match for Lincoln.

Medical devices: Medical devices are used to diagnose, treat and prevent health conditions. The Affordable Care Act included a \$20 billion dollar tax on the medical device industry, but that won’t dim this niche’s outlook as much as some have predicted. Telemedicine, preventive care and self-monitoring are all gaining traction in the health industry and medical devices are central to their being.

Further increasing medical device demand is America’s ageing population, and growing interest in emerging markets. Lincoln’s larger healthcare companies are in good position to leverage their existing contacts to develop this niche.

Clinical trials: Lincoln’s major healthcare providers, along with local institutions of higher education, are well fitted to advance health-related research through clinical trials.

Healthcare IT: IT is transforming the distribution strategies and business models of healthcare providers, as well as the way patients expect to be treated. IT will be a key determinant in the success of healthcare providers. Given Lincoln’s growing focus on IT, and its general strength in healthcare, collaborative efforts in this niche should be sought out.

Healthcare services represent a key component of Lincoln’s economy and are critical to the expansion of the previous two niches.

Advanced Manufacturing

Advanced manufacturing is uniquely positioned for **extending the global reach of Lincoln**. Despite decades long trends of decline nationally, this industry has seen **some local growth**. Advanced manufacturing is an industry that has the opportunity to take a greater hold in Lincoln given the **talent pool, research and development assets, and training programs**. The area's well-trained workforce draws from throughout the state, but could attract workers from more distant areas. The Innovation Studio maker space, housed in Nebraska Innovation Campus, could spur a rise in product development locally.

Following macroeconomic trends, this industry has seen declines in employment and establishments over a 10-year span at all levels. **However, since 2011 the industry has grown between two and four percent per year in Lincoln, which is just slightly above national growth in employment.** Recently, there has been a bit of growth in establishments at the national level, and almost double that rate locally and statewide. This is a promising development, but more can be done to allow this trend to take root.

This industry's key occupations, which can serve as a guide for attraction, retention, and development efforts, are found in the appendix. Like life sciences, the key occupations highlighted for this industry span the spectrum of worker's backgrounds and skills. **Although job-specific training is needed for nearly all, many of the occupations found in this industry require just a high school degree.** A few of the occupations, including team assemblers and industry machinery mechanics, have relatively strong concentrations in Lincoln.

2013 Annual Industry Facts

Establishments: 195
 Employees: 10,000
 Total Wages: \$544 M

Advanced Manufacturing Areas of Growth

Industry Component	Local 5 yr	Local 10 yr	US 5 yr	US 10 yr
Computer and Electronic Products	X	X		
Transportation Equipment		X		
Chemical Manufacturing				
Fabricated Metal Product		X		
Plastics and Rubber Products	X			
Engineering Services		X		X
Electrical Equipment and Appliances				
Machinery	X			
Miscellaneous Manufacturing				

10-year growth = 2003-2013, 5-year growth = 2008-2013
 Sources: Bureau of Labor Statistics, AngelouEconomics

Advanced Manufacturing

Transportation equipment: This is a mature niche, with strong growth and clustering. The trained workforce in Lincoln presents an opportunity to expand the niche, and new opportunities for suppliers should be explored.

Advanced robotics: Robotics are transforming key sectors of the economy, including manufacturing and agriculture, and further investment in this niche will provide Lincoln with competitive advantages. UNL is applying robotics to road safety, surgical procedures and space exploration among other areas, with collaborations occurring between computer scientists, engineers, horticulturalists, medical experts, and industry partners like NASA and the Federal Railroad Administration. Local resources and global interest in robotics make this niche ripe for growth.

Materials science and nanotech: The manipulation of matter at the molecular level, or nanotech, is changing the face of manufacturing, with new materials improving quality and design, and giving American manufacturers a leg up on lower price overseas competitors. Nanotech is a strength of UNL, and the university has recently received a \$9.6 million grant from the National Science Foundation to continue materials research.

Digital manufacturing and design innovation: Technology is revolutionizing manufacturing, so that long expensive assembly lines are no longer needed and manufacturing can essentially be customized from the comfort of a living room, with high performance computing assisting with much of the prototyping and design aspects of the process. The National Center for Manufacturing Sciences estimates that in the future 90 percent of all products will be developed virtually. This niche represents a growing, yet underutilized, competitive advantage for American manufacturers.

Clean tech manufacturing: Clean tech is a growth area making good use of advanced research and technology and which is seeing increased demand nationally and globally. The total cost/profitability equation of clean tech projects varies greatly but viable breakthroughs can be lucrative.

“I think we’re a hardware state by nature. We need to foster our latent talent in hardware.”

- Community Stakeholder

IT & Business Services

The rationale for selecting IT and business services, which includes information technology, software development, marketing, and scientific and technical services, is clear-cut for Lincoln. The industry has **seen growth both nationally and locally**. Lincoln is home to an **expanding startup scene**. There is a maturing resource **base of incubators, accelerators, and investors** that support those startups and entrepreneurs, as well as those to come. The University of Nebraska at Lincoln is producing the talent and ideas necessary to keep the industry moving forward.

Since the latest recession, this industry has seen **strong local employment growth**. **Software publishers have seen a 73 percent growth in local employment since 2008, compared to just 13 percent nationally**. Statewide and nationally there has been business establishment growth in this industry for every year since 2004, whereas Lincoln has been much more volatile. Changes at Gallup did have an effect on a portion of this industry, but software development and IT have been able to keep the industry growing in Lincoln. An increased focus on IT talent retention and development, as well as continued support for local entrepreneurial resources are key to this industry's growth.

This industry's key occupations, which can serve as a guide for attraction, retention, and development efforts, are found in the appendix. Many of the occupations in this industry require a bachelor's degree. This fact should be of no surprise given the level of specialization inherent in the majority of these fields. **A significant number of occupations found in this industry are expected to grow throughout the US by at least 11 percent in the next 10 years**. Lincoln has the ability to take part in that growth. However, comparatively low wages may be a hindrance to attracting workers from outside the region.

2013 Annual Industry Facts

Business Establishments: 407

Employment: 4,600

Total Wages: \$265 M

IT & Business Areas of Growth

Industry Component	Local 5 yr	Local 10 yr	US 5 yr	US 10 yr
IT & Software Development	X	X	X	X
Marketing, Advertising, & Design		X	X	X
Other Professional & Business Services	X	X	X	X

10-year growth = 2003-2013, 5-year growth = 2008-2013
Sources: Bureau of Labor Statistics, AngelouEconomics

Benchmark locations for this industry included Baton Rouge, Boulder, and Madison. Baton Rouge was chosen for this industry because of previous competition for business in this field. **Our results show that Lincoln is the least expensive location for IT services. Payroll and fringe benefits provide the most substantial cost savings.** Boulder's IT workers have the highest salaries, which contributes significantly to the high overall cost of doing business there.

IT & Business Services

Sports Tech: Sports organizations are turning more to technology to gain a competitive advantage, so startups that successfully provide new measures for things like health and performance will be in demand. This niche is a strong suit of Lincoln's, potentially opening up the door for other sports-related startups. This niche can find common cause with the next niche: big data.

Big data/predictive analytics: This niche is making use of analytical methods and processing to fundamentally change the way we receive and interpret large amounts of data. It can be used to forecast outcomes, assess customer preferences, evaluate the health of an industry, and what role a prospective employee is suited for. The insights it provides will feed demand in a number of sectors.

Ed tech: Technology is altering the environments and contexts in which education is taught. The virtual classroom is freeing students up in terms of what time and from where they take classes, and software is changing the nature of courses themselves. UNL and Lincoln's tech sector can join forces to stay out in front of this niche.

Data-driven marketing and advertising: New technologies in data analytics are expanding the range and depth of information collected on people, and opening up new opportunities to marketers and advertisers in the process. Mobile devices and other communication platforms are making it possible to reach customers in innovative, customized ways. The technology and data has not been fully utilized, presenting significant opportunities for new entrants in this niche.

Software development: This niche has become vital to Lincoln's burgeoning tech sector and has also seen strong growth nationally. Software development can make businesses more efficient, reliable and innovative, and growing this niche will be beneficial to the industries and many of their components identified in this section.

“If Lincoln is going to compete in IT it will be with talent, and we need to attract doers.”

- Community Stakeholder

Strategic Recommendations



Pinnacle Bank Arena and the Haymarket

Strategic Recommendations for a Globally Competitive City

Globalization has expanded cross border flows, with information, goods and capital traveling faster and cheaper over longer distances and technology being central to that process.

Globalization demands that locations stake out competitive advantages for themselves or risk talent and investment flowing elsewhere. Locations are still influenced by geography, culture, and natural resources, though globally competitive locations find ways to overcome these limitations. The island-state of Singapore compensated for its lack of natural resources through market friendly policies, first-class infrastructure and investment in top international talent. China has adopted quasi-free market policies to lift millions out of poverty. Israel has mastered technology to “make the desert bloom.”

There is no single path to global competitiveness. But certain ingredients improve the prospect of success.

Globally competitive cities and states tend to have **efficient, business-friendly governments**. In Singapore it takes 2.5 days for entrepreneurs to open a new business; 26 days to get a construction permit; and 4.5 days to register a property. Tax incentives come in various forms. The result is foreign firms bring their capital, technology and skills; and locals glean their expertise to grow the local ecosystem.

Globally competitive cities have a **vision for themselves**. The vision is not a copy of another’s but compatible with local resources, talents and interests. The vision pursues specialization in areas with long-term economic viability. The vision is diversified industry-wise, which will cushion the city from sectoral downturns, or collapses like that of steel and autos in the US in the 1970s and ‘80s. The vision involves progressive education and training: Industries change and therefor the types of people needed to make them hum change. The vision should encompass quality of life and place too. It should address issues like affordability and traffic flows as well as beautification and entertainment and cultural

offerings; this facet of the vision should be updated to accommodate for changing demands. Singapore, for example, grew into a shopping and dining mecca, set amid glass skyscrapers and lush tropical greenery but developed a reputation for being paternalistic and sterile. As its population has become more international and discerning, Singapore has given wider berth to social and political expression, and opened things like a performing arts center, galleries, museums, and casinos.

Internationally competitive cities **embrace and master technology** to give themselves a competitive edge and open the door to new opportunities.

Internationally competitive cities **pay livable wages** and avoid the deleterious effects of underemployment. They are constantly looking to tap new markets, including those in the developing world where middle classes are growing and purchasing power is on the rise.

Competitive cities **invest in infrastructure**, including roads, telecomm, water, rail, and power. But they are also mindful that hardware without the “software” will not suffice. Former Malaysian Premier Abdullah Badawi lamented that his country’s push toward developed status had stalled due to “first world infrastructure, third world mentality.” Critical thinking and entrepreneurship must accompany the physical development. A **strong entrepreneurial culture** spurs innovation. Entrepreneurship is cultivated through education, research, government support and a climate of cooperation that aligns the economy’s tangible assets. Policies related to entrepreneurship should be nimble in their responsiveness, able to adapt to changes in capital flows, technological advances and labor trends.

Future at a Glance

“Does it work? If it works, let’s try it. If it’s fine, let’s continue it. If it doesn’t work, toss it out, try another one,” is how Lee Kuan Yew, the founding father and first premier of Singapore described his approach to governance, which saw his country transform from an island backwater into a first world powerhouse in a 30-year span. Put another way, successful communities go out and get what they want. Relatedly, they stay ahead of trends, rather than emulating the paths of other communities and surrendering to a perpetual game of catch-up.

The target industries chosen for Lincoln are set to undergo significant change and disruption due largely to technological advances. Below is a snapshot of where each is headed so that Lincoln can stay out in front of the future and own it.

Life Sciences

Agriculture: Agriculture will become more data-driven and mechanized. Crop yields will increase and growing cycles will shorten. Robots will be used to check crops for disease, growth, and moisture levels, as well as to prune plants, pick fruit at optimum ripeness and hoe weeds from plant bases. Drones will be employed to spray crops with pesticides and herd animals. Milking “robots,” with lasers and 3D cameras, will reduce the need for human intervention at dairies. (Some of these robots are already in use, though it may be decades before they reach commercialization, providing ample opportunity for Lincoln-based companies and entrepreneurs to perfect their form and function.)

Farming will become more precise through what is known as smart, or precision, farming. Precision farming has typically relied on satellite navigation systems but is beginning to use the Internet of Things to make more efficient use of arable land. It will also be used to improve crop

quality; remote sensing data, for instance, will show where your crop is prospering and where it is not and what’s needed to bring the deprived areas up to speed. Access to data about harvesting and yields may help to more accurately appraise a farm’s value.

As land grows more scarce, indoor farming will pick up. The trend is taking root in some urban areas, where crops like lettuce are stacked in tight rows beneath grow lights. Indoor farming will allow farmers to meet rising demand for locally grown food among urban consumers. Advanced hydroponic and aquaponic methods will produce up to 20 harvests a year and 200 percent more food per square foot than regular agriculture. Potentially high startup costs – for equipment and warehouse space – will not be a deterrent given the profit potential. Indoor farming will not simply be outdoor farming on a different scale; new challenges will arise, demanding new solutions and expanding the niche’s economic potential further. Indoor farming, for example, will emit yet more carbon dioxide into the atmosphere, and so making renewable energy work in the controlled environment will be critical.

“Lincoln has made remarkable progress over the past fifteen years – slow and steady has transformed to significant and noteworthy.”

- Community Stakeholder

Future at a Glance

Health: Technology will lead many of the shifts in healthcare. Communication between patient and provider will be revolutionized by electronic health records, cloud computing, data storage and mobile devices. Medicine will be more personalized, treatment will be image-based and less invasive. Satellite hospitals will become a reality through remote patient monitoring, telehealth, sensors and robotics. Remote monitoring systems will increase the prevalence of home care units, and make treatment more predictive and preventive. Slow adoption of digital healthcare will be overcome by an improvement in quality and reliability of digital services. Mobile health, medicine and health supported by mobile phones, will bring changes to the collecting and delivery of data, monitoring of data signs and care provision. mHealth will flourish in industrialized countries but also be used to expand healthcare in developing countries, where mobile phone penetration is high. Countries with expanding middle classes will be attractive markets for pharmaceuticals and health equipment manufacturers, though differing regulatory frameworks will slow penetration. Pressure to improve costs, efficiencies and overall quality could lead to consolidation among large healthcare providers. Advanced analytics and predictive modeling will make it easier to identify and assist high-risk populations. 3-D printing will be used for cell regeneration and replication of small parts of organs.

Advanced Manufacturing

High-precision data technology and advanced digital simulation will make assembly lines at once more flexible and more efficient, ushering in an era of mass-customization.

Computer-driven design, such as 3D printing, will reduce dependence on assembly lines and allow for more small-scale manufacturing. The factory

will become part of a much broader value chain as services, covering everything from logistics to advertising, become more a part of the manufacturing process.

The ecosystem will grow more complete with cloud computing, analytic tools and software converting raw data into meaningful information and forecasts that improve monitoring and systems and equipment response times.

Sensors are turning most aspects of the manufacturing process into potential data sources, which promises to provide important information on everything from the physical fabrication process to overall product performance, without the creation of a physical prototype in some cases.

Increased robotization and mechanization will grow demand for maintenance professionals, though overall the trend will be toward fewer people.

New materials, like nanoparticles, will improve quality and boost demand. This and the aforementioned areas will continue to offer American manufacturers an edge over low-price overseas competitors. But maximizing these advantages will require strong investment in R & D capacity and training workers and managers in the fast-changing dynamics of the global supply chain.

Purchasing power and consumption levels will increase in the developing world, providing new market opportunities for American manufacturers who adjust their strategies and production capabilities accordingly.

Future at a Glance

Insurance and Finance

Emerging markets will take up more of insurers' portfolios, as the old continue to outnumber the young domestically, and developing world populations lean young and their middle classes grow.

Technology will drive product differentiation. The Internet of Things (IoT) – covering sensors, big data analytics and data stores – will offer evermore data on potential customers, allowing insurers to better tailor their products and more accurately understand who they are insuring. It will also impact product design, pricing and underwriting.

The internet will make it easier to appeal to younger customers, who are most accustomed to conducting business online, and so improvements to online product design and usability will be key.

Advanced analytical techniques will allow insurers and financiers to more easily turn big data into comprehensible strategies. Unstructured data – including social networks, multimedia sources, text, voice and video – will be leveraged more over the next decade. Digital distribution will help cut costs of entry into emerging markets, and mobile apps, specifically, will be key to reaching rural customers in the developing world.

Insurers and financiers will have to anticipate how the regulatory environment will change domestically and internationally to best tailor their products and services and maximize their profit potential.

Wider access to open source software and cloud computing will encourage new entrants into the marketplace.

Information Technology and Business Services

The Internet of Things – that expanding realm of objects that interact with each other to accomplish tasks without human prompting – will leave an indelible mark on information technology, changing the way we fundamentally interact with our environment.

Driving the IoT will be networks that connect devices and analytics that make use of data flowing between them. Near field communication is one such network, which is a high-frequency, short-range technology informing a range of new consumer applications like Apple Pay but is also working its way into the industrial sphere as well, to do everything from collecting and logging data to carrying out logistics and controlling physical environments.

Companies will invest in more and more areas along the value chain, especially sales and customer applications. Improving and automating production processes will still account for a sizeable portion of IT investment, but will share more of the investment pie with aspects of customer relations like tailored marketing campaigns and data analytics. Data analytics will make customer service faster and more informed.

Merging systems to leverage scale will in some cases give way to decentralized systems built for fewer tasks, so as to make them more agile and flexible. At the same time, standard software packages with fewer custom solutions will make systems less complex, which will cut down costs and improve efficiencies when it comes to launching products and making system additions.

Cloud technology, interfacing and mobile technology will continue to shape the direction of IT.

Traditional purveyors of IT, including finance, banking, utilities, telecoms, and high tech, will remain heavily invested in IT to distinguish their products and services. But IT will become more intrinsically intertwined with a host of other areas, including farming, automakers, healthcare, government, education, even toys. Education will be one of the fastest changing sectors, both physically and virtually, and IT companies that can provide solutions to education providers will likely see a lot of growth.

Future at a Glance

To keep ahead of these trends and truly become a leader in global innovation the community will need to expand its investment in economic development. Lincoln lags behind a number of regional competitors in terms of investment in economic development per capita (as seen in the table to the right). Successful economic management involves robust investment in the future. Most successful cities put \$25 million over five years toward economic development. The strategies put forward in the following section, along with the key recommendations, will require additional funding. Furthermore, the recommendations below can give Lincoln a leg up on becoming global leaders in its target industries.

Some tactical ways to advance your target industries:

- **Create an advisory committee for each target industry.** These taskforces should include academics, government officials and industry leaders. They should focus on industry trends, where Lincoln stands in relation to them and what resources and actions will allow Lincoln firms to succeed.
- **Host industry events that attract industry leaders from around the country and beyond.** This will serve as a platform for networking and information exchanges. It can be used to showcase Lincoln’s economic assets to respective industries and attract future business.
- **Adopt a global approach to business and talent recruitment.** Market Lincoln’s competitive advantages and foster ties nationally and internationally. This effort should include but not be limited to areas where the university and Lincoln-based companies currently have relationships.

Economic Development Organization Funding Comparison

City	Annual Operating Budget	Population - Current Estimate	Budget per capita
Des Moines, IA	\$6,000,000	207,510	\$28.91
Springfield, MO	\$2,750,000	164,122	\$16.76
Nebraska City, NE	\$160,000	15,797*	\$10.13
Hastings, NE	\$250,000	25,093	\$9.96
Omaha, NE	\$4,000,000	434,353	\$9.21
Seward, NE	\$130,000	17,150*	\$7.58
Madison, WI	\$1,300,000	243,344	\$5.34
Colorado Springs, CO	\$1,900,000	439,886	\$4.32
Lincoln, NE	\$865,000	268,738	\$3.22

*Population estimate include whole county
Sources: LPED, US Census Bureau

Project Vision & Goals



Goal One: Develop World-Class Workforce, Talent, and Infrastructure



Develop World-Class Workforce, Talent, and Infrastructure

Without a talented, robust workforce, broader economic aspirations are rendered moot. Increased global competition for workers has made attraction and retention more challenging, while more sophisticated economic processes are placing greater importance on the skills development side of the equation.

Wages still greatly influence where people relocate but increasingly so too do a variety of factors, including a community's quality of life, its image as a hip or economically viable place to be, a sense of belonging, opportunities for skills development and career advancement, and excellence in certain fields.

Lincoln's education system, low cost of living and reputation as a good place to raise a family are strong pull factors. The Haymarket is helping to reshape Lincoln's identity both socially and economically, with its hive of IT activity and living and entertainment and options for young professionals.

UNL is also involved in cutting-edge areas of research that lend themselves to diversifying and growing Lincoln's economy, though retention rates among recent graduates will need to improve.

More lenient visa requirements for foreign-born, high-skill workers advocated by the White House would provide Lincoln with yet another opportunity to expand its talent pool in areas like IT, life sciences and medicine, while training of Lincoln's growing refugee population can help fill positions requiring fewer skills. Success in this area will require training efforts to evolve along with the changing skills needs of the private sector.



“It’s time to launch a ‘return home’ to Nebraska...campaign, because the very low unemployment rate is squeezing out a higher rate of innovation – due mostly to a critical lack of highly skilled talent and risk-taking management types.”

-Community Stakeholder

Develop World-Class Workforce, Talent, and Infrastructure

- **Strategy 1: Expand Talent Attraction Efforts**

- Team up with leading companies in Lincoln's private sector to gain clout with prospective talent
- Expand Lincoln's rebranding efforts
- Adopt a community welcoming strategy

- **Strategy 2: Retain Talent**

- Encourage companies to match wages of locations they are looking to draw talent from
- Grow participation in high school and university internships
- Develop mentorship programs and career development networks targeting young professionals
- Aggressively recruit talent into Lincoln's university system
- Leverage the Lincoln Young Professionals Group to help newcomers network and integrate into the community

- **Strategy 3: Modernize Skills Development Efforts**

- Deploy online education and training for skills-based education
- Strengthen internship efforts through the Career Academy
- Ensure that high school training programs match employer needs

- **Strategy 4: Invest in Physical and Technological Infrastructure**

- Support transportation improvement initiatives
- **Adopt master planning that strengthens connectivity between districts and neighborhoods**
- **Expand internet infrastructure to include fiber to the home and every business**



Shop in Havelock

Develop World-Class Workforce, Talent, and Infrastructure

Strategy 1: Expand Talent Attraction Efforts

Low unemployment and wages have hindered Lincoln's ability to attract the type of workers that will propel Lincoln's economy to the next level. Lincoln has a deficit of workers to fill management positions as well as technical roles in areas like IT and specialized manufacturing. Companies in healthcare and manufacturing are also struggling to fill entry level.

The most successful talent attraction efforts in today's globally competitive world tend to be international in scope. The island-state of Singapore, population 5 million, has blazed ahead of its Asian rivals through a dramatic increase of its foreign-born population, doing so by easing visa restrictions and a willingness to pay top dollar for top research and industry talent. Its reputation for accommodating foreign workers and their aspirations has extended its ability to attract them. Lincoln must do a better job of defining and communicating its economic and social advantages to the outside world.

Key Actions:

- **Team up with leading companies in Lincoln's private sector to gain clout with prospective talent.** Some of Lincoln's top companies have strong ties nationally and internationally and can market themselves as an opportunity to join a worldwide firm that provide excellent career mobility. The effort should pay special attention to locations with a surplus of skilled labor, which will make for a strong "push" factor, where talent is willing to leave. Internationally, the effort should focus on regions that have minimal barriers in terms of language and culture. Job fairs domestically and internationally should also be targeted, with companies from the private sector participating and sharing the cost. Lincoln's Young Professionals Group should assist in marketing of Lincoln's jobs and recruiting fellow young professionals and businesses to the Lincoln area.

Best Practice: IT-ology

Recognizing the importance of the IT industry in central South Carolina and the need to ensure a larger supply of qualified candidates to fill positions in multiple technology companies, a consortium known as IT-oLogy was formed to promote, teach, and grow IT within the region. Originally formed by executives at BlueCross BlueShield of South Carolina, the program has expanded and now has over 40 partner organizations, including CA Technologies, Cyberwoven, IBM, Lenovo, the Mariner Group, and Redhat.

The organization works to achieve a set of three specific goals: change the face of IT by encouraging all students to consider opportunities available in IT, advance IT careers by supporting networking and professional development, and to grow the economy by spurring existing companies to create new jobs and attracting new companies to the central South Carolina region.

Programs offered by IT-oLogy include career fairs, job shadowing, IT camps, gaming development programs, next6 generation IT internships, as well as professional development opportunities through IT-oLogy partners.

For more information visit: <http://it-ology.org/>

Develop World-Class Workforce, Talent, and Infrastructure

- **Expand Lincoln’s rebranding efforts.** Lincoln has earned the right to brag a little – growing its economy over the last decade, revitalizing its downtown and landing on top-ranking lists across a number of categories. Efforts are underway to communicate the city’s economic and social advantages in an identifiable whole that resonates with the types of talent it’s looking to attract. Success, however, will require more funding.
- **Adopt a community welcoming strategy.** This should include networking activities, language classes, cultural exchanges, and support networks for newcomers. It should also include a family matching program, which matches high level executives and their families with similar level employees within their company, industry and community. This will reassure talent that the prospective community can advance their social and professional networks.

“Lincoln and Nebraska will do well not to compare themselves with other parts of the U.S. or [look for] approval from outside. Rather continue to celebrate the unique success which belongs to Nebraska this will become ever more appealing to those businesses and individuals seeking a place to set down roots.”

- Community Stakeholder

Marketing

Lincoln, like Nebraska, is still synonymous with agriculture – not a bad thing in and of itself but hardly the kind of association that will positively grow Lincoln’s reputation and improve its ability to attract and retain talent.

Lincoln has a lot to work with – safety, affordability, a Big Ten University and a trendy, growing downtown. Education levels and work ethic are strong. Trails are abundant. Lincoln often makes best-of lists (#1 America’s Best Cities for New Jobs by Forbes, #2 for Quality of Life by Huffington Post, and so on). Generally, however, people must inquire with Lincoln to get the lowdown, Lincoln doesn’t come to them. Lincoln shouldn’t be shy about communicating its appeal.

More and more, people are looking to quality of life in determining where to locate. Well-paying jobs with opportunity for advancement are important, but without strong quality of life offerings, talent attraction and retention – particularly among the young – will suffer.

Quality of life is not enough, though. As Ronald Pollina notes in his book, *Selling Out a Superpower*, “Excellent quality of life does not compensate for a weak business environment.” The business climate of a place must be promoted – what competitive advantages exist or can be carved out? Then market like crazy.

Develop World-Class Workforce, Talent, and Infrastructure

Strategy 2: Retain Talent

Lincoln's strong work ethic and quality K-12 and higher education offerings make for a rich vein of local talent. Reputedly hipper destinations offering higher wages, better opportunity for career advancement and a wider array of amenities threaten to lure away younger talent. Meanwhile, feeling only tolerated as opposed to truly welcomed into the community is how a number of transplants to Lincoln have described their experience to us; studies show that more tolerant, open places have greater success retaining talent.

Retaining younger talent is especially challenging. About a million young, college-educated people cross into other states annually and many don't settle on a place until their mid-30s. The number of 25-34-year-olds living within three miles of city centers has spiked 37 percent since 2000. So building a vibrant downtown core with a diverse mix of entertainment and housing options will help Lincoln compete for this demographic.

Key Actions:

- **Encourage companies to match wages of locations they are looking to draw talent from.** Lincoln families living in poverty rose from 10 to 18 percent from 2007 to 2013. Lincoln's wages in key industries typically fall below the national average and are sometimes lower still in areas it is looking to target, like IT. UNL graduates in highly funded research areas like engineering are being retained at low levels.
- **Grow participation in high school and university internships.** Lincoln should look to expand the number of interns participating in these programs (perhaps to a few thousand) and to reduce the grade level at which internships begin. The internships should adequately align students' professional aspirations with skills development programs. The state internship program, InternNE, provides a very strong set of tools to foster relationships between students and companies. Like the underskilled worker training program put forward in the public policy section, this initiative could be supported by local option funding.

Marketing, cont.

The marketing effort should be international in scope. International talent attraction will help Lincoln distinguish itself, both economically and in terms of quality of life: an embrace of diversity enriches the talent pool and communicates an inclusive environment.

Press reports of the state of Nebraska have not always painted a very welcoming environment, which undermines talent attraction efforts. Lincoln must, while embracing all that is admirable in the state, distinguish itself from broader negative perceptions. Broader still, Lincoln needs to define itself beyond the Midwest. This should not be confused with disassociation. Midwestern traits, from friendliness to prudence and a strong work ethic, register positively in most people's minds. But those qualities are not likely to draw the best and brightest to Lincoln. The fact is, the Midwest – and Lincoln more so – are more than those traits. As Andrew Cayton, author of "The Identity of the American Midwest: Essays on Regional History," told CNN, "The Midwest has always been a dynamic and diverse place, but that image doesn't fit with what people want to believe."

Finally, any marketing or branding effort should not be self-flattering but rooted in what Lincoln is and has to offer.

Develop World-Class Workforce, Talent, and Infrastructure

- **Develop mentorship programs and career development networks targeting young professionals.** Millennials now account for 34 percent of the workforce (versus 32 percent and 31 percent for Generation Xers and baby boomers respectively). Strengthening networking opportunities, especially for junior employees, can help keep them at jobs and in the community. This can take the form of mentorship “mixers” that allows junior and senior staff to build rapport, and both in-person and online social networking groups catering to young professionals. These efforts can extend to different age groups.
- **Aggressively recruit talent into Lincoln’s university system.** UNL needs to make good on its promise to attract more talent into the university. Recruitment efforts, including marketing materials and acceptance letters, should communicate the benefits of attending university and pursuing a career in Lincoln. Lincoln has jobs; finding work is not difficult, making it easier to attract and retain talent than places with higher unemployment rates.
- **Leverage the Lincoln Young Professionals Group to help newcomers network and integrate into the community.** Lincoln’s YPG is one of the largest of its kind, and is actively involved in many local events throughout the year. The group’s engagement with UNL students and alumni, coupled with its connection to the job market, extend its ability to assist with talent attraction and retention. It should strengthen its relationship with UNL alumni and those from other local colleges to make full use of its potential in this area.

“There must be a change in culture at UNL to encourage support and interaction with business. They must also decide what they long to be really good at.”

- Community Stakeholder

Best Practice: Grey Global Group

Grey Global Group is a New York City advertising and marketing firm that has recognized the importance of catering to millennials within their firm. This year, Grey Global started a seating program where assistant account executives, who are mostly a year or two out of college, start off in the “base camp” area of the office until they are promoted. Most of these young workers share similar concerns, work habits and cultural understandings. The idea is to have entry level workers build a support network with peers, allowing for greater cohesion as well as lessening distractions for senior employees.

For more information visit: <http://grey.com/>

Best Practice: New Mexico - High Wage Jobs Tax Credit (HWJTC)

The New Mexico HWJTC is a refundable jobs tax credit for eligible employers that create net new high-paying jobs in the state. An eligible employer is one that either has 50 percent of its sales outside of New Mexico during the 12-month report period or that is eligible under the Job Training Incentive Program (JTIP). The benefit is equal to 10 percent of the wages and benefits of eligible employees and is capped at \$12,000 per eligible employee for up to four years.

Develop World-Class Workforce, Talent, and Infrastructure

Strategy 3: Modernize Skills Development Efforts

Skills development can establish a career track and boost wage earnings, and thus make workers more invested in a company and their community. Skills development is essential to success – even a matter of survival – in today’s economy, and workers and companies seek out wherever those opportunities are present. Communities with solid skills development offerings find themselves at a competitive advantage.

Key Actions:

- **Deploy online education and training for skills-based education.** Online education represents a growing yet underutilized resource for skills development training. Learning management systems (LMS) like Schoox and Udemy allow companies to configure their own training courses and enables content monetization and product sharing, so that training is cost-effective and highly customized. Online training allows companies and workers more flexibility on when and where to undertake training.
- **Strengthen internship efforts through the Career Academy.** Expand efforts by several thousand entrants. Build stronger relationships between teachers and industry so teachers are better equipped to advise students on skills required of particular career paths and what industries are best suited for specific talents and interests.
- **Ensure that high school training programs match employer needs.** This can help to spur interest in viable career paths. For example, graduates of UNL’s computer science and engineering programs have shown a near 100 percent employment rate with starting salaries between \$50,000-60,000 – yet local demand outstrips supply, due to a lack of information and interest in the field.

Best Practice: Running Start Program

The Running Start Program allows 11th and 12th grade students to take courses at Washington’s 34 community and technical colleges in addition to state universities and colleges. Running Start students and their families do not pay tuition, but they do pay college fees and buy their own books, as well as provide their own transportation. Running Start provides up to two years of paid tuition at any participating institution in the Running Start program. High school juniors who can pass the entrance exam for a local community college may take part or all of their coursework at the community college. Because the program is paid for by the school district, more students will have the opportunity to enroll in college courses and eventually continue on to receiving degrees. Surveys that were sent out to participating students and parents reported that the college courses were more stimulating and worthwhile than high school courses, and 70 percent of students reported “optimal” benefit from the program. Surveys also noted that Running Start increased the communication and collaboration between high school staff and college staff.

For more information, visit:

http://www.sbctc.ctc.edu/college/s_runningstart.aspx

Develop World-Class Workforce, Talent, and Infrastructure

Strategy 4: Invest in Physical and Technological Infrastructure

Infrastructure provides the means for communities to run optimally – efficient transfer of goods, services, and people; quality of life improvements; and the platforms for innovation to flourish. Lincoln’s infrastructure is not subpar but it is not world class either. Traffic is a primary concern of many residents and businesses we surveyed. Broadband is limited in terms of speed and range, and number of service providers. Patches of the city are developing admirably well but there is little in the way of overarching connectivity.

Key Actions:

- **Support transportation improvement initiatives.** The proposed east and south beltways will do much to increase mobility in and around Lincoln and open up new areas for development. The development projects for the 14th Street-Warlick Blvd-Old Cheney Road intersection and 46th-Pine Lake-Yankee Hill, and along O Street will improve traffic flows, connectivity, and economic activity.
- **Adopt master planning that strengthens connectivity between districts and neighborhoods.** This plan should make use of the above-mentioned roadways but also emphasize pedestrian walkways and bike lanes, as well as beautification efforts that bridge various neighborhoods (like Antelope Valley, south of downtown, and the Telegraph District – see sidebar at right) to improve unification around the city and encourage greater social and economic cross flows.
- **Expand internet infrastructure to include fiber to the home and every business.** Lincoln’s current fiber optic network does not provide optimal speeds or user flexibility. Competition among providers is limited. The community should get behind efforts such as the Lincoln Technology Improvement System (LTIS), which will support up to up to 8 new providers and will upgrade the current fiber network to a 10-gigabit capacity system. By 2020, the LTIS is expected to add 100 miles of broadband infrastructure that will connect Airpark, Havelock, and Yankee Hill, among other major commercial areas. It also behooves Lincoln to apply again to become a Google Fiber city as another means of expanding the fiber infrastructure. In the few places that have been added to the program other network providers were pushed to improve their own services.

Developing City-wide Districts

Antelope Valley and the Telegraph District (an area near 21st and N Streets) are ripe for future development. Antelope Valley has low building density but its adjacency to downtown and the university, both set to grow, make it a convenient and strategic place to locate a business or residence and prime the area for robust growth. The Telegraph District, near to downtown and Antelope Valley, is set to undergo a dynamic shift in its identity, with office, retail and a diverse mix of housing set to go in. Growth in both areas along with connectivity between them and adjacent areas will strengthen the economic viability of the city’s core.

“Suburbanization will be the beginning of the end for Lincoln. Imagine no real sense of place being encouraged....Lincoln needs to be concentric with government, entertainment and services at its core.”

-Community Stakeholder

Goal Two: Nurture a Globally Competitive Entrepreneurial Ecosystem



The Haymarket

Nurture a Globally Competitive Entrepreneurial Ecosystem

Entrepreneurial development is no longer as simple as securing a loan and being on your way. Today, entrepreneurship, especially as it relates to technology-driven startups, requires a range of institutional, infrastructural and financial support, including angel and seed funding, incubators, accelerators, co-working and maker spaces, mentoring, and tax incentives.

Successful entrepreneurial ecosystems do not seek to replicate preexisting centers of entrepreneurial excellence but rather build on the strengths and interests of the community. Lincoln has started to do this with sports tech but should look to also grow other areas that are a good fit for the community.

More than anything, growing Lincoln's tech ecosystem will as mentioned earlier require the right kind of people – namely innovators, who not only find it advantageous to set up shop here but who want to stay once their businesses take off; role players like web developers, programmers and marketers; and investors that are receptive to forward ideas. Meanwhile, the tech sector and university must better align its assets.

“Complacency needs to turn into urgency when it comes to high tech, or people won't see the value.”

-Community Stakeholder



Nurture a Globally Competitive Entrepreneurial Ecosystem

- **Strategy 1: Accelerate Commercialization**

- Develop a hub-and-spoke relationship between the tech sector and university
- Attract and nurture investors who are less averse to risk
- Appoint an advisory committee to each target industry
- Encourage local media to run a weekly tech section

- **Strategy 2: Grow Cluster of Mentors and Angels**

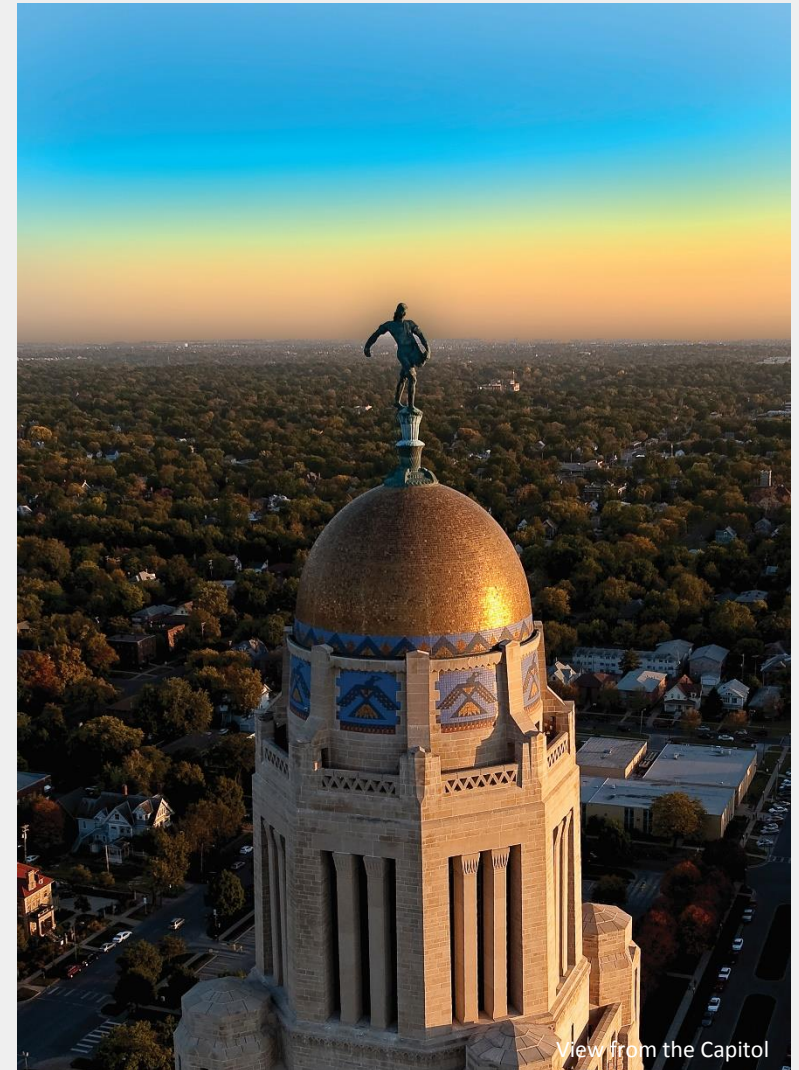
- Promote and support efforts to connect angel investor networks to entrepreneurs in Lincoln
- Align leading startups with top entrepreneurs and investors from around the country to serve as mentors
- Establish a strategic partnership with an accelerator that is international in scope

- **Strategy 3: Own an Entrepreneurial Event**

- Host an annual international entrepreneurial event related to sports tech
- Invest in big data/predictive analytics

- **Strategy 4: Attract International Entrepreneurs**

- Use EB-5 Visa Regional Centers to market Lincoln
- Expand partnership with the Greater Omaha Chamber and the Nebraska Department of Economic Development (NEDED) on international outreach
- Consider partnership with Omaha to develop investment attraction offices in Europe and Asia



Nurture a Globally Competitive Entrepreneurial Ecosystem

Strategy 1: Accelerate Commercialization

Commercialization is the critical test of an entrepreneur's vision. Some ideas find their way to market on the merits of the idea alone, though most depend on robust, synchronized commercialization efforts to see the light of day.

Key Actions:

- **Develop a hub-and-spoke relationship between the tech sector and university.** "Spokes" like the Jeffrey S. Raikes School with its focus on computer science, management, Nebraska Innovation Campus, and NuTech Ventures, set up as the commercial arm of the university, are valuable tools for commercialization. But stronger synchronization with the private sector is essential. The Raikes School should look to graduate more trained professionals, and Innovation Campus's resources must be made accessible to a wider array of talent, while its various departments like the Food Innovation Center should give local industry more input in determining the direction of its undertakings.
- **Attract and nurture investors who are less averse to risk.** Investors in Nebraska have typically taken a cautious approach to investment. Hi-tech tends toward the innovative, with unknown variables that spell risk. Investors must overcome their aversion to see the value of tech-related investments.
- **Appoint an advisory committee to each target industry.** The advisory committee should be made up of public officials, academic heads, and private sector specialists. The committee should be focused on coordinating university, private and government assets capable of advancing said industry and be intimately knowledgeable about the path to commercialization in the industry, including approval processes and application fees to licensing and other legal issues that must be accounted for.
- **Encourage local media to run a weekly tech section.** This section will increase exposure for local talent and their offerings, which could boost the prospect of commercialization.

Tech startups & Entrepreneurship

Lincoln's startup scene figures to be a vital part of the city's economic future. Some two dozen startups, most of them tech-related, are clustered in the Haymarket district, creating an environment conducive to networking and collaboration.

Funding is relatively robust, deriving from in-state and, increasingly, out-of-state sources. UNL is contributing through its technology commercialization arm, NuTech Ventures; Nebraska Innovation Campus, which is focused on forging partnerships between the university and the private sector; and the Jeffrey S. Raikes School of Computer Science and Management.

Nebraska ranks in the lower 20 percent of U.S. states for securing venture capital. But the cost of doing business is low, startup costs are decreasing. And plans are afoot to improve the local ecosystem, with Nebraska Global, a venture capital fund for software companies, NMotion, a startup accelerator, playing key roles. Dundee Venture Capital, Nebraska Angels and Invest Nebraska are doing their part to grow and commercialize technologies.

The state outlook is also relatively strong. Nebraska startups garnered more deals in 2013 than in the previous five years combined. Fifteen to 20 startups are formed every year in eastern Nebraska, a threefold increase from five years ago. Some \$300 million in organized venture capital has been made available through the state, and investors qualify for tax credits. The working environment is congenial and welcoming, lacking the insularity and cut-throat competition that characterizes other centers of tech activity.

Nurture a Globally Competitive Entrepreneurial Ecosystem

Strategy 2: Grow Cluster of Mentors and Angels

Funding for Nebraska's startups has picked up considerably in recent years (as shown in the appendix), though most of it is available at the state level through groups like Nebraska Angels. Supporting angel groups with a Lincoln focus will provide a reliable funding stream for local firms and could incentivize more startups to locate in Lincoln. Mentors exist though not in the numbers that are needed to substantially grow Lincoln's tech scene.

Key Actions:

- **Promote and support efforts to connect angel investor networks to entrepreneurs in Lincoln.** Nebraska Angels is a strong asset for the local entrepreneurial ecosystem. Expanding angel networks and ensuring that they keep a focus on Lincoln can keep the ecosystem competitive.
- **Align leading startups with top entrepreneurs and investors from around the country to serve as mentors.** Interaction can be both face-to-face and virtual. Tech leaders outside Lincoln with Lincoln ties should also be leveraged to serve as mentors, as there may be a stronger pull factor with them. Here again, Lincoln's Young Professional Group can be of great value, using its network base to connect entrepreneurs and startups with investors.
- **Establish a strategic partnership with an accelerator that is international in scope,** such as the International Accelerator in Austin. The accelerator, known as IA and affiliated with AE, provides access to seed funding and mentors for non-US citizens. Linkage to an international-oriented accelerator will help expand Lincoln's tech talent pool and foster relationships that can extend Lincoln tech companies' reach into foreign markets.

Tech startups & Entrepreneurship, cont.

There is a way to go if tech startups are to constitute a key economic driver. Local hi-tech leaders AE spoke with said that the human element is more critical to success at this point than physical infrastructure or funding. (Physical infrastructure is less demanding in a hi-tech environment than more traditional business sectors, while funding often has a way of materializing when an idea is viable.) "If Lincoln is to compete, it will be through talent," is how the head of one local startup put it. Idea people – innovators – are important, but so too are reliable role players, including software developers, engineers, and product managers, who can apply and improve upon those ideas, and sales leaders, who can help sell them. Second-generation business starters, mentors and founders will also be needed to help steer new talent to success. All are in short supply in Lincoln.

Local universities and high schools can do more through their curriculum to spur interest in tech entrepreneurship, though given their lack of real world experience they should align themselves with the private sector in "a hub-and-spoke relationship" by graduating more students with skills in code and other tech-related areas. Talent attraction efforts should be national and even international in scope, making use of visa programs designed to accommodate foreign talent.

Nurture a globally competitive entrepreneurial ecosystem

Strategy 3: Own an Entrepreneurial Event

Eking out specialty areas grows the professional infrastructure and support network for others to succeed in the same area. Being synonymous with a specialty can strengthen a community's brand and attract additional talent to the area.

Key Actions:

- **Host an annual international entrepreneurial event related to sports tech** sponsored by Hudl, Bison, UNL, Lincoln's Young Professionals Group and Cabela's. The success of companies like Hudl, Lockr, and EliteForm provide a building block on which to grow this niche. Provide incentives and networking opportunities for sports-related startups.
- **Invest in big data/predictive analytics.** Big data analytics already figures prominently into finance and insurance, marketing research, agriculture and other leading industries in Lincoln. Its usage will spread further as technology and data merge to become an indispensable tool for information gathering and product design. Lincoln should look to host an annual conference related to big data analytics sponsored by Gallup, Ameritas, Nelnet, among other companies that have successfully leveraged big data analytics.

Tech startups & Entrepreneurship, cont.

Lincoln's vibrancy and quality of life will also be a factor in attracting talent. The Haymarket is positioning the city to do this, but further steps, from diversifying entertainment to improving urban density and living options, will be needed. A local software firm willing to pay high wages told AE that they can't point prospective workers to suitable apartments near its downtown offices, undermining the firm's ability to attract top talent. This touches on a larger challenge – how to keep tech companies downtown once they expand beyond a certain point. Research shows that urban density can make for a more innovative and collaborative environment, and improve a city's pull factor. City officials and private developers should team up to ensure that a variety of housing and office stock is available.

Lincoln's startup scene has found a niche in sports tech, with names like Hudl, Lockr, and EliteForm showing the way. The scene should continue to pursue - though not limit itself to - "natural" fits that capitalize on local interests, culture and economic strengths rather than seek to copy the accomplishments of competing centers of technology.

Funding, while no substitute for good ideas and leadership, must continue to flow, especially at the early stages. Research shows that the number one determinant in a person's decision to become an entrepreneur is access to capital.

Nurture a Globally Competitive Entrepreneurial Ecosystem

Strategy 4: Attract International Entrepreneurs

Visa regulations for foreign-born entrepreneurs may loosen in the fall if the White House has its way. Lincoln should position itself to capitalize on this opportunity through talent scouting, marketing, and networking with foreign universities and industries. These entrepreneurs should not be seen as a threat to local jobs but as a means of expanding the local talent pool and tech sector. Lincoln can still work to attract and retain foreign-born entrepreneurs regardless of the requirement outcome in the fall. Again, establishing a welcoming environment that helps assimilate outsiders will help in terms of attraction and retention.

Key Actions:

- **Use EB-5 Visa Regional Centers to market Lincoln.** Created in 1990, the EB-5 Visa program is designed to attract foreign investors to the US. Regional centers can provide the link to connect them to Lincoln. Successful marketing to these institutions can ensure that Lincoln is a top choice for foreign investors. A minimum of \$1 million must be invested in a new or existing commercial business. Additionally, the enterprise must create or retain at least 10 jobs.
- **Expand partnership with the Greater Omaha Chamber and the Nebraska Department of Economic Development (NEDED) on international outreach.** NEDED's initiative to support international business development and the capacity for local firms to reach out to international clients is important to increasing the global reach of Lincoln. It would be particularly advantageous to partner with the Greater Omaha Chamber in these efforts. Ensuring that this initiative can work in conjunction with the economic development goals of Lincoln and speak to the specific targeted industries of Lincoln can grow the pipeline of international talent and investment coming into Lincoln.

Best Practice: EB-5 Visa Program

Texas Lonestar Enterprises and the Pflugerville Community Development Corporation (PCDC) have taken advantage of the EB-5 program in Pflugerville, TX for the creation of a three-phase commercial business park known as 130 Commerce Center. Each phase of the project includes two 120,000 square feet flex space buildings that will be built on 15 acres of land. The 130 Commerce Center business park is being constructed in a "Targeted Employment Area." There is a total of 90 foreign investors involved with the project, thus \$45 million and 900 jobs are required under EB-5 visa requirements. An economic impact study conducted by AngelouEconomics determined the capital investment will create 1,300-3,600 jobs.

For more information visit: <http://www.uscis.gov>

Best Practice: Techstars

Techstars is a mentorship-driven tech accelerator with a high networking capacity that is global in reach. Techstars primarily targets web-based or other software companies and provides them with access to a rolodex of over 3,000 successful entrepreneurs, investors, and corporate partners. As of June, Techstars has 409 active investments and has acquired 70 companies. This year, Techstars raised \$150 million for Techstars Ventures, allowing the company to diversify into Series A investments. Techstars has also been mindful of aligning its efforts with government policy: its Global Accelerator Network works in conjunction with Barack Obama's Startup America Partnership, effectively connecting 2,500 accelerators around the world.

For more information visit: <http://www.techstars.com/>

Nurture a Globally Competitive Entrepreneurial Ecosystem

- **Consider partnership with Omaha to develop investment attraction offices in Europe and Asia.** NEDED's outreach in Shanghai and Tokyo can also be replicated in other markets (e.g. in Europe and Asia) that are particularly important to trade with Lincoln. The Greater Omaha Chamber can be a key partner in this undertaking. These offices can also inform potential EB-5 visa investors about the benefits of locating in Lincoln, as well as help to strengthen business and trading relationships.

“People know there are jobs in Lincoln. They are skeptical as to whether there are good jobs in Lincoln.”

-Community Stakeholder

Best Practice: AdvantageWest

Chartered in 1994, the AdvantageWest Economic Development Group is a non-profit, public-private partnership that serves the 23-county region of western North Carolina as the regional economic development commission. One of the group's most successful initiatives is its “Certified Entrepreneurial Community (CEC) Program,” an innovative economic development strategy that helps communities become “entrepreneur ready.” The CEC Program provides certified communities with a full range of support from AdvantageWest (training, signage, grant opportunities, and youth engagement) and gives them a marketable asset that can help them promote small business growth. Perhaps equally as important, the process of CEC certification strengthens relationships and builds a collaborative spirit amongst local community and business leaders. For a community to be designated with the CEC certification, it must undertake an intensive process that typically lasts between 18 months and two years, engaging community leaders from the public and private sectors.

AdvantageWest created the “Blue Ridge Entrepreneurial Council” (BREC) in 2002 to support entrepreneurs in the areas of education, mentoring and networking, capital formation and connections to critical resources. BREC holds regular meetings where qualified entrepreneurs can present ideas to a group of local investors known as the Blue Ridge Angel Investors Network (BRAIN).

AdvantageWest is also part of the SBA ScaleUp America community, and receives funding to provide intensive growth strategy development and implementation support to 150 North Carolina small businesses with a high growth potential.

For more information visit:

<http://www.advantagewest.com/entrepreneurship>

Goal Three: Strengthen Collaboration Among Key Economic Assets



Strengthen Collaboration Among Key Economic Assets

Lincoln has a lot of individual parts that lend themselves to developing a cutting-edge economy – incubators, maker spaces, training centers, a Big Ten public research university, to name a few. The public and private sectors have teamed up for pivotal projects like the Haymarket and the Pinnacle Bank Arena. However, silos are aplenty, with coordination across many areas lacking, and tending toward the top-down where it does exist, hindering Lincoln’s capacity to fulfill its economic vision.

Collaboration is growing more vital to business success as products, services and, relatedly, value chains grow more sophisticated. Few companies can go it alone. The world’s leading companies from Apple to GE certainly don’t. Collaboration can improve quality, innovation, efficiencies, and the bottom line. It can positively inform not only factors of production, or inputs, but less glamorous but no less important areas to a business’s success like safety, liability, funding, security, and regulation.



“I really do think Lincoln has the ability to be the Midwest’s low-cost and (slightly more) conservative option to Austin and Madison. Encourage the university to become a part of the community the way Morrill Hall serves the community.”

- Community Stakeholder

Strengthen Collaboration Among Key Economic Assets

- **Strategy 1: Advance Public/Private Partnering**

- Coordinate between the private sector and training facilities like the Career Academy
- Strengthen relationship between UNL and the business community
- Utilize PPPs for large, economically and socially advantageous projects, including fiber internet and road infrastructure

- **Strategy 2: Strengthen Private Sector Cooperation**

- Grow collaboration between large companies and startups
- Support legislation promoting “workforce development zones”
- Establish a food safety buyers market where technologies can be demonstrated and purchased



Strengthen Collaboration Among Key Economic Assets

Strategy 1: Advance Public/Private Partnering

Public-private partnerships, or PPPs, combine the skills and resources of the public and private sector while sharing the responsibilities and risks. The private sector partner tends to bring technology and efficiencies to the endeavor, leaving the public partner to focus on policy, planning and regulation. Lincoln, being home to a major public university and the state capital and a dynamic mix of small and large businesses, and with an impressive track record of successful PPPs with clear social and economic benefits, including the Haymarket and the Pinnacle Bank Arena, is well suited to endeavor into future PPPs.

Key Actions:

- **Coordinate between the private sector and training facilities like the Career Academy.** Aligning skills training with the demands of the private sector will enhance talent retention efforts.
- **Strengthen relationship between UNL and the business community.** UNL's approach toward private sector engagement has tended toward the top-down. Greater engagement through various levels of the university, drawing on deans, professors, lecturers, and researchers, will help align skills training with industry needs and foster an environment conducive to commercial collaboration.
- **Utilize PPPs for large, economically and socially advantageous projects, including fiber internet and road infrastructure.**

“The [Lincoln Public School] system should promote more STEM and fab lab type educational approaches, as there is almost no knowledge of next generation manufacturing techniques in Lincoln, despite having a very good geographical location for this ”

-Community Stakeholder

Nebraska Innovation Campus

Nebraska Innovation Campus is a critical part of Lincoln's quest to become an international destination city. The 2.2 million square foot campus is adjacent to UNL and offers access to cutting-edge facilities, highly specialized talent and first-rate research faculty. The long-term aim is to link these resources with Lincoln's private sector, which should lead to greater innovation incentivized by commercialization. The Food Innovation Center will focus on research related to food. The campus includes a state-of-the-art greenhouse and wet lab space. Critically, it houses NuTech Ventures, which focuses on commercializing work by NIC tenants and providing them with startup expertise. University of Nebraska-Lincoln Industry Relations is another essential partner on the campus, geared toward solidifying private-public partnerships between the university and industry. Innovation Studio, a maker space, addresses the hardware side of the equation. These are crucial building blocks to securing Lincoln's economic future, and the university, government and industry leaders should work to make sure the pathways optimally connect with one another.

Strengthen Collaboration Among Key Economic Assets

Strategy 2: Strengthen Private Sector Cooperation

Private partnerships between businesses will help solidify business clustering and help the target industries to grow.

Key Actions:

- **Grow collaboration between large companies and startups.** Lincoln has a healthy mix of established companies with strong networks; and nimble startups with fresh ideas that leverage cutting edge technology.
- **Support legislation promoting “workforce development zones.”** LB608, a bill sponsored by Sen. Heath Mello, of Omaha, looks to establish workforce development zones in the state. These zones would provide tax advantages for companies that partner with colleges to launch startups.
- **Establish a food safety buyers market where technologies can be demonstrated and purchased.** This merchandizing center will include a showroom whereby the latest in food-related technologies can be displayed and marketed to prospective buyers. It should team private companies with the university and be stationed at Nebraska Innovation Campus.

Best Practice: The Global Center for Health Innovation

The Global Center for Health Innovation, located in Cleveland’s growing Health Tech Corridor, puts the future of health innovations on display. Through state-of-the-art spaces, programs and virtual offerings, the Center promotes health and healthcare innovation, technology, education and commerce.

Modeled after the Merchandise Mart concept in Chicago, the Global Center is part of a \$465 million joint venture by Cuyahoga County and private partners to construct a permanent showroom of medical, surgical and hospital goods along with a new convention center in downtown Cleveland, Ohio.

Global Center spaces highlight the latest innovations of individual companies as well as collaboratively executed multi-organizational spaces including the latest research, product development, branding, sales and service results for companies. The center is designed to lure doctors and hospital administrators to see new medical technology and take continuing-education classes. The center features single-vendor showrooms, with an emphasis on displaying and demonstrating technology-based products along with multi-vendor areas, chosen with relevance to contemporary healthcare delivery such as information technology, state-of-the-art views of the future, and educational spaces.

Construction of the project was largely funded by a 0.25 percent sales tax increase. It is the goal of the project to capitalize on Cleveland’s reputation as a world class medical corridor by bringing medical shows and conventions to the city.

For additional information visit: <http://www.theglobalcenter.com/>

Public Policy Considerations



Haymarket Park

Public Policy Considerations

Working alongside the goals and strategies for Lincoln are public policies that create a healthy business environment and incentivize investments in business operations, training, and research. There are currently a number of public policies at the state and local levels that have contributed to Lincoln's healthy business climate. Lincoln and the state of Nebraska should be commended for the successes that they have had with using these incentives for economic growth. A few of those policies are described below. In a number of areas, however, there are new state and local policies that should be considered to complement the recommendations in the previous section.

Current Local Policies

- **TIF** – Tax increment financing (TIF) is used locally to fund public improvements associated with key economic development projects. Sites must be in blighted or substandard areas. TIF incentivizes private development by lowering the overall cost of the project and funding public improvements through an increased tax base.

Proposed Local Policies

- **Façade improvement grants** – The design of building fronts in downtown, the Haymarket, and other retail and commercial districts give those spots of the city a sense of place that draw residents to them. Giving business owners the means to improve or maintain their building façade is an important investment that can increase the attraction of those areas.
- **Public Wi-Fi** – Wireless internet connection throughout the downtown area, or in a number of public spaces, can make Lincoln's core more vibrant by giving residents another reason to linger along retail and entertainment spots.
- **Local option funding for workforce development and talent attraction programs** – This method of local funding, known in Nebraska as the Local Option Municipal Economic Development Act or LB 840, dedicates a portion of local sales or property taxes to specific economic development programs. The following two initiatives could be funded using this resource:

The Haymarket & Smart Growth

The Haymarket District has effectively put Lincoln on the map, while giving locals something to crow about. It is a testament to what Lincoln can achieve when visionary leaders and the community work toward a common goal. But the district's continued success cannot be taken for granted. With growth comes potential challenges, from rent increases and supply shortages to overbuilding and sprawl.

The Haymarket's demographics lean young. This is natural given its proximity to the university and the predominance of bars and restaurants in the district. The Haymarket will move further in this direction with additional student housing units going in downtown in the coming years. Young people bring vibrancy and creativity to an area, seen in the Haymarket's burgeoning startup scene.

But greater diversity – both in terms of demographics and retailing – will bode better for the district's long-term prosperity. Austin, Texas' (in)famous Sixth Street provides a sense of what can happen to an area when entertainment options are too singular and cater overwhelmingly to a young demographic. Lined with bars, Austin's East Sixth Street was the heart and soul of the city's live music scene from the late 1980s to the early 1990s. Like Lincoln, Austin's downtown is home to a state university in the University of Texas, and Sixth Street's nightlife benefited from the proximity. But over time the stretch between Red River Street and Congress Avenue has become synonymous with drinking and partying and not much else, earning the tagline "Dirty Sixth" in the process. Fifty-seven percent of respondents in a poll by the Austin Business Journal said Sixth Street's "dirty" reputation is a problem for Austin, and centers of commercial activity have moved elsewhere in the city.

Public Policy Considerations

- **State income tax waiver and down payment assistance for new residents** – New residents from outside the state or those returning to Lincoln can be drawn by a waiver (over 3 to 5 years) of state income taxes. A down payment assistance program could also be useful to attracting entry-level workers.
- **Training and education investment fund for underskilled workers** – This kind of program can be used to attract underskilled workers from in or outside Lincoln. The fund could be developed for individual economic development projects or targeted for industry-specific needs.
- **Public art spaces** – Art in public spaces can do a lot to increase the image of Lincoln’s core districts. Public/private collaboration on this issue should be used to garner community support.
- **Adopt master planning that strengthens connectivity between districts and neighborhoods** – There are a number of key areas for future development around Lincoln, like Antelope Parkway, the south of downtown area, the South Haymarket and the Telegraph District. Greater connectivity between them will bring stronger unity and vibrancy to the city and improve economic activity and real estate value.

“Look into another area downtown to build out as a mixed use area, where the empty nester or 40-plus [with] no kids can move to.”

- Community Stakeholder

The Haymarket & Smart Growth, cont.

Diversifying its retail base will help the Haymarket avoid this fate by broadening the district’s demographic appeal and boosting its popularity on non-game days. The right mix of retail, including food markets, salons, dry cleaners and other basic services will attract more people to live and work in the district. “Front door” parking will grow the district’s live-work appeal.

As capacity grows in the Haymarket, there will be a temptation to attract box stores, with their brand offering mass appeal. Whatever economic gains box stores may bring will be offset by the unremarkable identity they will give the district, making it less attractive and marketable. It may turn out that a couple chain stores are well-suited for the district, but number and type should be carefully considered so as to prevent chains from defining the Haymarket.

Lincoln’s metropolitan area has grown nearly 13 percent over the last decade, and pent-up demand for housing, office and entertainment options has aided the Haymarket’s early success; demand over the longer term will likely taper. Any growth strategy must take this slowdown into account.

A shortage of office space threatens to push rent prices up and tech startups, with their tight budgets, outside the Haymarket. The presence of tech startups has brought energy and creativity to the district and should be seen as an essential part of the district’s future. Affordable office space will contribute to the success of retail in the area, as will reasonably priced residential units. Prohibitively expensive real estate will inhibit the district’s overall development, and could diffuse growth around the city. This would undercut the Haymarket’s vibrancy and in turn work against Lincoln’s ability to attract businesses and talent.

Public Policy Considerations

Current Statewide Policies

- **Internship programs** – InternNE allows college students to connect with employers all across Nebraska. The program includes an online portal where students can find programs that fit their career needs.
- **Enterprise fund for startups and entrepreneurs** – Nebraska has a variety of funds designed to encourage investment in startups, such as the Nebraska Angel Investment Tax Credit and the Business Innovation Act, which allows for funding of research and development.
- **Nebraska Advantage** – This package of investment incentives offers a variety of corporate income and sales tax refunds based on the number of new jobs and amount invested in the project.

Proposed Statewide Policies

- **CAPCO** – A Certified Capital Company, or CAPCO, works as a government-sponsored venture capital investment company used to quickly raise large pools of capital from finance and insurance companies. Contributing companies are offered tax credits based on their investments to CAPCO funds. Texas' use of this program is described in the appendix.
- **IP exempt from income taxes (for new companies)** – New companies may be incentivized to move to Lincoln if revenue from the intellectual property they develop is exempt from income taxes.
- **In-state tuition for family of economic development project incentive recipients** – This program can incentivize newer residents to stay in Lincoln and hopefully create stronger roots locally.

The Haymarket & Smart Growth, cont.

Lincoln will need to grow “smart” beyond the Haymarket if it is to truly become a destination city. Fallbrook and the Exchange at Antelope Valley are master planned residential areas that are sure to boost the city’s appeal. The Southside Beltway should open up growth prospects to the east and south upon completion. The O Street corridor especially to the west holds great potential for revitalization, as does East Park Plaza, which is ripe for home, office and retail development. Neighborhoods such as University Place and Havelock could become quaint destination neighborhoods with the right mix of incentives and planning. Improving Lincoln’s transportation network will unify these nodes as a collective whole.

A key challenge will be to nurture these areas while boosting population density downtown. Diffusing growth will undermine Lincoln’s vitality and attractiveness and will be more expensive to manage in the long term. Denser cities have also been shown to be better for job creation.

Appendix

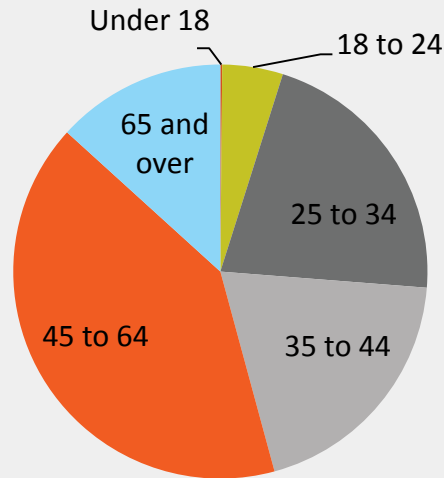


Appendix

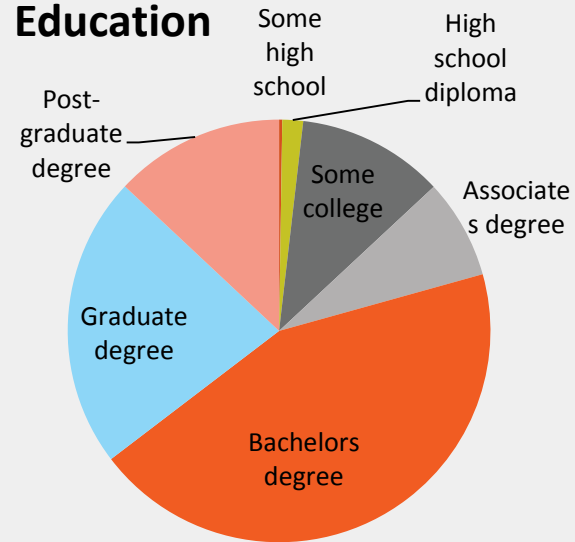
- A. Additional Stakeholder Engagement & Market Assessment Information
- B. Target Industry Trends & Occupations
- C. Cost of Operations Analysis
- D. Best Practices

Appendix A: Resident Respondent Demographics

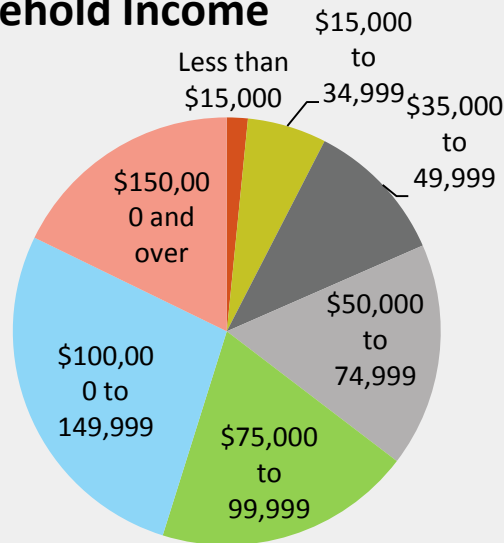
Age



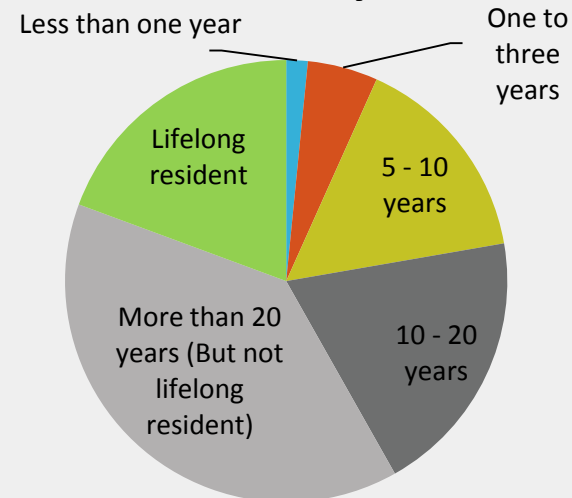
Education



Household Income

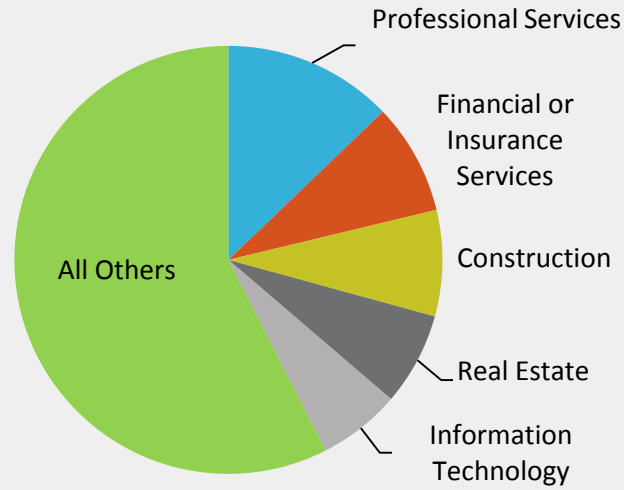


Time in Community

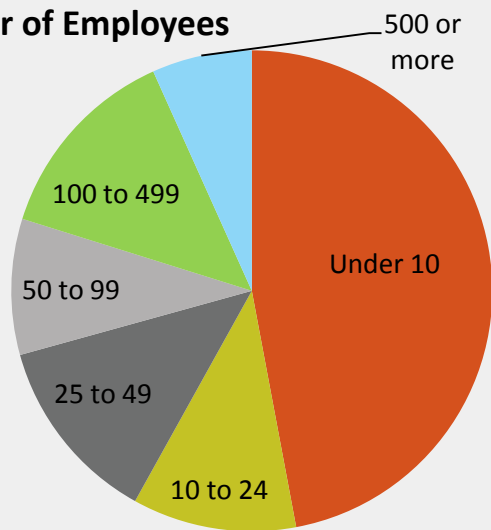


Appendix A: Business Respondent Demographics

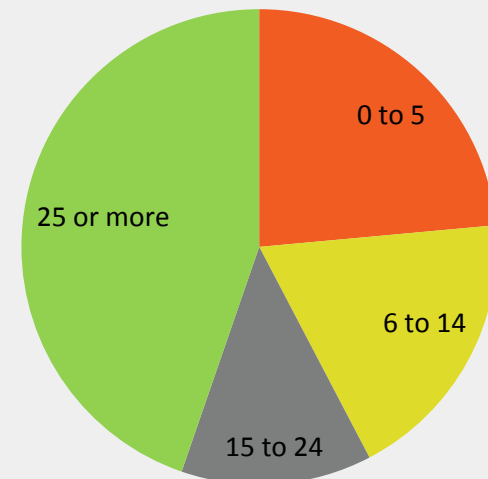
Respondents by Industry



Number of Employees



Longevity in Lincoln



Appendix A: Business Respondent Factor Comparison

Business Respondent Factor Comparison			
	Importance	Rating	Difference
Ability to attract and retain skilled employees	4.25	3.38	0.87
Quality of life	4.21	4.19	0.02
Access to customers	4.11	3.63	0.48
Tax climate	3.89	2.80	1.09
Operating costs	3.88	3.35	0.53
Entrepreneurial environment	3.84	3.63	0.21
Quality of public schools	3.82	4.05	-0.23
Utilities and infrastructure	3.76	3.25	0.51
Cost of living	3.75	3.71	0.04
Labor costs	3.70	3.34	0.36

Appendix A: SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> •Diversified economic base •School system; graduation rates •Parks and trails network •Low cost of living •Haymarket (as source of economic growth and a marketable asset) •Burgeoning startup community •Private-public sector cooperation 	<ul style="list-style-type: none"> •Highway infrastructure (south to north, east to west) •Skilled workforce retention and attraction •Assimilation of newcomers •Lack of dense urbanization •Shortage of commercial and residential space in Haymarket •Entertainment options around the city •Shortage of second-generation business starters, mentors and founders
Opportunities	Threats
<ul style="list-style-type: none"> •Nebraska Innovation Campus •Growing demographic diversity •Community momentum and optimism •Rural Nebraskans still see Lincoln as the “big city” •Increasing sales and property tax revenues 	<ul style="list-style-type: none"> •Incomes/wages not keeping up with inflation •Rising cost of living •Increases in poverty •Ageing workforce in some sectors of the economy •Negative news coverage of Nebraska can adversely affect Lincoln’s talent attraction efforts

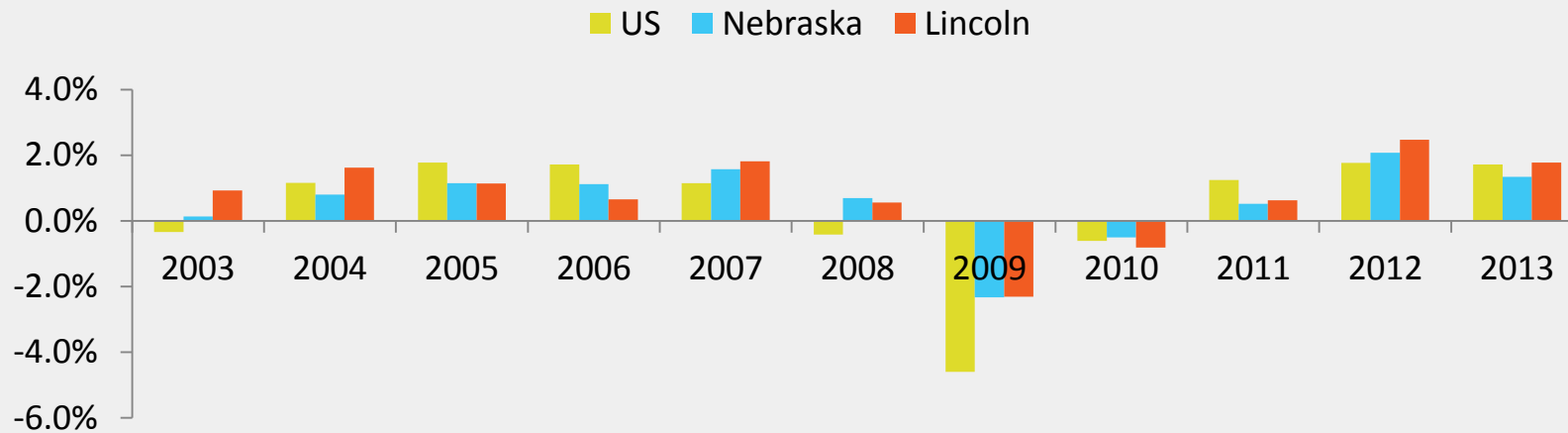
Appendix A: Employment by Sector

Lincoln's Top Sectors by Employment		
Sector	Employment (2013)	Location Quotient
healthcare and social assistance	21,940	1.1
Retail trade	18,433	1.07
Accommodation and food services	13,526	0.98
Manufacturing	12,447	0.91
Finance and insurance	10,321	1.61
Transportation and warehousing	8,695	1.8
Professional and technical services	8,524	0.92

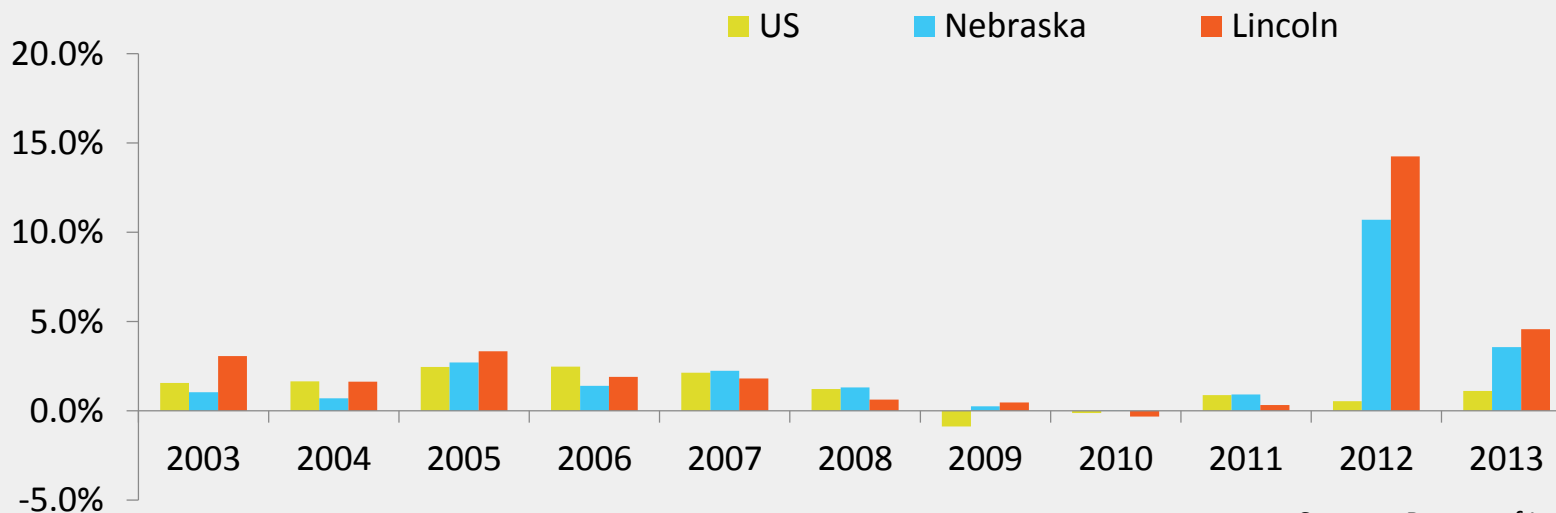
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix A: Employment and Establishment Trends

Year to Year Change in Total Employment



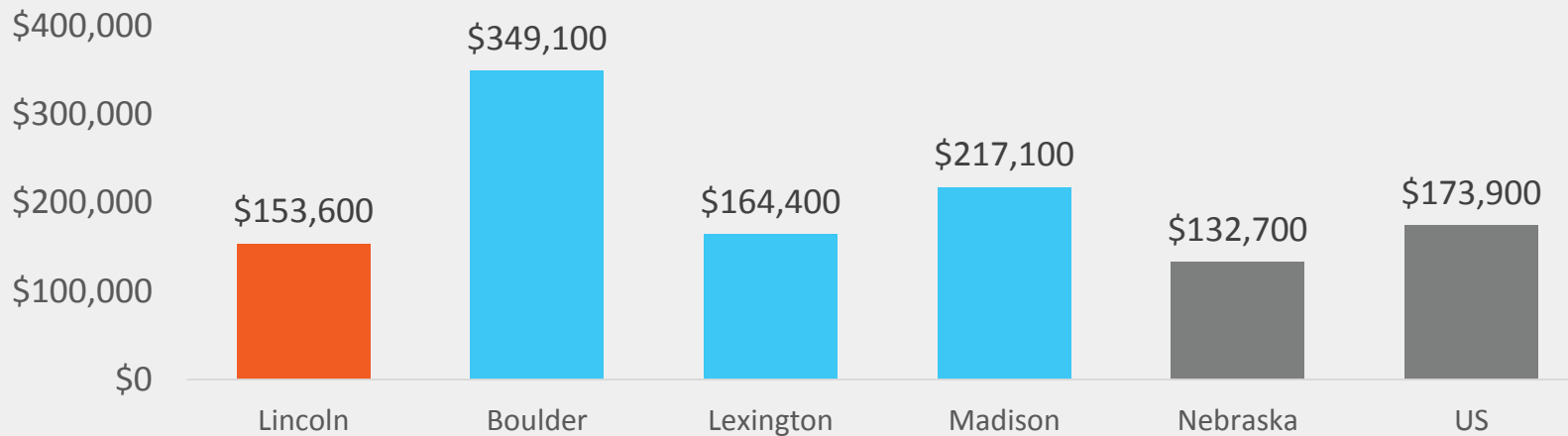
Year to Year Change in Total Business Establishments



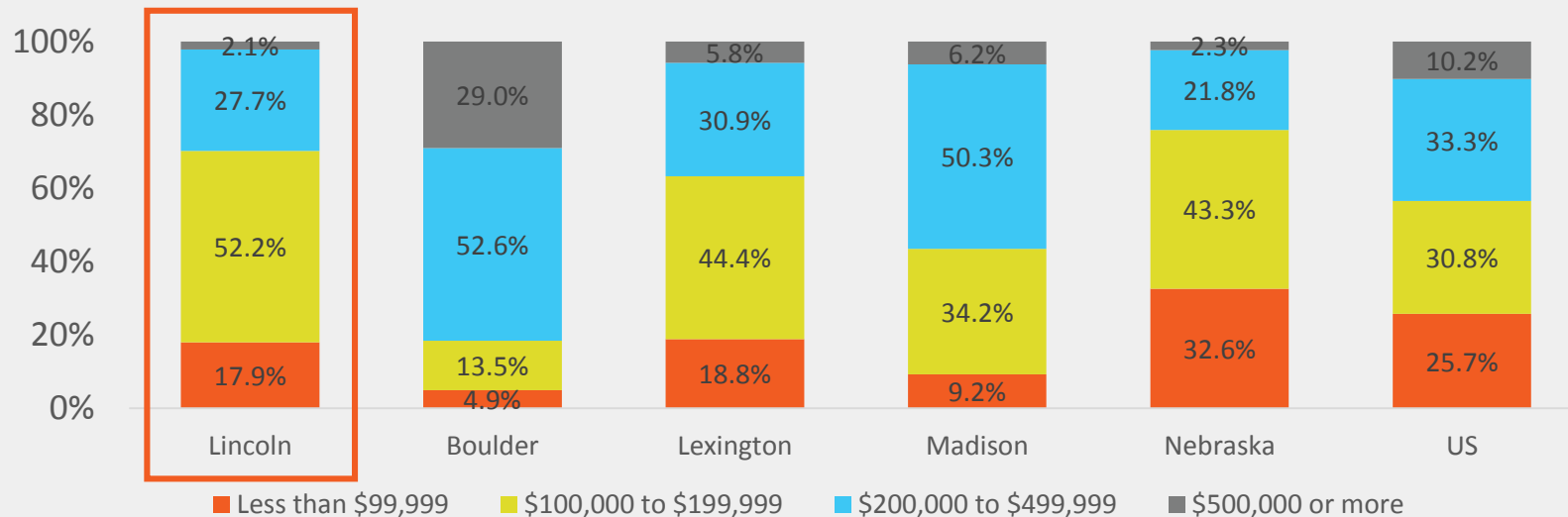
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix A: Housing Values

Median Value of Houses (2013)



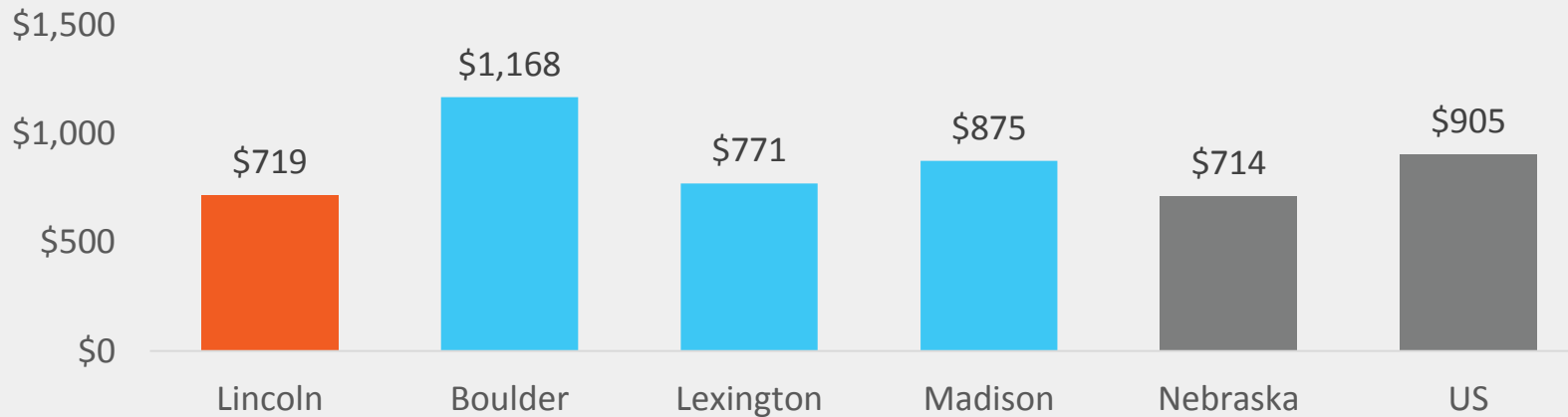
Housing Value Breakdown (2013)



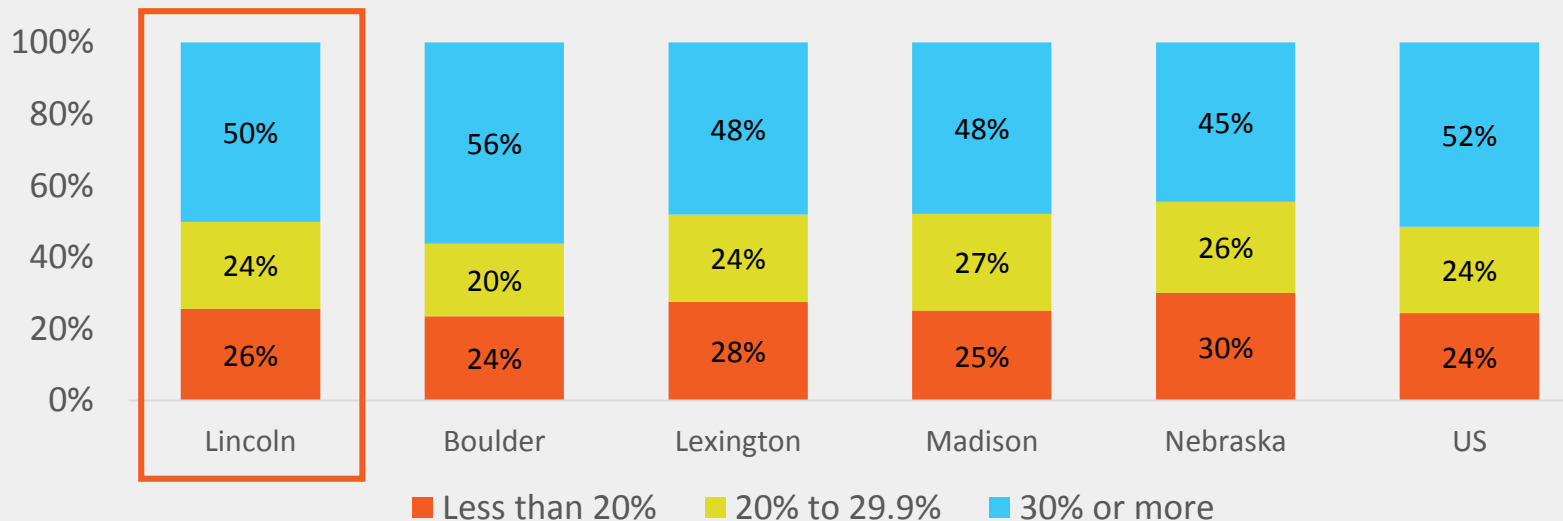
Sources: US Census Bureau, AngelouEconomics

Appendix A: Rental Prices

Median Rent (2013)



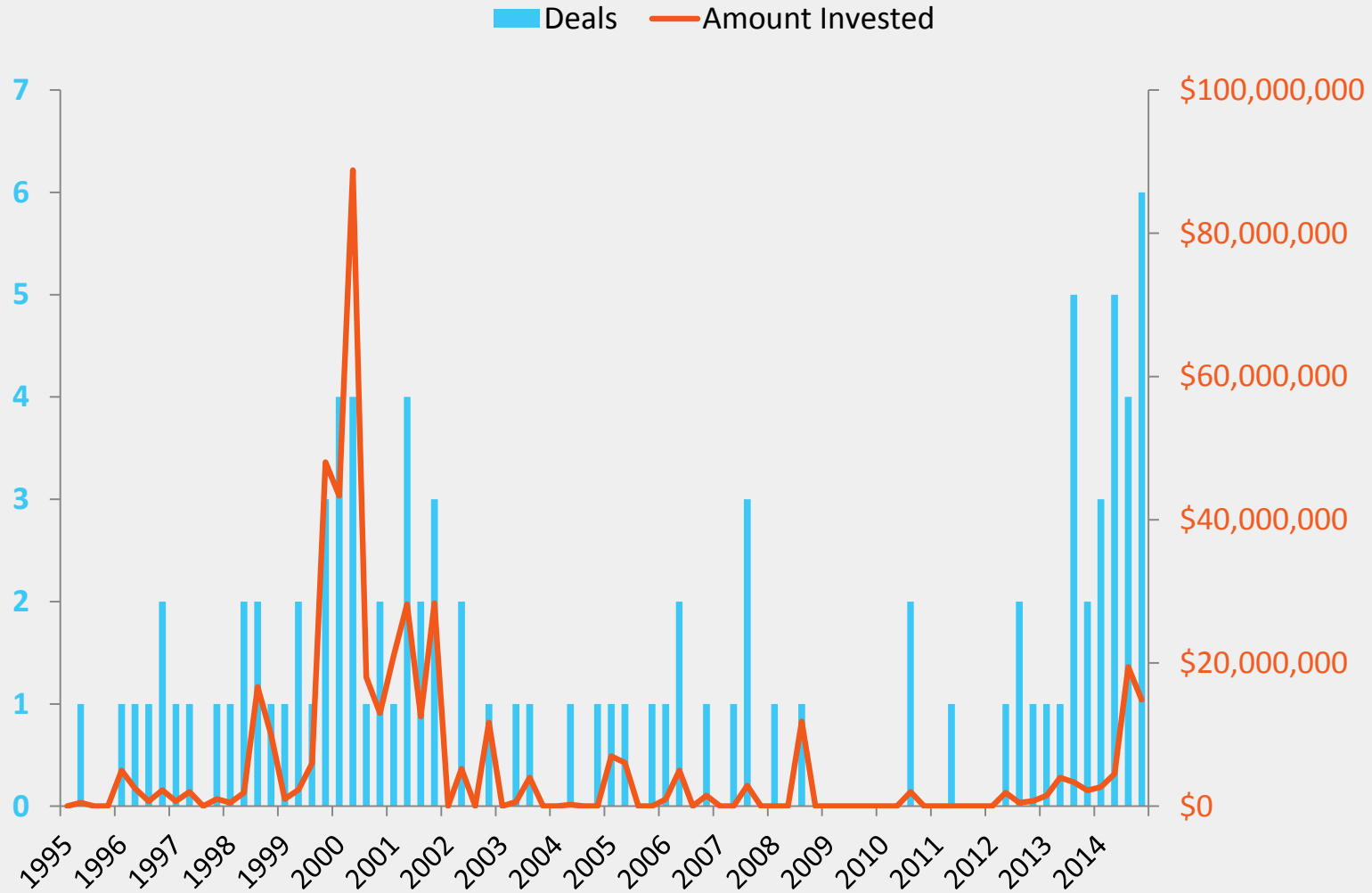
Rent as a Percentage of Household Income (2013)



Sources: US Census Bureau, AngelouEconomics

Appendix A: Venture Capital

Nebraska Venture Capital Funding (1995-2014)



Sources: PWC Moneytree, AngelouEconomics

Appendix A: Migration

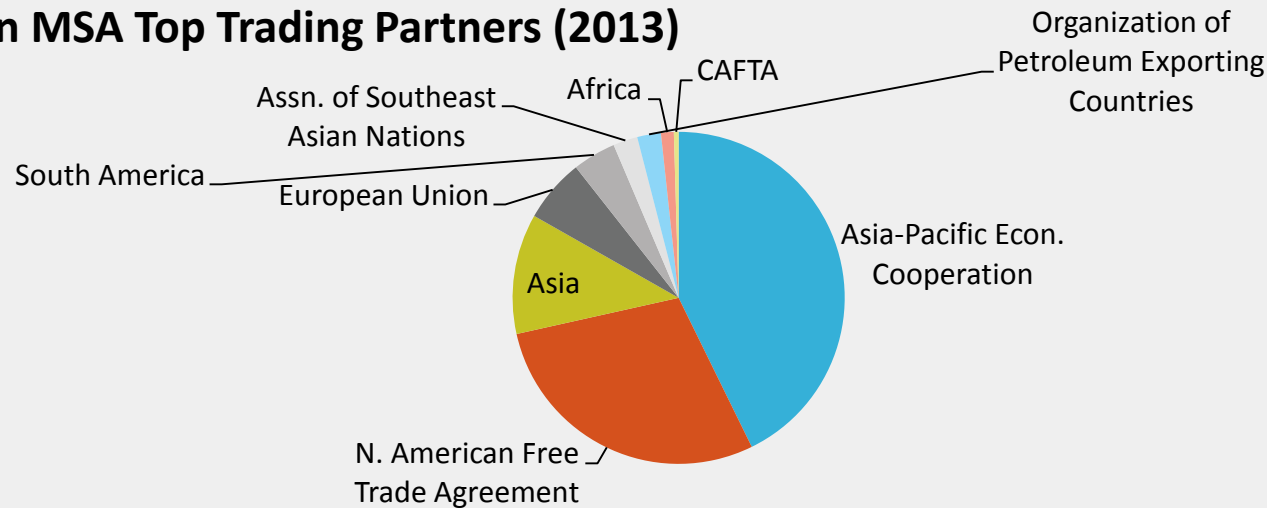
Net Migration to and from Lancaster County (2012)

County	State	Net Incoming
Cass County	Nebraska	331
Madison County	Nebraska	322
Scotts Bluff County	Nebraska	311
Douglas County	Nebraska	278
York County	Nebraska	251
Gage County	Nebraska	225
Minnehaha County (Sioux Falls)	South Dakota	225
County	State	Net Outgoing
Otero County (Alamogordo)	New Mexico	-161
Vigo County (Terre Haute)	Indiana	-147
Marin County (SF)	California	-134
Broward County (Miami)	Florida	-126
Stark County (Canton)	Ohio	-121
Arapahoe County (Aurora)	Colorado	-113
Pinal County	Arizona	-110

Sources: US Census Bureau, AngelouEconomics

Appendix A: International Trade

Lincoln MSA Top Trading Partners (2013)



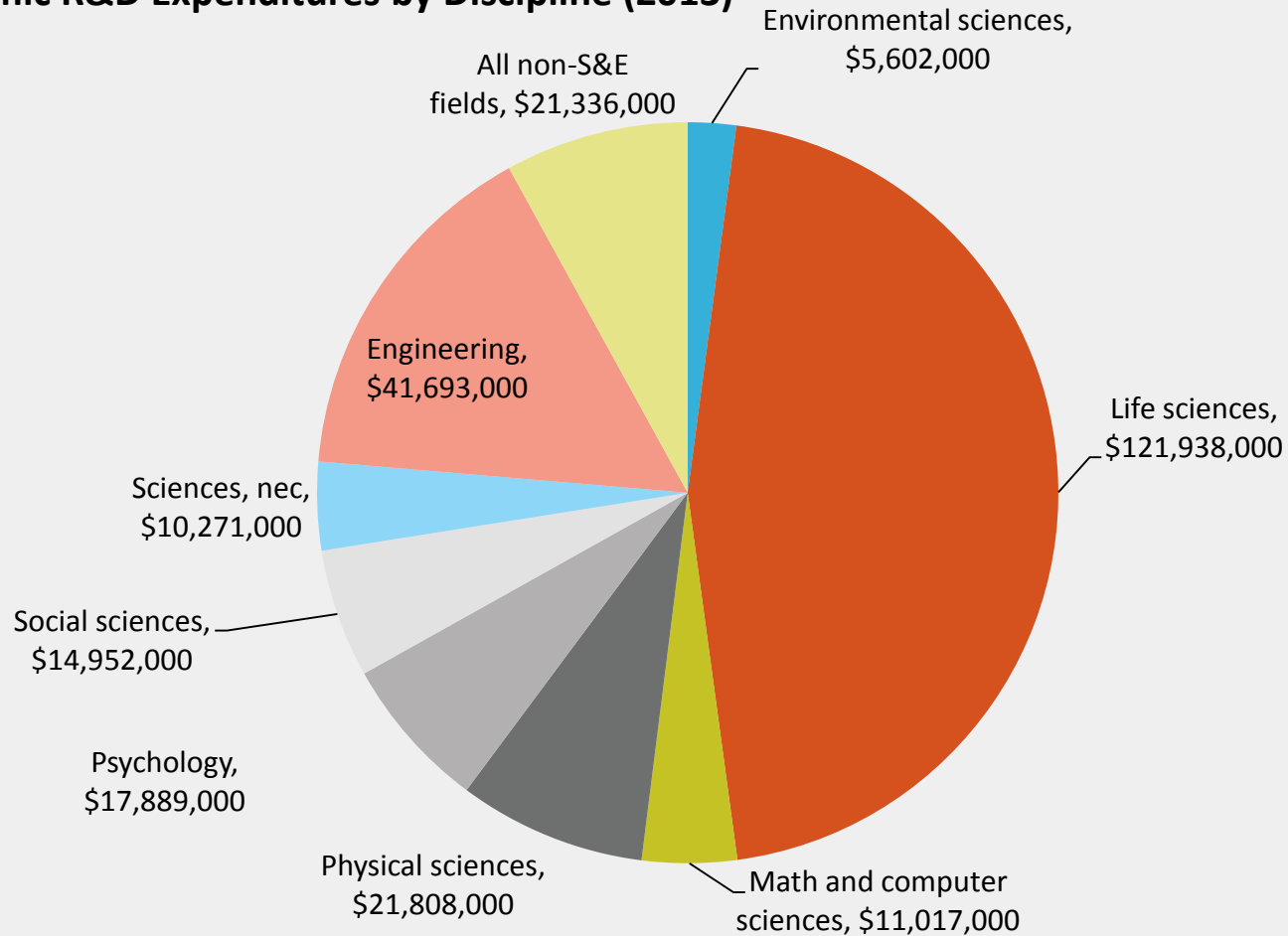
Metro Area Trade Comparison

Metro Area	2013 Exports	Exports per capita
Boulder	\$1,045,962,791	\$3,372
Lexington	\$2,294,002,557	\$4,687
Lincoln	\$818,427,565	\$2,582
Madison	\$2,292,109,492	\$3,653

Source: US Dept. of Trade

Appendix A: Academic R&D Expenditures

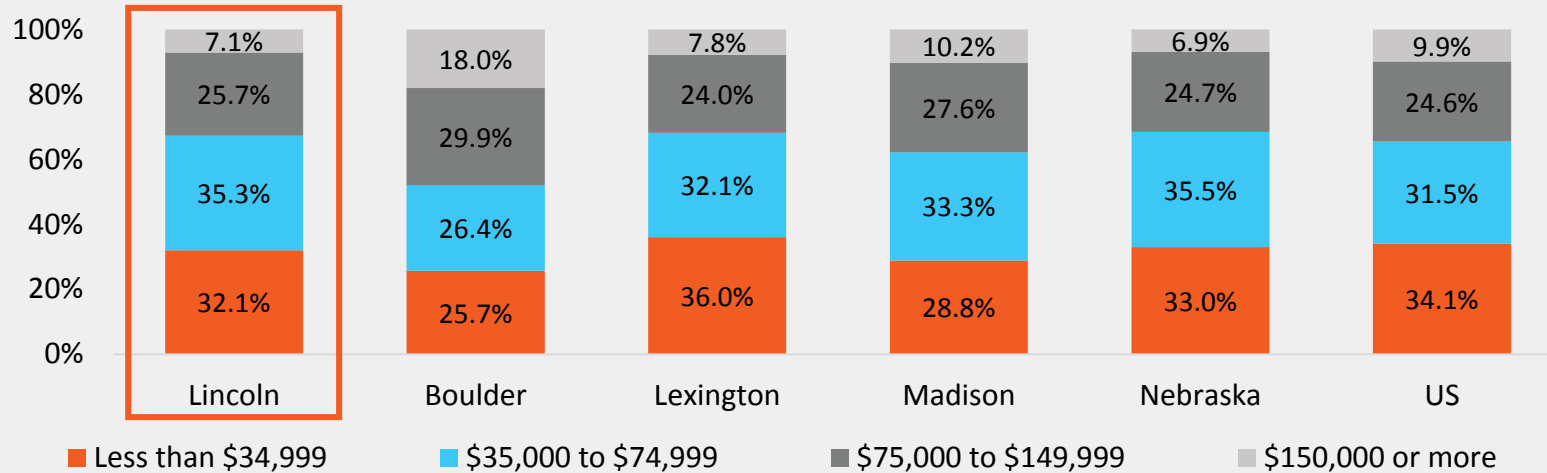
Academic R&D Expenditures by Discipline (2013)



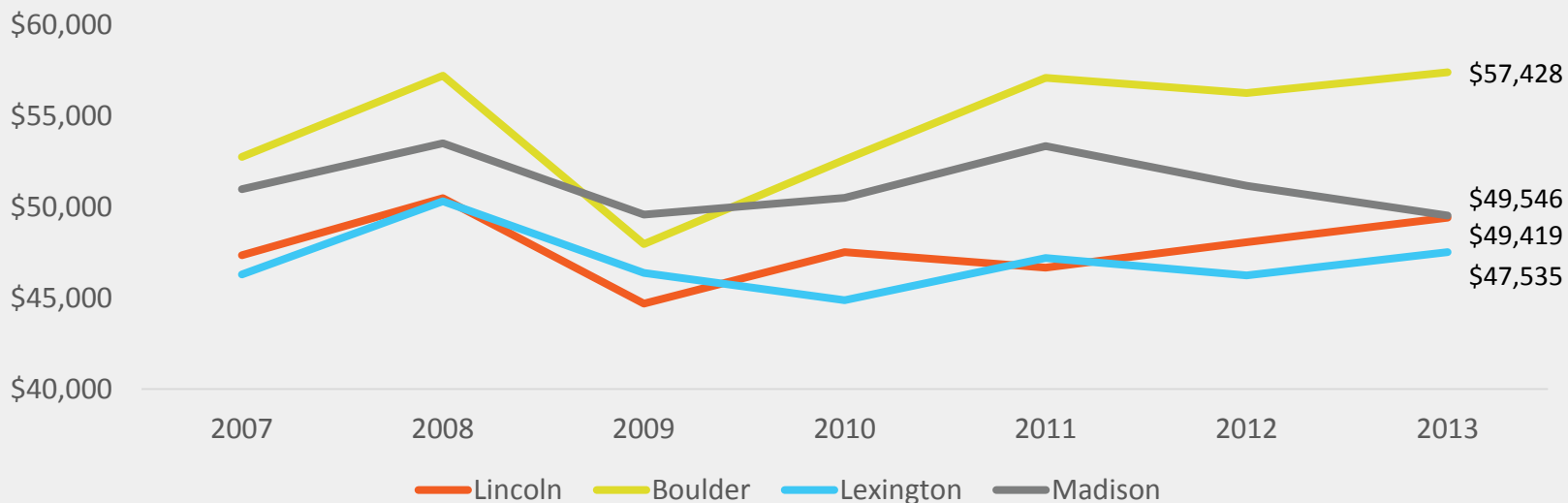
Sources: NSF, AngelouEconomics

Appendix A: Household Income

Household Income Breakdown (2013)



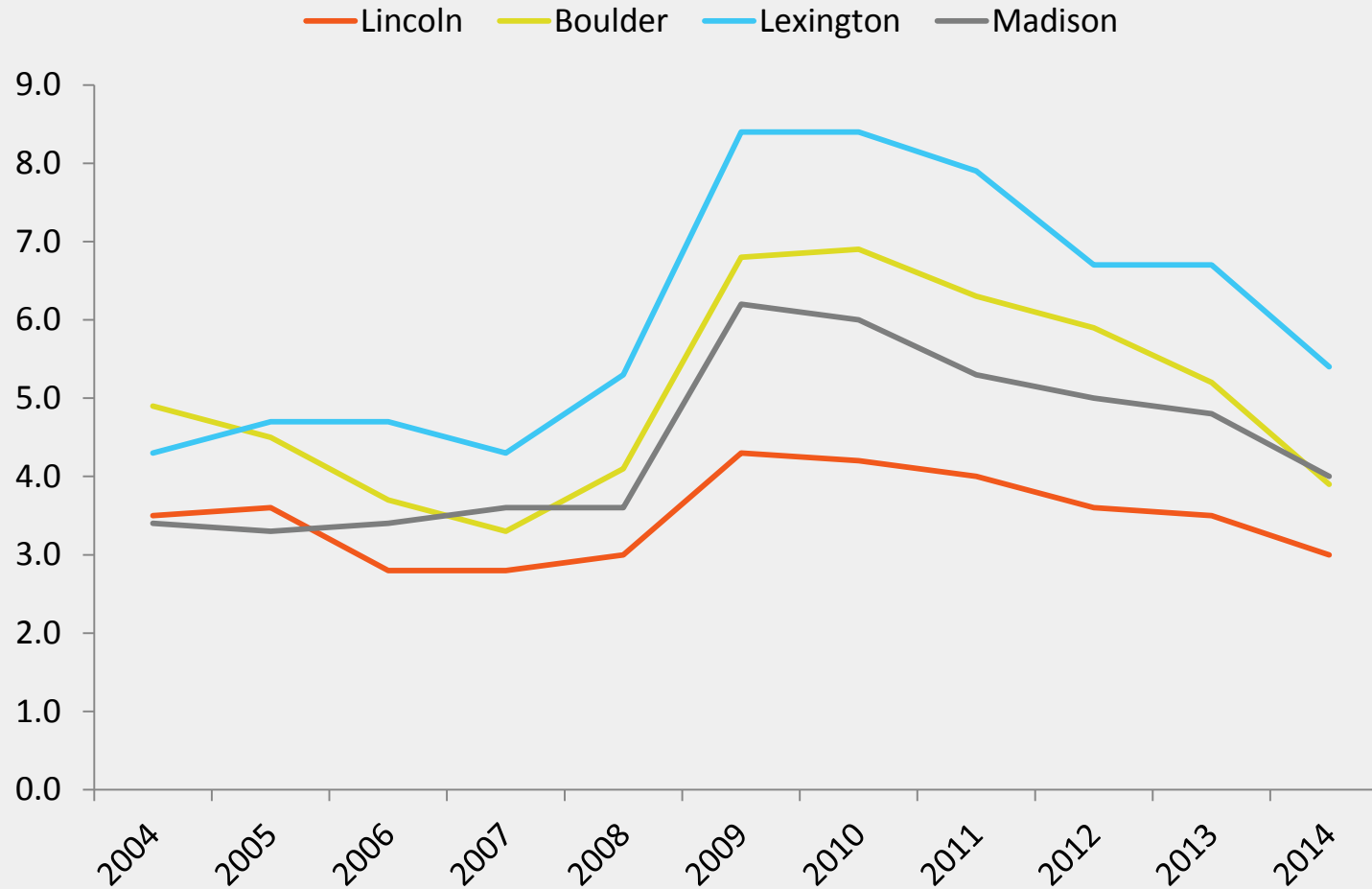
Median Household Income (2007-2013)



Sources: US Census Bureau, AngelouEconomics

Appendix A: Unemployment

Average Annual Unemployment Rates (2004-2014)



Sources: Bureau of Labor Statistics, AngelouEconomics

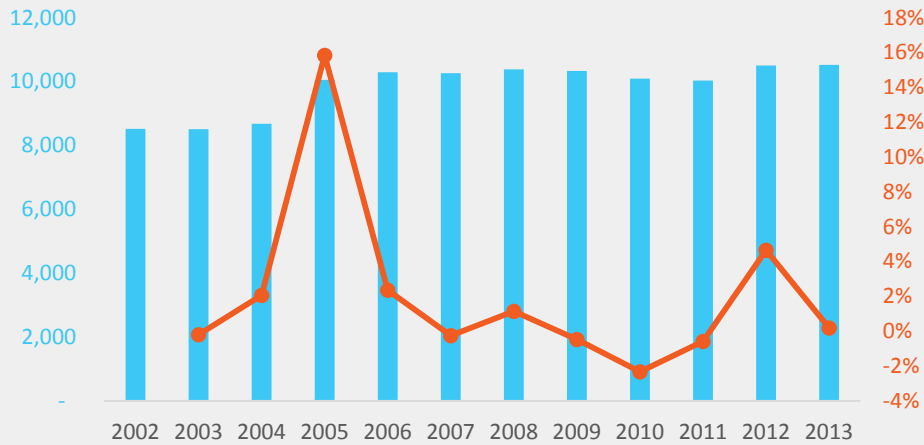
Appendix A: Density Comparisons

Density Comparison (2013)	
	Population Density
Lincoln	2,900
Downtown Lincoln (68508)	3,570
Boulder	3,950
Lexington	1,040
Madison	3,040

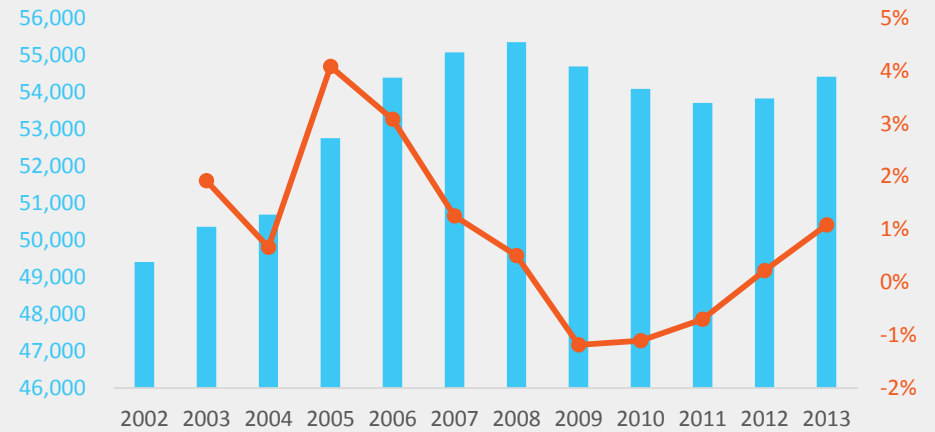
Sources: US Census Bureau, AngelouEconomics

Appendix B: Industry Trends

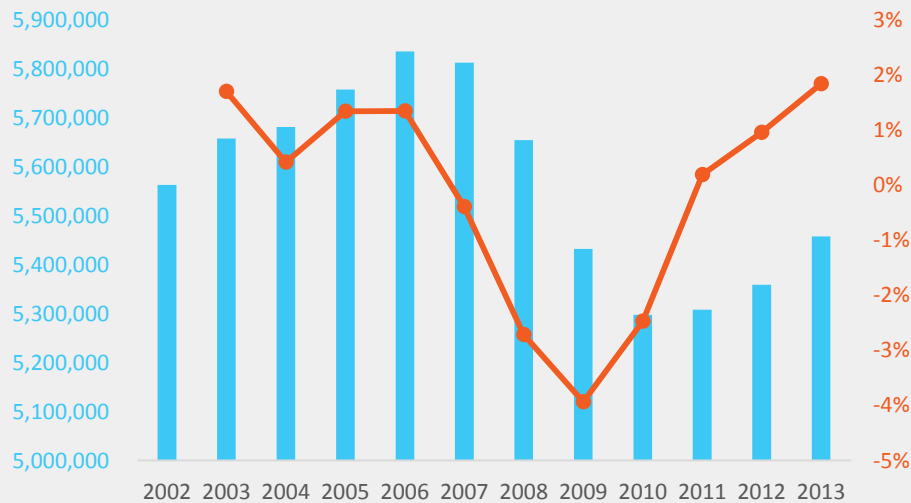
Lincoln Finance and Insurance Employment



Nebraska Finance and Insurance Employment



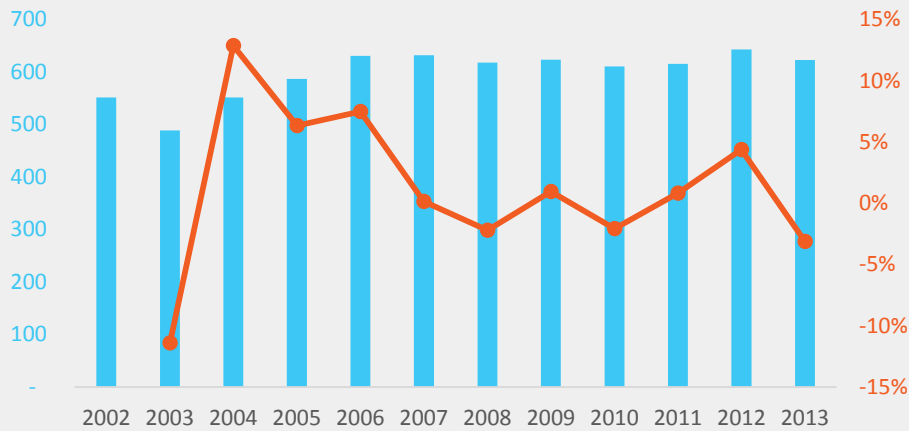
US Finance and Insurance Employment



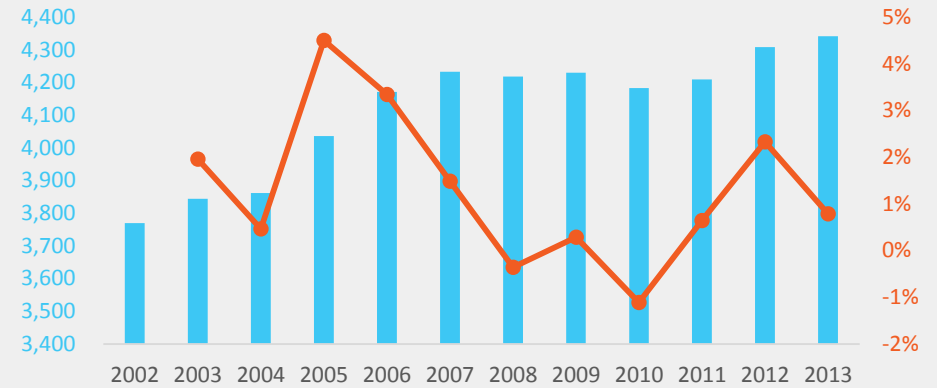
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

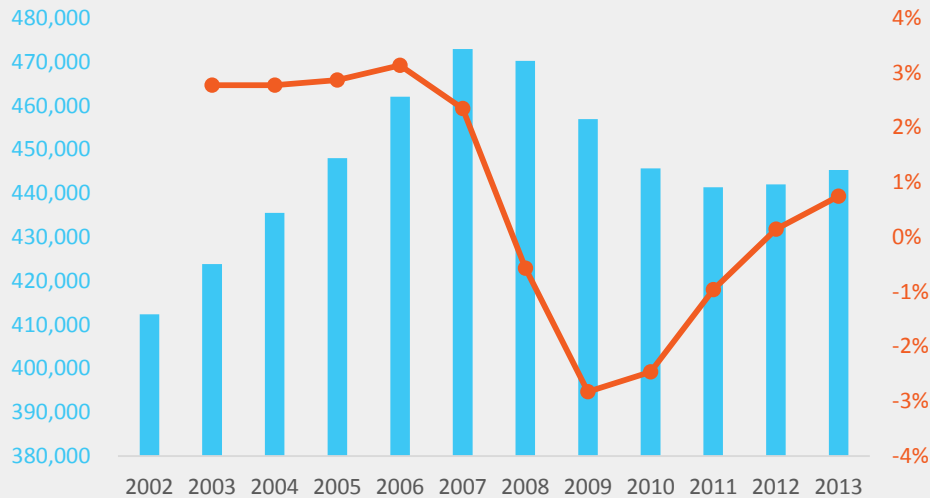
Lincoln Finance and Insurance Establishments



Nebraska Finance and Insurance Establishments



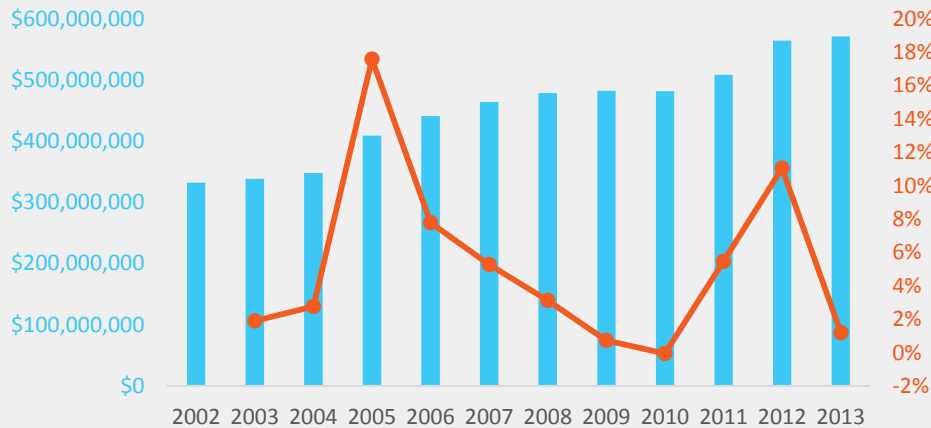
US Finance and Insurance Establishments



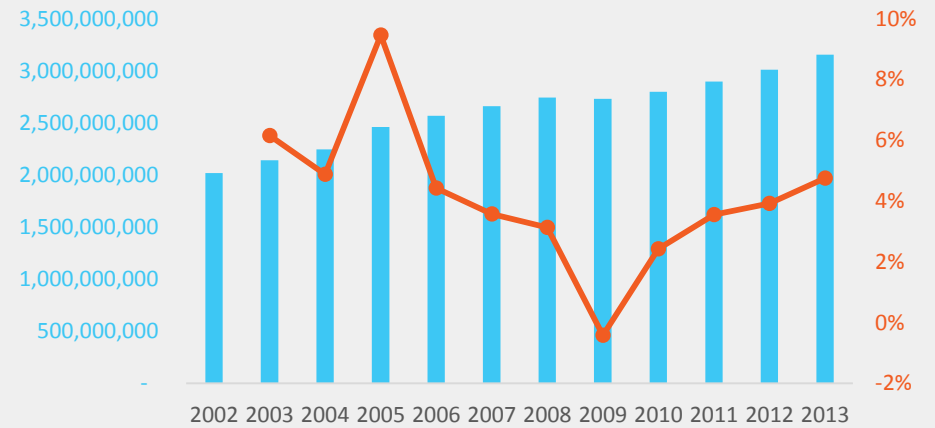
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

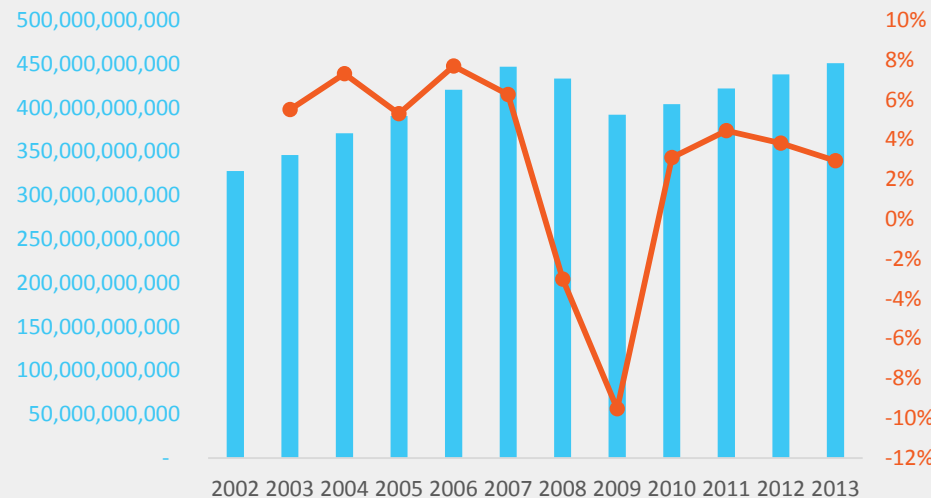
Lincoln Finance and Insurance Total Wages



Nebraska Finance and Insurance Total Wages



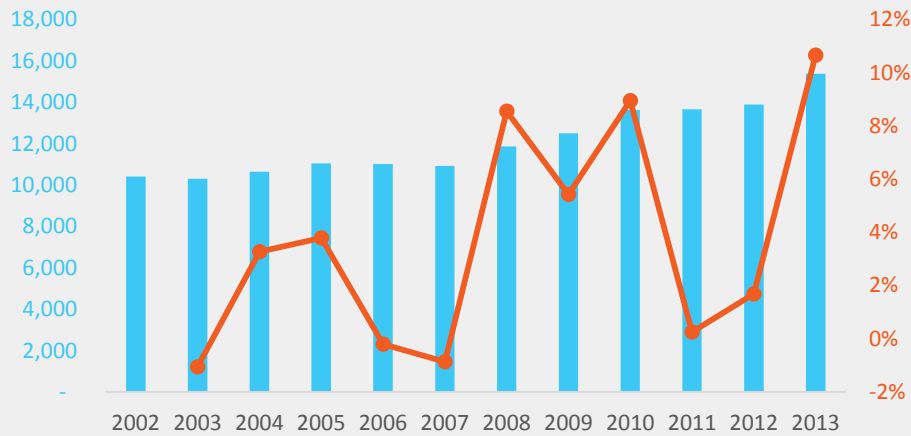
US Finance and Insurance Total Wages



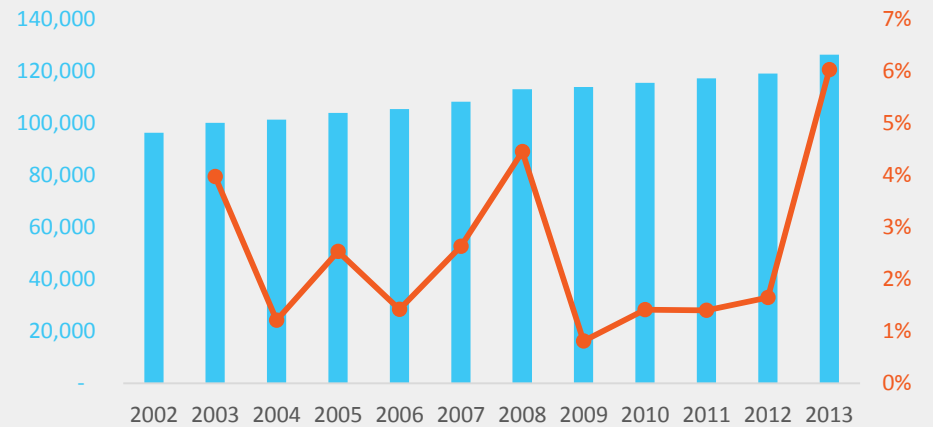
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

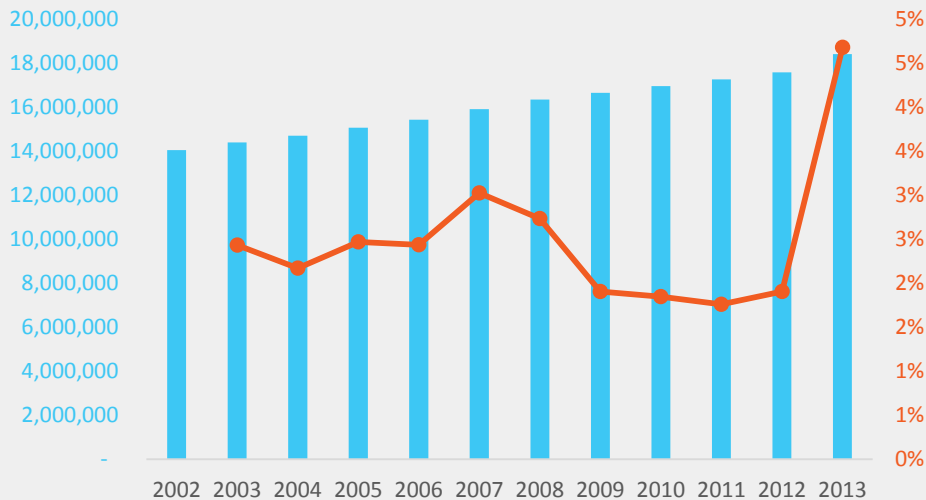
Lincoln Life Sciences Employment



Nebraska Life Sciences Employment



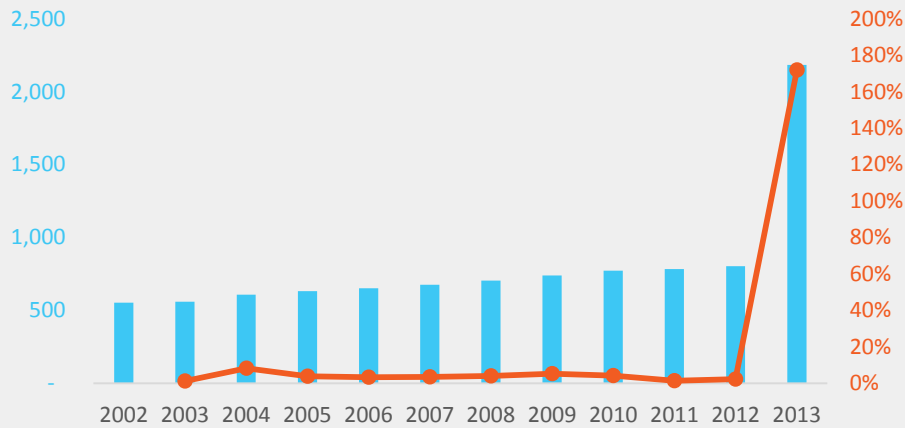
US Life Sciences Employment



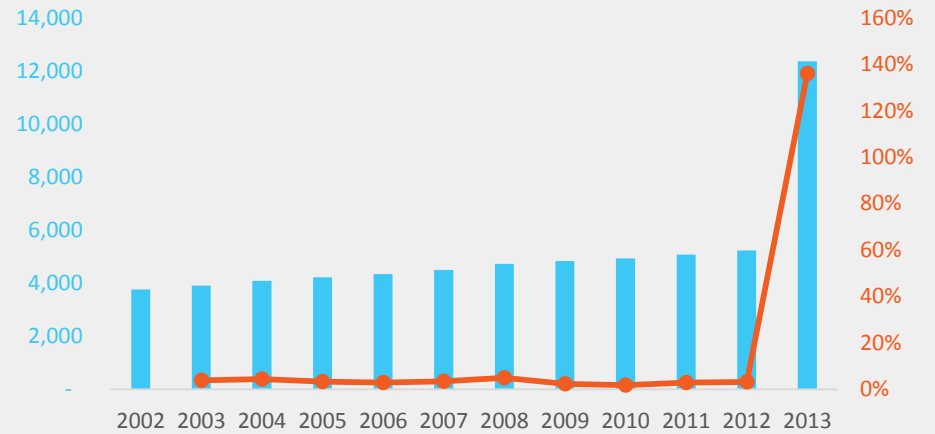
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

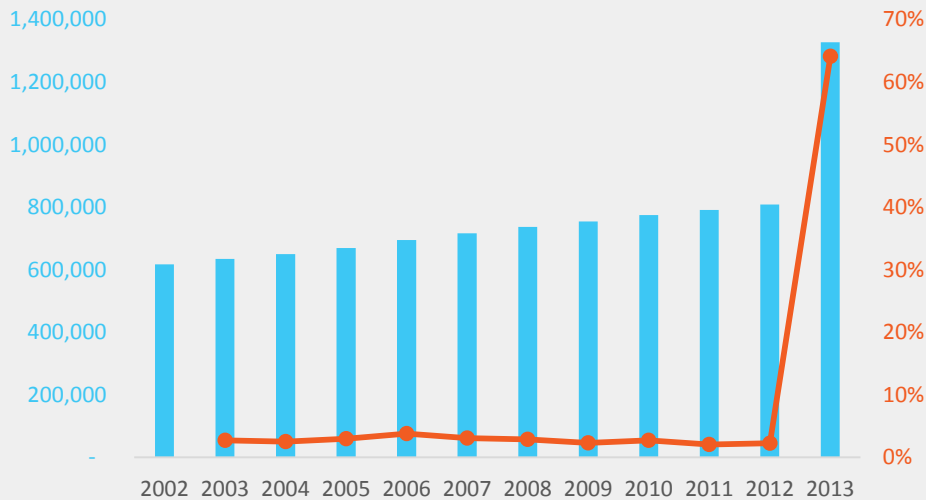
Lincoln Life Sciences Establishments



Nebraska Life Sciences Establishments



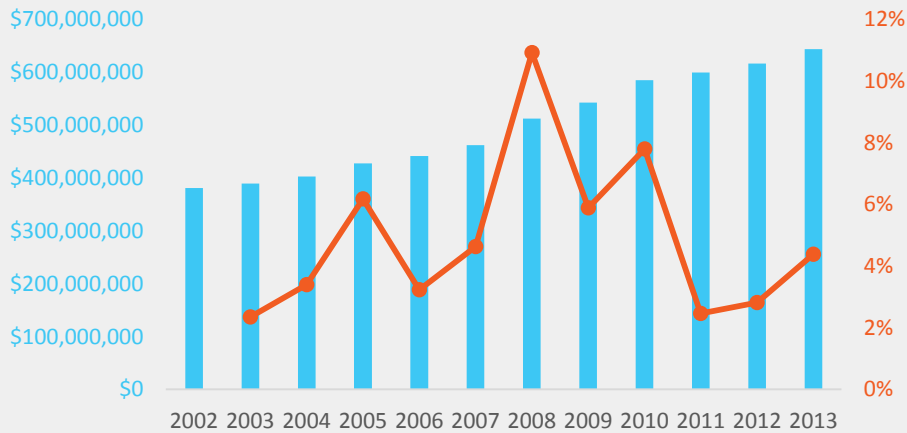
US Life Sciences Establishments



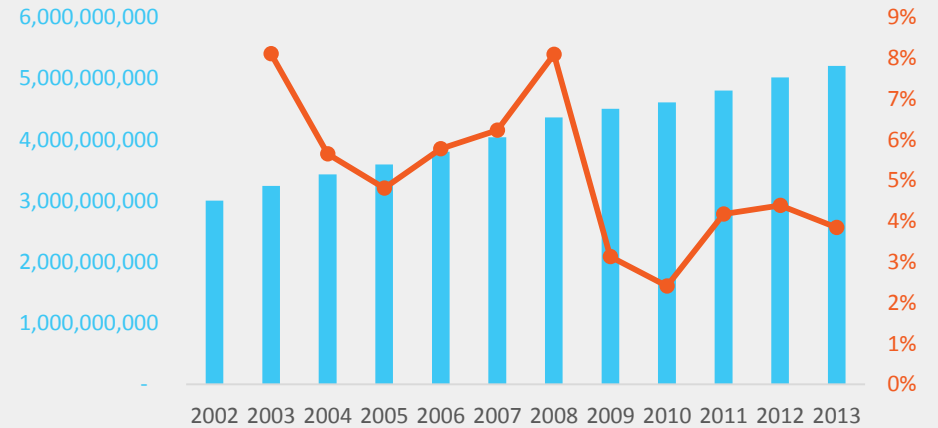
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

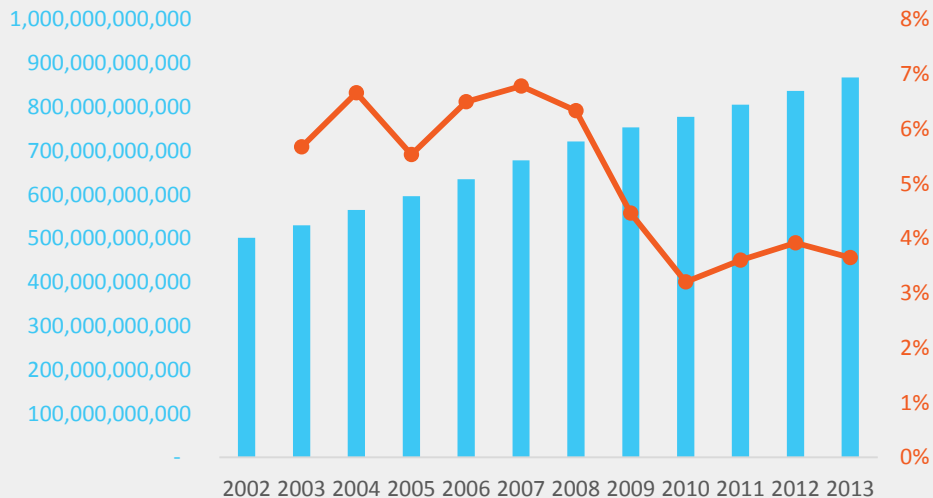
Lincoln Life Sciences Total Wages



Nebraska Life Sciences Total Wages



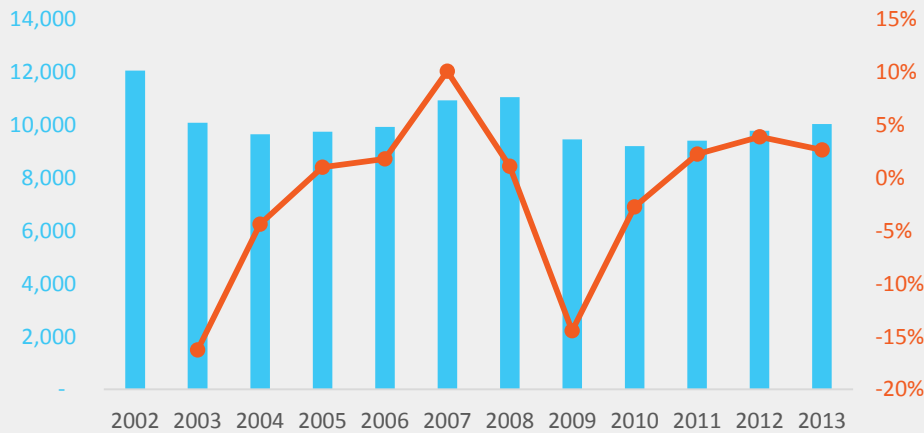
US Life Sciences Total Wages



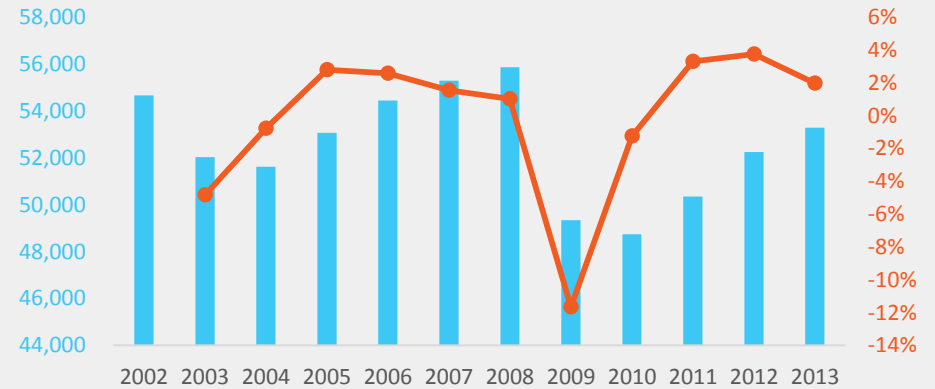
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

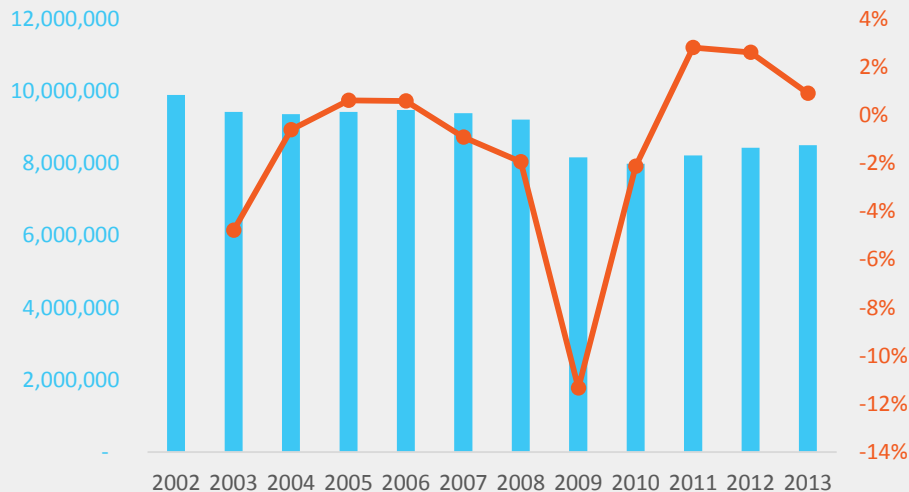
Lincoln Advanced Manufacturing Employment



Nebraska Advanced Manufacturing Employment



US Advanced Manufacturing Employment



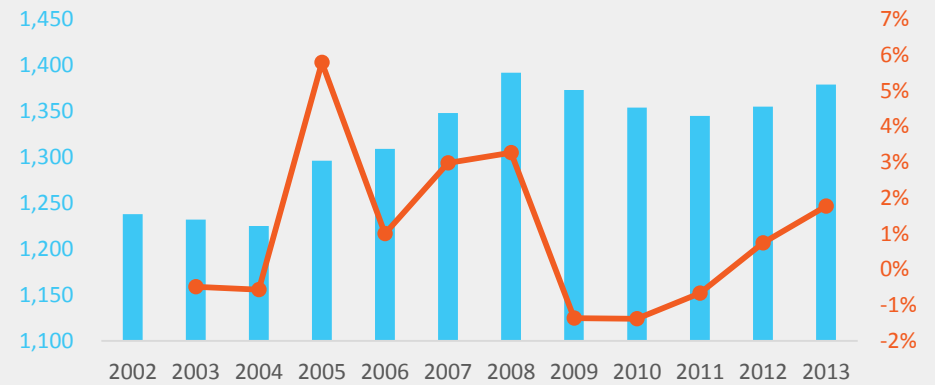
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

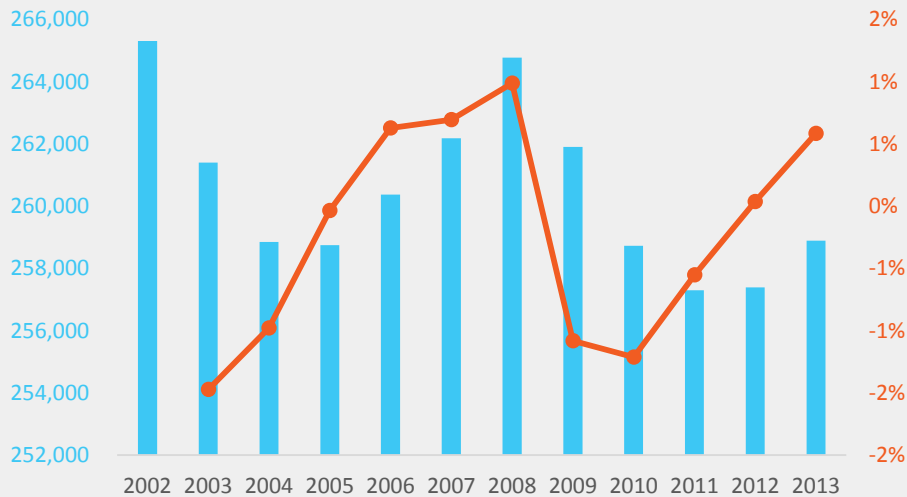
Lincoln Advanced Manufacturing Establishments



Nebraska Advanced Manufacturing Establishments



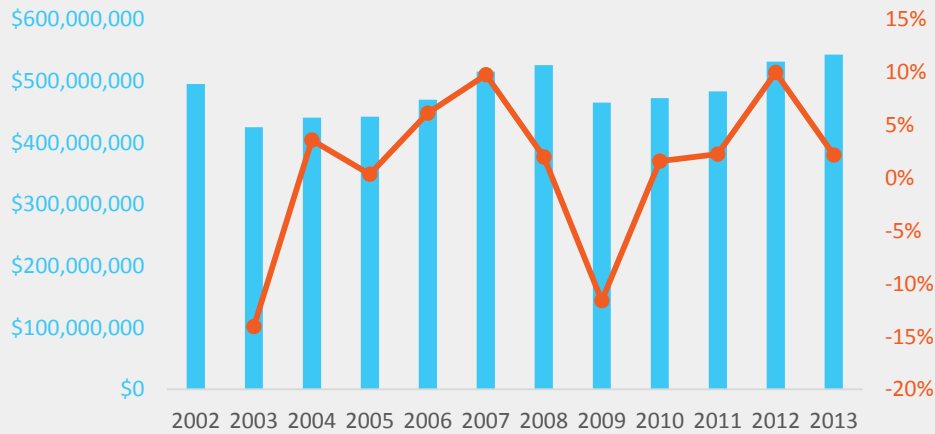
US Advanced Manufacturing Establishments



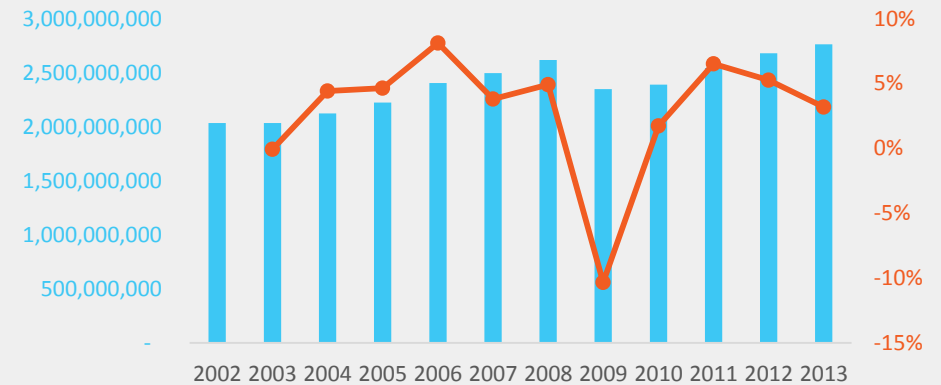
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

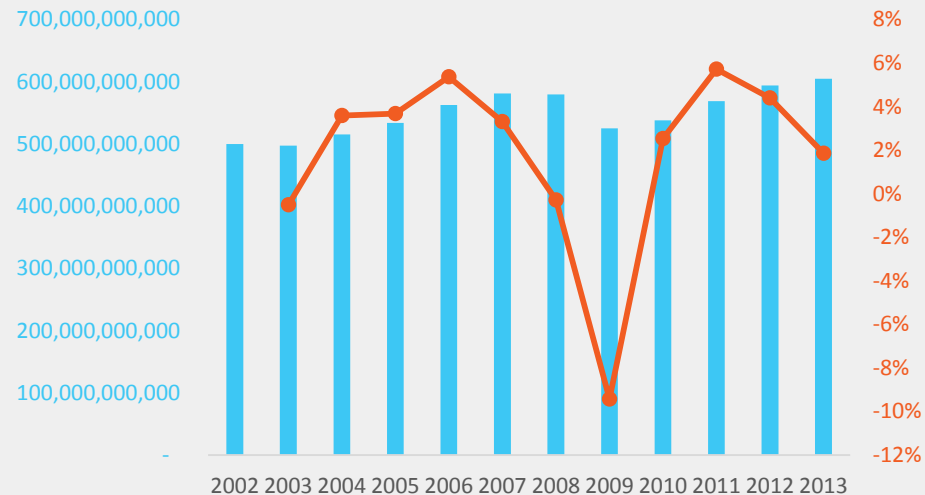
Lincoln Advanced Manufacturing Total Wages



Nebraska Advanced Manufacturing Total Wages



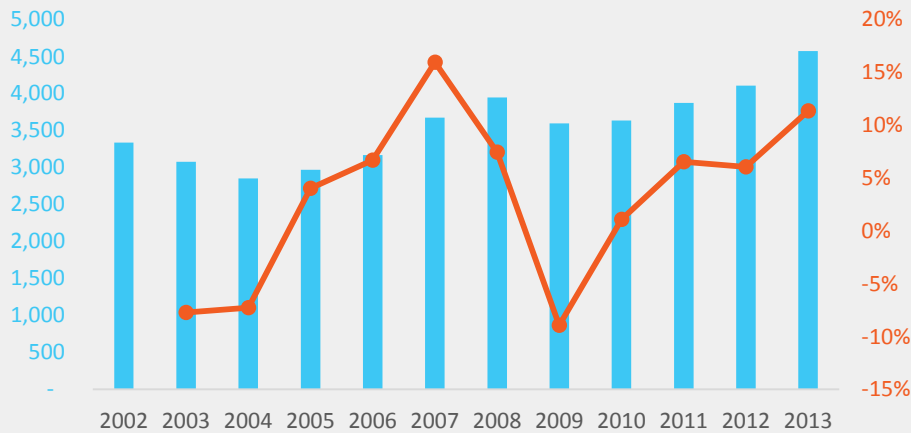
US Advanced Manufacturing Total Wages



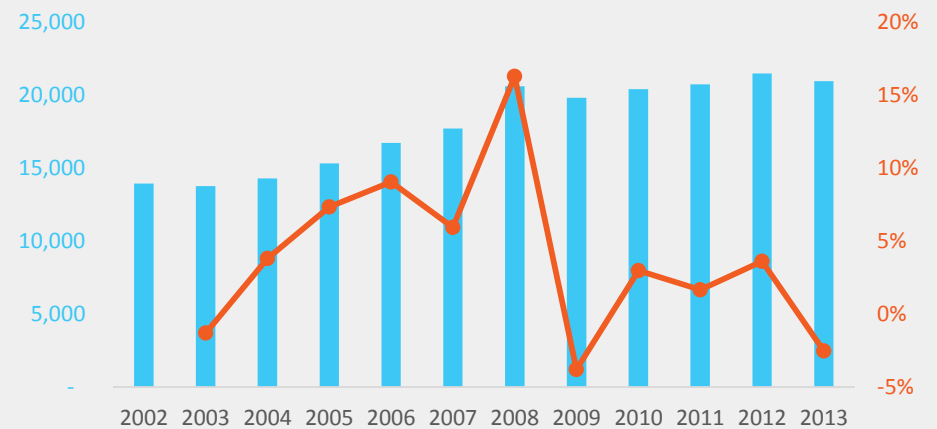
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

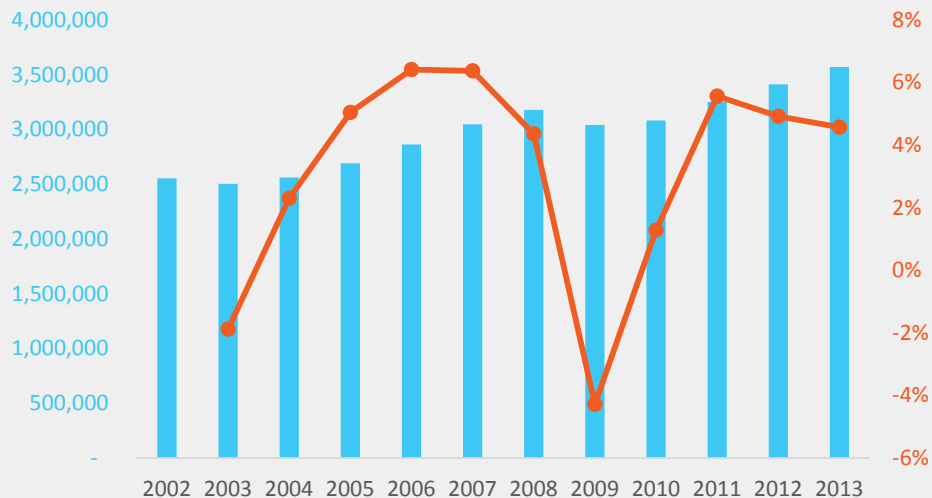
Lincoln IT & Business Services Employment



Nebraska IT & Business Services Employment



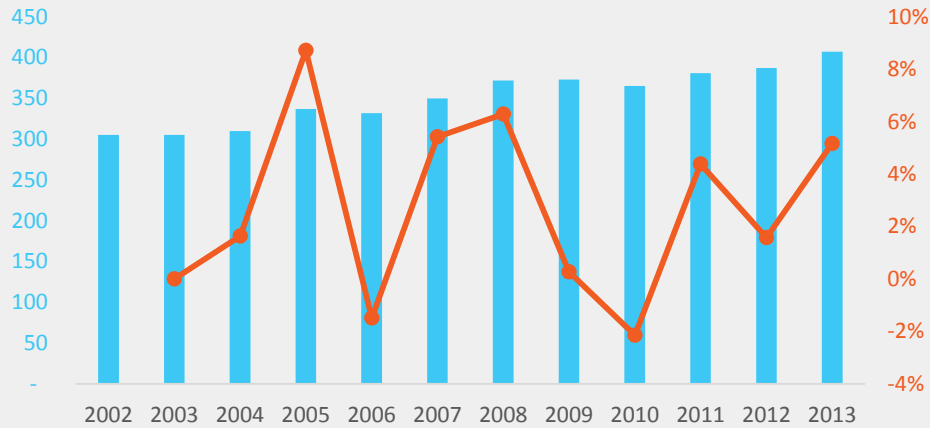
US IT & Business Services Employment



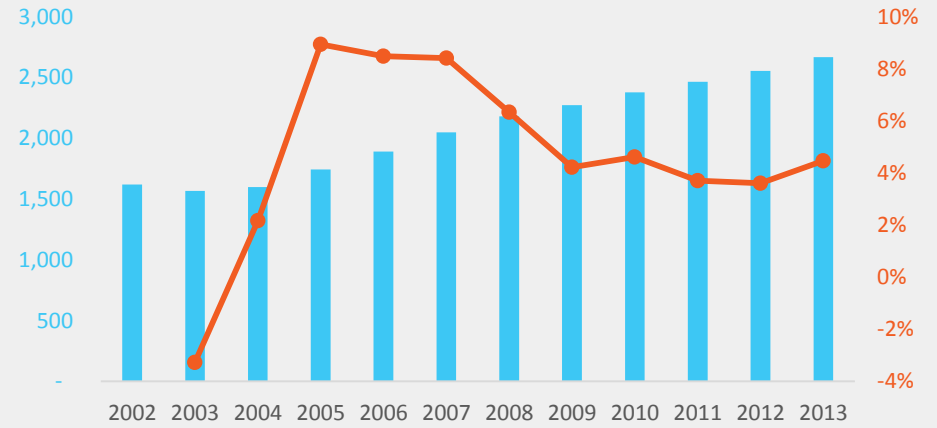
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

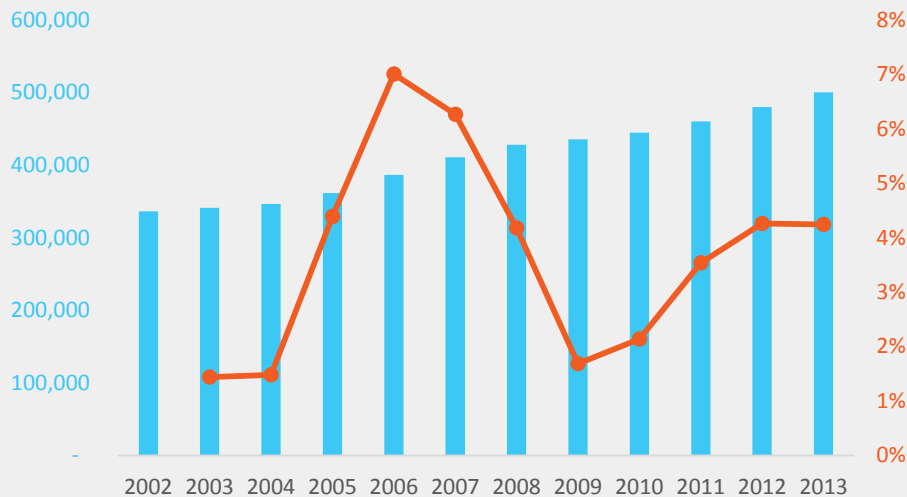
Lincoln IT & Business Services Establishments



Nebraska IT & Business Services Establishments



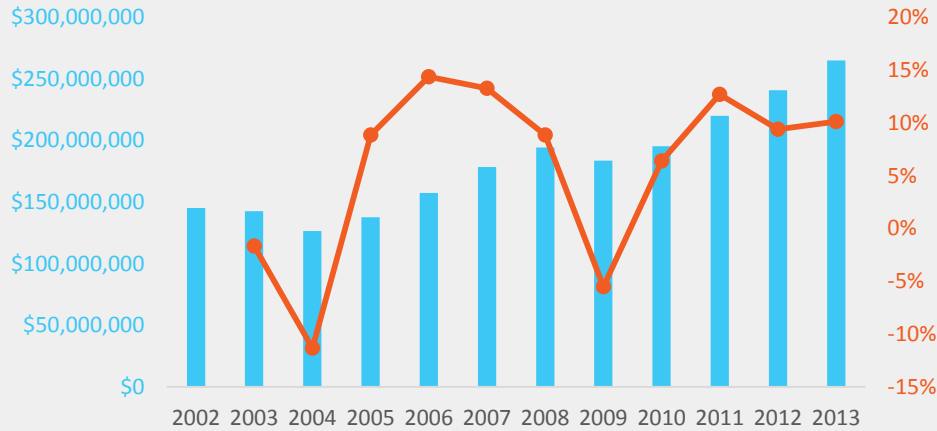
US IT & Business Services Establishments



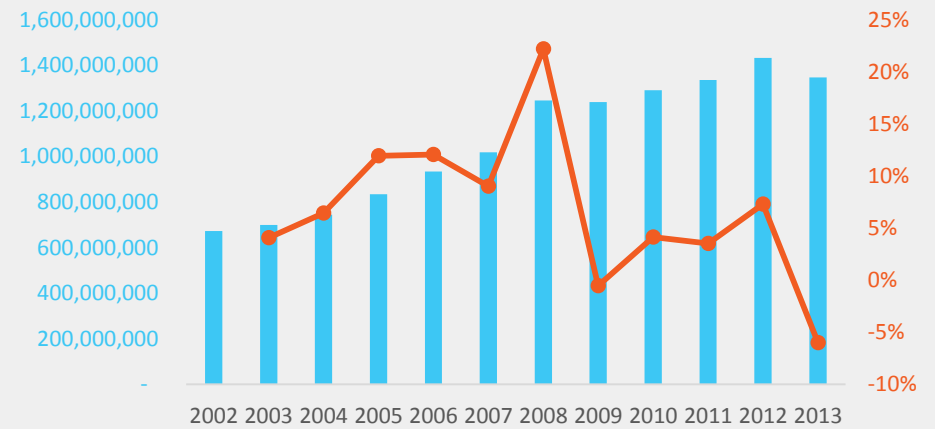
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Industry Trends

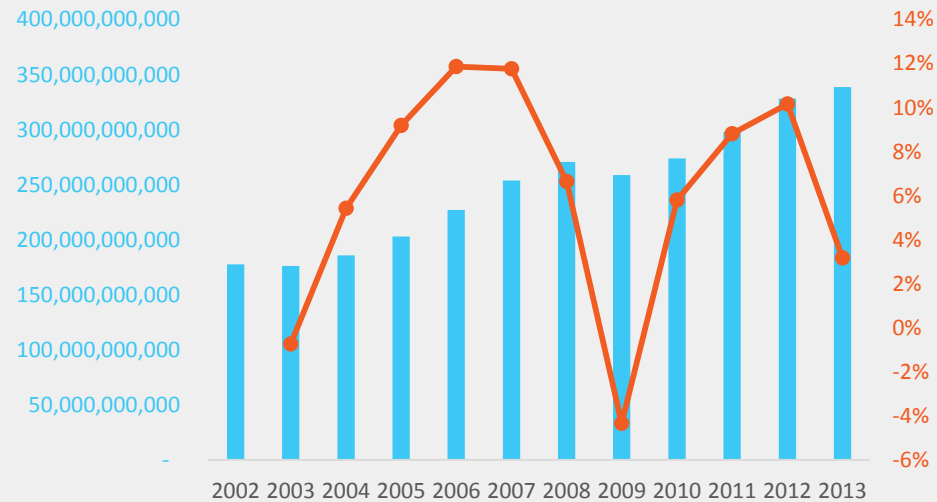
Lincoln IT & Business Services Total Wages



Nebraska IT & Business Services Total Wages



US IT & Business Services Total Wages



Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Target Industry Occupations

Key Occupations in Finance and Insurance Industry						
Occupation	Lincoln MSA Employment	Lincoln MSA LQ	10-year U.S. Growth Projection (%)	United States Salary	Lincoln MSA Salary Index	Education Needed
Accountants and Auditors	1,560	1.10	15.70	\$71,040	0.88	Bachelor's degree
Insurance Claims and Policy Processing Clerks	1,110	3.92	8.70	\$37,300	0.88	High school diploma or equivalent
Compliance Officers	970	3.40	15.00	\$64,960	0.95	Bachelor's degree
Loan Officers	590	1.64	14.20	\$70,350	1.07	High school diploma or equivalent
Insurance Underwriters	530	4.61	5.90	\$69,200	0.80	Bachelor's degree
Claims Adjusters	520	1.58	3.00	\$61,530	0.95	High school diploma or equivalent
Financial Managers	340	0.56	8.80	\$123,260	0.97	Bachelor's degree
Financial Analysts	170	0.57	23.00	\$89,410	0.76	Bachelor's degree
Appraisers and Assessors of Real Estate	120	1.61	7.40	\$55,180	1.03	High school diploma or equivalent
Actuaries	50	1.87	26.70	\$106,680	0.97	Bachelor's degree

Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Target Industry Occupations

Key Occupations in the Life Sciences Industry						
Occupation	Lincoln MSA Employment	Lincoln MSA LQ	10-year U.S. Growth Projection (%)	United States Salary	Lincoln MSA Salary Index	Education Needed
Pharmacy Technicians	380	0.86	32.4	\$30,430	0.87	High school diploma or equivalent
Medical and Health Services Managers	350	0.95	22.4	\$98,460	0.96	Bachelor's degree
Nonfarm Animal Caretakers	290	1.54	27.8	\$22,370	0.98	Less than high school
Medical and Clinical Laboratory Technicians	280	1.42	14.7	\$39,340	0.83	Associate's degree
Health Information Technicians	240	1.05	21	\$36,770	0.99	Postsecondary non-degree award
Medical and Clinical Laboratory Technologists	180	0.89	11.3	\$58,640	0.85	Bachelor's degree
Chemists	130	1.22	3.8	\$76,870	0.88	Bachelor's degree
Agricultural and Food Science Technicians	120	5.24	7	\$36,390	1.09	Associate's degree
Life, Physical, and Social Science Technicians	80	1.12	11.8	\$46,130	0.86	Associate's degree
Microbiologists	40	1.72	13.3	\$73,250	0.87	Bachelor's degree

Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Target Industry Occupations

Key Occupations in the Advanced Manufacturing Industry						
Occupation	Lincoln MSA Employment	Lincoln MSA LQ	10-year U.S. Growth Projection (%)	United States Salary	Lincoln MSA Salary Index	Education Needed
Team Assemblers	2,230	1.77	5.5	\$29,910	1.09	High school diploma or equivalent
Supervisors of Production and Operating Workers	690	0.97	1.9	\$57,420	1.00	Postsecondary non-degree award
Industrial Machinery Mechanics	490	1.30	21.6	\$48,690	0.90	High school diploma or equivalent
Welders, Cutters, Solderers	440	1.07	15	\$38,410	0.94	High school diploma or equivalent
Electrical Engineers	260	1.29	7	\$91,810	0.86	Bachelor's degree
Machinists	210	0.43	8.5	\$40,860	0.88	High school diploma or equivalent
Industrial Production Managers	200	0.99	9.1	\$97,490	0.85	Bachelor's degree
Mechanical Engineers	200	0.63	8.8	\$84,770	0.83	Bachelor's degree
Electrical and Electronics Engineering Technicians	150	0.83	1.9	\$58,070	0.89	Associate's degree

Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix B: Target Industry Occupations

Key Occupations in the Information Technology & Business Services Industry						
Occupation	Lincoln MSA Employment	Lincoln MSA LQ	10-year U.S. Growth Projection (%)	United States Salary	Lincoln MSA Salary Index	Education Needed
Software Developers, Applications	1,140	1.55	27.6	\$93,280	0.73	Bachelor's degree
Market Research Analysts and Marketing Specialists	700	1.42	41.2	\$67,380	0.82	Bachelor's degree
Sales Representatives, Services, All Other	660	0.78	18.8	\$60,770	0.76	High school or Bachelors
Computer Systems Analysts	520	0.86	22.1	\$83,800	0.73	Bachelor's degree
Software Developers, Systems Software	510	1.04	32.4	\$102,550	0.60	Bachelor's degree
Computer Programmers	450	1.13	12	\$78,260	0.82	Bachelor's degree
Sales Managers	280	0.65	11.7	\$119,980	0.85	Bachelor's degree
Computer and Information Systems Managers	270	0.70	18.1	\$129,130	0.79	Bachelor's degree
Graphic Designers	260	1.08	13.4	\$48,730	0.83	Certification
Marketing Managers	190	0.88	13.6	\$129,870	0.77	Bachelor's degree

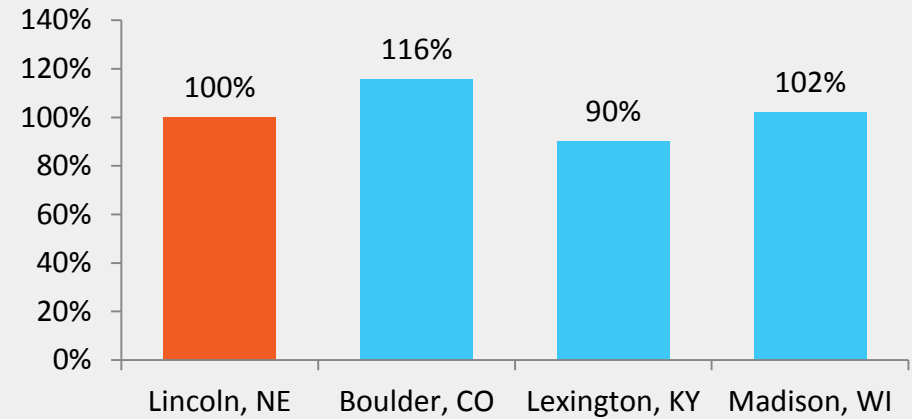
Sources: Bureau of Labor Statistics, AngelouEconomics

Appendix C: Cost of Operations

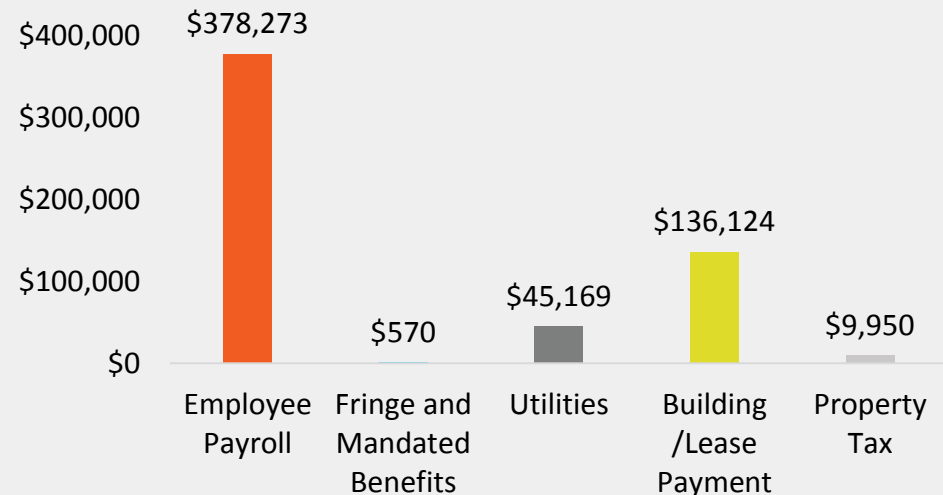
Finance and Insurance Business Demographics

	Financial Services Office
Employees	250
New or Existing?	Existing
Building Size (SqFt)	50,000
Capital Investment (Equipment, Machinery, etc.)	\$6.3 Million
Electricity Demand (Monthly)	60,000 kWh
Water Usage (Monthly)	160,000 gallons

Total Annual Operating Cost Index



Average Cost Savings by Type

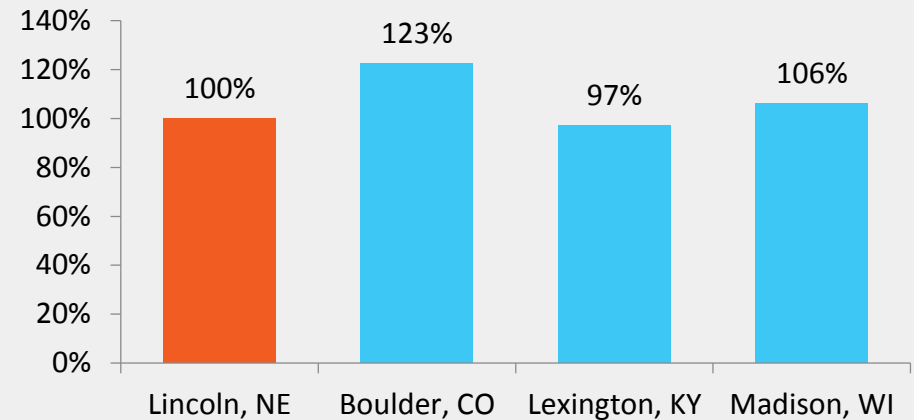


Appendix C: Cost of Operations

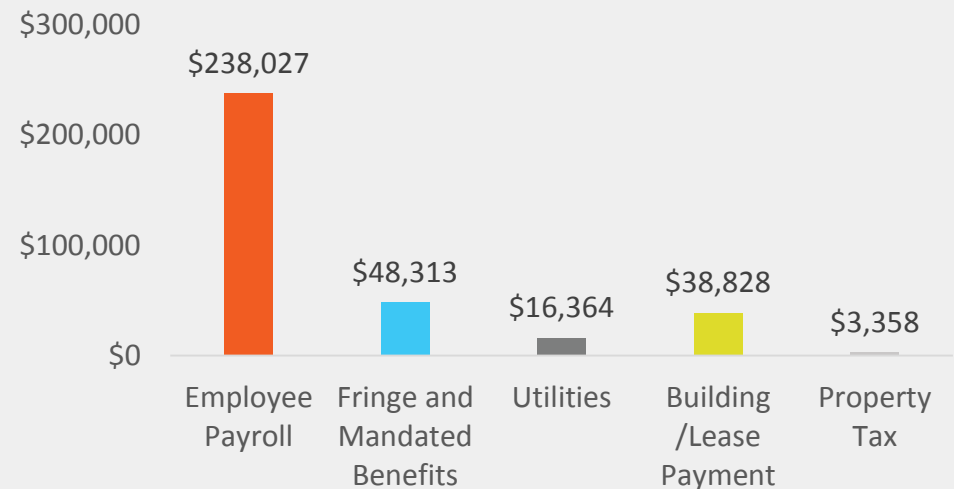
Life Sciences Business Demographics

	Medical Implant Manufacturer
Employees	55
New or Existing?	New
Building Size (SqFt)	30,000
Capital Investment (Equipment, Machinery, etc.)	\$10 Million
Electricity Demand (Monthly)	150,000 kWh
Water Usage (Monthly)	200,000 gallons

Total Annual Operating Cost Index



Average Cost Savings by Type

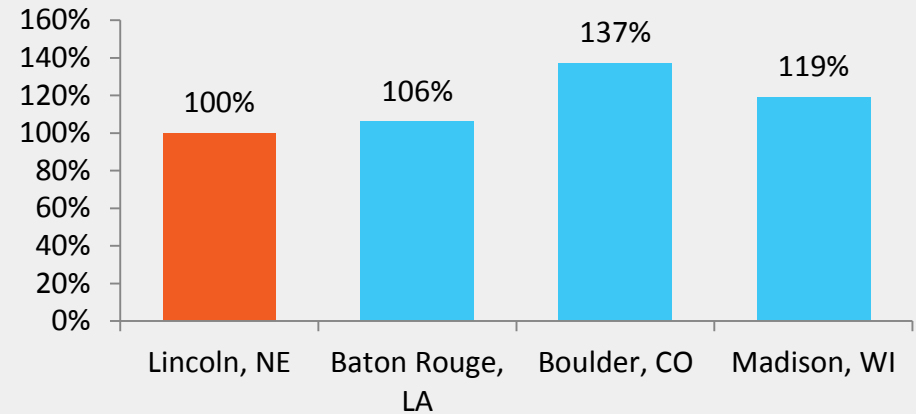


Appendix C: Cost of Operations

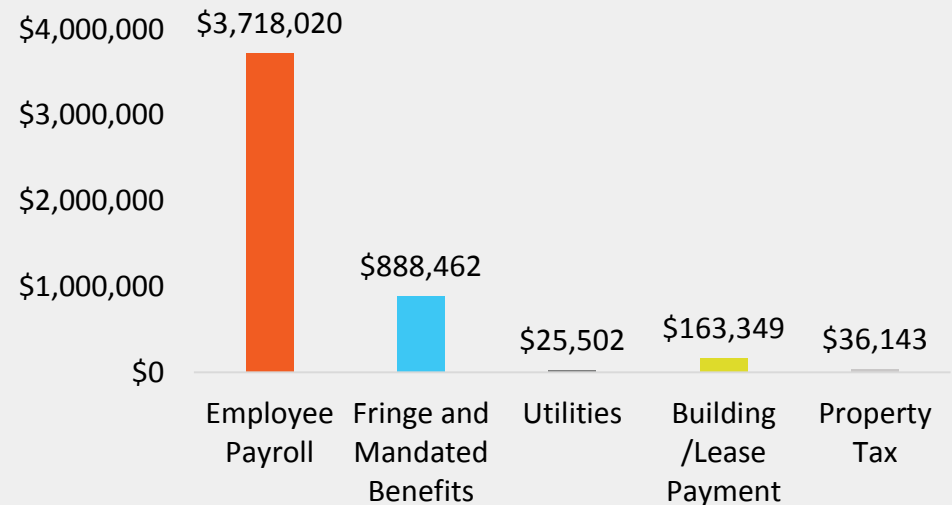
IT & Business Services Business Demographics

	IT Services Office
Employees	300
New or Existing?	Existing
Building Size (SqFt)	60,000
Capital Investment (Equipment, Machinery, etc.)	\$7.5 Million
Electricity Demand (Monthly)	70,000 kWh
Water Usage (Monthly)	195,000 gallons

Total Annual Operating Cost Index



Average Cost Savings by Type



Appendix D: Additional Best Practices

Best Practice: Massachusetts Community Colleges Executive Office

Massachusetts Community Colleges Executive Office (MCCEO) assists community colleges in Massachusetts through policy initiatives, research on current issues and strategic outreach to business/industry, policy stakeholders and media outlets. As a part of a \$20 million grant received from the U.S. Department of Labor, MCCEO is coordinating a three-year transformation program for community colleges to work with employers to create accelerated training for students in six targeted industries: Healthcare, Biotechnology & Life Sciences, Advanced Manufacturing, Clean Energy/Sustainability, Information Technology and Financial Services. Industry teams were formed to engage employee partners in sharing best practices and jointly designing industry-responsive programs. Of the \$20 million, \$5 is invested in integrating the systems of the community colleges and state's career centers in order to make more informed decisions around serving the state's unemployed and under-employed workers and students. As of October 2014, 151 new degree/certificate programs have been developed or enhanced, 6,700 students have been enrolled and 85 percent of students have graduated.

For more information visit:
<http://www.masscc.org/>

Best Practice: LUS Fiber

Starting in 2008, Lafayette, LA offers city-wide video, internet and phone service through a municipal Fiber-To-The Home (FTTH) system. The city-owned LUS fiber is able to offer faster speeds at lower rates. Currently, LUS fiber offers internet downstream speeds up to 1,000 Mbps for as low as \$69.95/month, while the two largest private competitors in the city, Cox Communications and AT&T, offer speeds up to 150 Mbps for as low as \$79.99/month and 45 Mbps for as low as \$71.95/month. LUS Fiber has been cited by representatives from technology companies such as CGI, Enquero and Perficient as an important factor in their decision of selecting Lafayette as the location of preference for their businesses.

Although fiber optics network take a high initial capital investment cost, as of 2012, LUS fiber has been able to generate enough revenue to cover all of its operating expenses and debt service, plus an additional surplus of \$1.489 million. From 2010-2012, LUS fiber revenues grew 61 percent, while expenses increased by only 10 percent. LUS fiber has become a part of Lafayette's long term strategy in attracting and keeping digitally connected entrepreneurs and businesses.

For more information visit:
<http://www.lusfiber.com/>

Best Practice: Public/Private Partnerships in Commercialization

Johns Hopkins Technology Ventures (JHTV) helps bring the university's discoveries and inventions to market through direct assistance in intellectual property protection and commercialization. JHTV additionally has an incubator/accelerator program. JHTV facilitates licensing, investment and various engagement opportunities with business partners and corporate sponsors. To improve the local entrepreneurial ecosystem John Hopkins co-sponsors a 4-month accelerator program, DreamIt Health Baltimore, organized by DreamIt Ventures for health technology startups. JHTV serves as the liaison for license technology agreements, student and faculty connections, potential pilot implementations and other resources from the university such as data and clinical systems.

For more information visit:
<http://www.dreamithealth.com/>
<http://ventures.jhu.edu>

Appendix D: Additional Best Practices

Best Practice: Y Combinator

Y Combinator is a seed fund focused on launching web/mobile application startups. Since 2005, Y Combinator's model has been based on investing a small amount of money (\$120k), in a large number of startups (most recently 85), twice a year. Y Combinator requires companies to move to Silicon Valley for three months and hosts events such as weekly half-day networking and dinner events, Prototype Day for startups to present to each other, Rehearsal Day, Alumni Demo Day and the final Demo Day with around 450 investors.

Startups are also able to book unlimited office hours with dozens of Y Combinator's partners, including some who provide free legal work. Y Combinator's alumni include Reddit, OMGPOP, Dropbox and Airbnb.

For more information visit:
www.ycombinator.com

Best Practice: Minority Business Accelerator

In 2003, in response to the disparity within the business community, the Cincinnati USA Regional Chamber created the Minority Business Accelerator (MBA) to boost both the supply and demand within the minority entrepreneurial community. Although MBA caters specifically to sizeable, high growth-potential, African-American and Hispanic owned minority business enterprise (MBE) companies, there are no set restrictions on location, size, industry or customers. On the supply side, MBA provides management and financial consulting to accelerate growth and achieve long-term sustainability. On the demand side, MBA identifies and facilitates access to contracts for the products and services of the minority firms. MBA also leads a spend goal campaign, in which companies commit an annual amount to spend on local minority firms. Participants in this include not only local corporations and non-profit organizations, but also the firms in the MBA portfolio as well. The MBA portfolio currently consists of 35 firms, employing over 3,500 workers, of which 50 percent are minorities and 40 percent are women.

Best Practice: The Founder Institute

Some 90 percent of startups fail. Serial entrepreneur Adeo Ressi, founder of the incubator the Founder Institute, concluded this is because the wrong people are starting businesses and not being properly trained. The Founder Institute does not take students who already have a company but rather chooses them based on a personality test. Their ideas are developed through a mixture of workshops and immersion. The program, opened in 60 cities around the world, charges a sliding scale (nothing in Johannesburg to \$1,000 in the US). The institute takes a 3.5 percent stake in the companies its students start.

For additional information visit: <https://fi.co/>

Appendix D: Additional Best Practices

Best Practice: Texas CAPCO

After the 2001 “dot-com” boom and bust, the Texas Legislature authorized the creation of the Texas Certified Capital Company (CAPCO) Program to provide capital to startup companies in Texas that otherwise had few funding options in a risk-adverse lending environment. The CAPCO program is administered by the Texas Comptroller’s office through the Texas Treasury Safekeeping Trust Company. A CAPCO is a private government-sponsored venture capital company designed to increase the availability of growth capital to strategically located, early-stage businesses with at least 80 percent of employees located in Texas. Companies located in the strategic investment areas, which are generally rural low-income Texas counties determined annually by the State Comptroller, are qualified to receive tax credits for research activities, job creation and capital investment. CAPCO targets business primarily engaged in manufacturing, processing or assembling products, and not in retail sales, real estate development, finance or professional services. CAPCOs compete for funds provided by participating insurance companies, whom in return receive tax credits to reduce future tax obligations on insurance premium revenues. There are currently 11 certified CAPCOs throughout Texas.

For more information visit: <http://comptroller.texas.gov/capco>

Best Practice: Competitive Research Program, National Research Foundation of Singapore

The National Research Foundation (NRF) department within the Prime Minister’s Office of Singapore coordinates the research and development agenda of Singapore through the development of policies, plans and strategies, funding initiatives and supporting programs. The Competitive Research Program (CRP) Funding Scheme brings together, complimentary, multi-disciplinary teams to conduct high-impact research relevant to the city state. Themes of proposed research must address an important need or problem, rather than being curiosity-driven. Public and private sector companies are encouraged to collaborate.

For more information visit: <http://www.nrf.gov.sg/about-nrf/programmes/competitive-research-programme>