

# MIDDLE AMERICA'S COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP

A REGIONAL APPROACH TO SUPPORTING THE  
BEST LOCAL BUSINESSES WITH A CASE STUDY  
ON CINCINNATI, INDIANAPOLIS, AND LOUISVILLE

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## **ABOUT ENDEAVOR INSIGHT**

Endeavor Insight is the research division of Endeavor, a nonprofit organization that supports high-impact entrepreneurs across the world.

Its work seeks to answer three questions:

- ❶ How do entrepreneurs reach scale at their companies?
- ❷ How do entrepreneurs reach scale in local networks or ecosystems?
- ❸ What can policymakers, philanthropic leaders, investors, support organizations, and other stakeholders do to empower more entrepreneurs to reach scale in their communities?

The methodology utilized in this study builds on previous Endeavor Insight research supported by the Omidyar Network, the Kauffman Foundation, Heron Foundation, Knight Foundation, and the William Davidson Foundation.

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# EXECUTIVE SUMMARY

This report is part of a series of papers published by Endeavor Insight that examine how city leaders can support entrepreneurial businesses to increase local economic growth. The goal of this study is to assess the particular opportunities available to Middle American cities\* and the analyses utilize new data to identify a community's competitive advantages in entrepreneurship. This study was conducted in partnership with the staff at Endeavor Louisville and made possible by the generous support of the Ogle Foundation. This research yielded four major conclusions.

## 1 MIDDLE AMERICAN CITIES NEED NEW SOLUTIONS TO AVOID FALLING FURTHER BEHIND CITIES ON THE COASTS.

On average, Middle American cities have smaller populations, lower incomes, and less-productive economies than metropolitan areas on the coasts. Middle American cities are also challenged by the fact that their economies tend to rely heavily on industries that are projected to shrink or are undergoing rapid technological changes. Looking ahead, Middle American communities need to develop new strategies that build on economic strengths.

## 2 MIDDLE AMERICAN CITIES HAVE SIGNIFICANT RESOURCES THEY CAN USE FOR THEIR GROWTH.

Some of the most important resources that businesses need in order to scale and increase their productivity are abundant in Middle America. Businesses in these regions have ample access to markets and their cities are some of the nation's largest talent generators — Middle American cities produce more Tier 1 and Tier 2 research university graduates than cities on the coasts. This is true on an absolute and per-capita basis for all graduates, as well as those in science, technology, engineering, and math (STEM) programs. While the bulk of venture capital activity continues to be located on the coasts, access to capital is also growing. Decision makers have the opportunity to capitalize on these assets and accelerate the growth of their local economies.

## 3 MIDDLE AMERICAN CITIES THAT PRODUCE BIG, ENTREPRENEURIAL, SUPER-PRODUCTIVE, AND TECH-ENABLED BUSINESSES GENERATE MORE ECONOMIC PRODUCTIVITY.

The Middle American cities with the greatest productivity and highest incomes generate large numbers of the BEST businesses; those that are big, entrepreneurial, super-productive, and tech-enabled. These businesses are valuable to local communities because their characteristics offer distinct benefits.

► **Big companies** — those that grow to have 50 or more employees — create the majority of new jobs, generate more sales, and pay workers more on average.

► **Entrepreneurial**, “homegrown” businesses reinvest in their communities and often promote philanthropy and the growth of new local companies.

► **Super-productive** companies in high-skill industries generate more economic value per employee and attract large amounts of sales from outside their local communities.

► **Tech-enabled** businesses that employ higher proportions of workers in STEM occupations are better positioned for growth in the future.

Many of the BEST businesses are thriving in Middle America. Software companies located outside of coastal hubs have experienced tremendous success, generating high levels of local wealth and spurring additional entrepreneurial activity. Manufacturing companies that harness innovation are transforming traditional processes, and professional services that expand their operations are scaling rapidly.

## 4 DECISION MAKERS SHOULD DEDICATE MORE SUPPORT TO THE BEST BUSINESSES IN MIDDLE AMERICA.

In order for Middle American cities to capture the benefits that the BEST businesses offer, decision makers must create strategies to both increase the number of the BEST businesses and support the BEST businesses that already exist as they continue to grow.

Local leaders should take coordinated action to support their BEST businesses by:

► Identifying the BEST businesses that make up local competitive advantages in entrepreneurship.

► Aligning the development of local resources to the needs of the founders leading the BEST businesses.

► Acting regionally to broaden the support available to the BEST businesses.

The first section of this report offers in-depth analyses on these findings and further practical steps for city leaders in Middle America. The second section includes a case study of the combined Cincinnati-Indianapolis-Louisville area, which provides a useful example of how decision makers can take a regional approach in identifying their competitive advantages in entrepreneurship and supporting their BEST businesses as a means to improve local economies.

\* Middle American cities are mainland U.S. metropolitan statistical areas where the principal city is more than 50 miles from the Atlantic or Pacific coasts. The terms “city,” “metro area,” and “metropolitan area” are used synonymously in the paper to refer to metropolitan areas designated by the U.S. Census Bureau. “Major metropolitan areas” are those with 250,000 or more in population. Unless noted otherwise, the names of individual cities are used to refer to the metropolitan areas of which they are a part.

CONTEXT:

MIDDLE AMERICAN CITIES NEED NEW SOLUTIONS TO AVOID FALLING FURTHER BEHIND CITIES ON THE COASTS.

MIDDLE AMERICAN CITIES ARE STRUGGLING TO KEEP UP.

This report defines Middle American cities as mainland U.S. metropolitan statistical areas where the principal city is more than 50 miles from the Atlantic or Pacific coasts, and analyzes data on major metros that have populations of 250,000 or more.

On average, major Middle American cities have smaller populations than their peers on the coasts. The average Middle American city in this group has only 1 million residents, compared to 2.3 million residents among coastal cities.<sup>1</sup> People living in major Middle American cities also have lower average incomes than

those living on the coasts. A comparison of the top third of cities by average income shows that Middle Americans in those cities have incomes 35 percent lower than people on the coasts. In fact, their average income is similar to those living in middle-tier coastal cities as the table at the bottom of the page illustrates.

PRINCIPAL CITIES OF MAJOR U.S. METROPOLITAN AREAS



Note: The map shows principal cities for major metro areas — those with populations of 250,000 or more. Middle American cities are mainland U.S. metropolitan statistical areas where the principal city is more than 50 miles from the Atlantic or Pacific coasts.  
Source: Endeavor Insight analysis, U.S. Census Bureau.

AVERAGE INCOME OF COASTAL AND MIDDLE AMERICAN CITIES

Middle Americans have lower average incomes than people on the coasts.

	Average Income in Coastal Cities	Average Income in Middle American Cities
Top Third of Metro Areas	\$77,000	\$57,000
Middle Third of Metro Areas	\$57,000	\$47,000
Bottom Third of Metro Areas	\$46,000	\$40,000

Note: For metropolitan statistical areas with populations of 250,000 or more. 2018 Data. Rounded to the nearest 1,000th.  
Source: Endeavor Insight analysis; U.S. Bureau of Economic Analysis

The same is true for Middle Americans in the middle third of cities — average incomes are more similar to those in the bottom third of coastal cities.<sup>2</sup>

The toll of the economic gap between Middle American cities and those on the coasts has an outsized impact on the most vulnerable segments of these communities. On average, there are higher proportions of families living below the poverty line in Middle American cities and disproportionately higher rates of children living in poverty.<sup>3</sup>

Major Middle America cities also have less productive economies on a per-capita basis. Similar to the gap in income, a comparison of gross domestic product (GDP) per capita among the most productive cities across the country shows that cities on the coasts are 35 percent more productive than their counterparts in Middle America.<sup>4</sup>

News reports have underscored how Middle American economies are struggling to keep up. The *New York Times* highlighted economic warning signs

in the Midwest including sluggish job growth in 2019, especially in communities that still depend on manufacturing and agriculture.<sup>5</sup> The *Washington Post* reports that, despite the nation's growing economy, job cuts and factory closures still leave "parts of America behind."<sup>6</sup>

#### MIDDLE AMERICAN CITIES ARE AT INCREASED RISK GOING FORWARD.

Looking ahead, Middle American cities cannot rely on the same sectors and strategies that built their economies in the past. In major Middle American cities, 73 percent of jobs are in industries projected to grow more slowly over the next decade than the labor force as a whole. This puts an estimated 29.5 million Middle American jobs at risk.<sup>7</sup>

Regions that have relied on a single manufacturing sector are at increased risk. In Southeast Michigan, for example, one out of every 11 private sector workers are employed at companies in the automotive manufacturing sector.<sup>8</sup> This industry is undergoing rapid technological changes

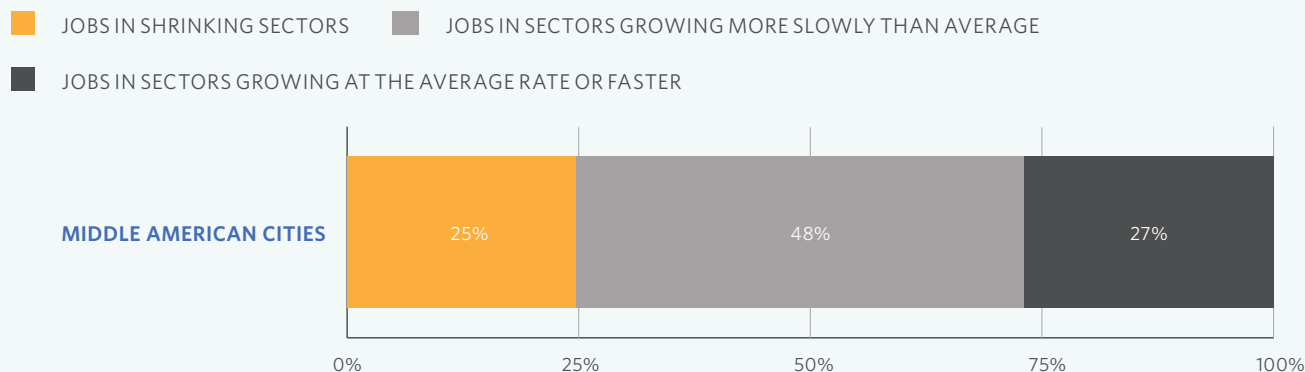
that threaten these jobs and expose the local community to greater volatility than would exist in a more diversified economy.

#### Changes in technology will continue to impact Middle American economies, presenting new challenges and new opportunities.

Digital transformation is changing how and where work happens, automation and other innovations are disrupting the operations of traditional sectors, and advancements in information technology are shaping customer behaviors and expectations. Going forward, there will never be less technology than there is today, and it is up to Middle American cities to limit their exposure to downside risks and harness the benefits that these changes can bring.

### PROPORTION OF MIDDLE AMERICAN JOBS IN INDUSTRIES PROJECTED TO SHRINK

The majority of Middle American jobs are in industries projected to grow more slowly than average.



Note: Average rate is based on projected employment growth of 5 percent through 2028.  
Source: Endeavor Insight analysis; U.S. Bureau of Labor Statistics Employment Projections

## OPPORTUNITY:

# MIDDLE AMERICAN CITIES HAVE SIGNIFICANT RESOURCES THEY CAN USE FOR THEIR GROWTH.

News reports too often take an overly negative stance on Middle American economies. Despite the very real challenges that Middle American cities face, they have substantial resources upon which they can draw to bolster their economic growth. Some of the most important resources that businesses need in order to scale and increase their productivity are abundant in Middle America.

### MIDDLE AMERICAN CITIES ARE SOME OF THE NATION'S LARGEST TALENT GENERATORS.

**Major Middle American cities produce more Tier 1 and Tier 2 research university graduates than similarly sized cities on the coasts on an absolute and per-capita basis.** As the graph below illustrates, Middle America is home to 58 percent of top research university students and 60 percent of such institutions.\*

On an absolute basis there are more Tier 1 and Tier 2 research university students in cities like Minneapolis, Minnesota or Atlanta, Georgia than there are in Seattle, Washington. On a per capita basis, Chicago, Illinois has more Tier 1 and Tier 2 students than San Francisco, California.

Phoenix, Arizona has just as many students at research universities as Boston, Massachusetts.<sup>9</sup>

This pattern also holds true for Tier 1 and Tier 2 graduates with degrees or certificates in science, technology, engineering, and math (STEM) disciplines. About 58 percent of these graduates come from universities in major Middle American cities such as Georgia Institute of Technology in Atlanta, Georgia; Texas A&M University in College Station, Texas; Pennsylvania State University in State College, Pennsylvania; and the University of Michigan in Ann Arbor, Michigan.<sup>10</sup>

Growing companies from coastal cities are taking note that Middle American communities have skilled workforces. Several recent examples come from major corporations that have created satellite offices in Middle American cities, particularly because of the availability of people with technological talent.

**Uber** announced that it will make Chicago, Illinois its official Uber Freight headquarters further expanding its workforce from the current 1,000 to become one of the largest tech employers in the city. **Google**

expanded their offices in Madison, Wisconsin and Detroit, Michigan.<sup>11</sup>

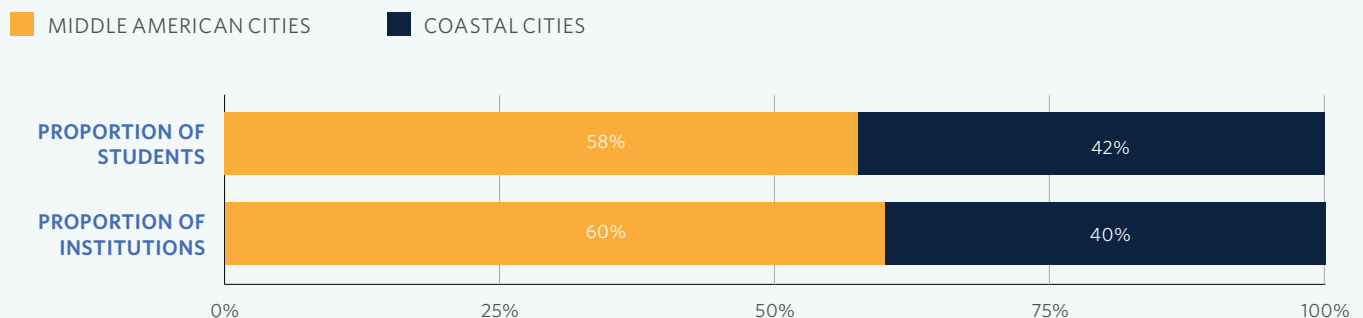
### MIDDLE AMERICAN CITIES HAVE ABUNDANT ACCESS TO CUSTOMERS.

Businesses operating in Middle America have ample access to markets, whether they sell directly to consumers or cater to serving other businesses. There are more total cities in Middle America with larger populations than on the coasts. Middle American companies, therefore, are more likely to have access to larger markets in their home cities.<sup>12</sup> Business-to-business companies in particular have the upper hand, as there are more Fortune 500 companies in Middle America than on the coasts.<sup>13</sup>

Middle America's central geographic location provides added benefits. Business-to-business companies can access clients across the entire country, often within just a few hours by plane. Manufacturing companies can more easily distribute goods to customers throughout the United States and even Canada, as many cities have robust transportation and logistics infrastructure.

### MIDDLE AMERICAN CITIES PRODUCE MORE GRADUATES THAN COASTAL CITIES.

For Tier 1 and Tier 2 research universities in metropolitan areas with more than 250,000 population.



Note: Students include those earning undergraduate, graduate, and professional degrees.  
Source: Endeavor Insight analysis; IPEDs, National Center for Education Statistics.

\* Tier 1 and Tier 2 research universities are institutions that have high or very high levels of research activity and awarded at least 20 research or scholarship doctoral degrees during 2018, based on the Carnegie Classification of Institutions of Higher Education.



## INVESTMENT CAPITAL IN MIDDLE AMERICA LAGS BEHIND THE COASTS, BUT HAS GROWN STEADILY.

While the bulk of venture capital (VC) activity continues to occur on the coasts, there are significantly more deals happening in Middle American cities than there were just a few years ago. More than 40 Middle American cities went from having no venture capital deals in 2012 to having one or more in 2018.\* Over 80 percent of Middle American cities that received VC in 2012 did so again six years later, and 14 of those cities saw the number of local deals double or increase even higher.<sup>14</sup>

Cities like Denver, Colorado and Chicago, Illinois had more than 100 VC deals in 2018, but this activity is not just limited to the largest Middle American metro areas. Cities such as Nashville, Tennessee; Pittsburgh, Pennsylvania; and Kansas City, Missouri each had more than 20 deals that year.<sup>15</sup>

When notably large exits of venture-backed companies occur, it is a sign of positive momentum that can attract future VC to Middle American cities. **Duo Security**, a cyber security company in Ann Arbor, Michigan specializing in two-factor authentication was acquired by Cisco in 2018 for \$2.35 billion. **Domo**, a business intelligence firm specializing in big data and located in American Fork, Utah has

raised a total of \$689.7 million in venture capital and went public in 2018. Atlanta, Georgia's **GreenSky** is one of the largest financial technology firms in the country, and raised \$874 million at its 2018 initial public offering.<sup>16</sup>

Middle American cities have the opportunity to capitalize on these assets and accelerate the growth in their local economies. The next section of this report uses new data to identify a specific type of entrepreneurship that harnesses these resources to create economic value in communities. These analyses highlight steps that leaders in Middle America can take to increase productivity and create a more prosperous future for their cities.

## TOP U.S. CITIES BY STUDENTS PER CAPITA AT TIER 1 AND TIER 2 RESEARCH UNIVERSITIES

Among Cities with 250,000 in population or more. Middle American cities appear in bold.

Rank	Metropolitan Statistical Area	Students per 100,000 Residents	Tier 1 and Tier 2 Research Universities
1	<b>Lynchburg, VA</b>	<b>3,042</b>	<b>Liberty University</b>
2	<b>College Station, TX</b>	<b>2,632</b>	<b>Texas A&amp;M</b>
3	<b>Gainesville, FL</b>	<b>2,476</b>	<b>University of Florida</b>
4	Manchester, NH	2,348	Southern New Hampshire University
5	<b>Ann Arbor, MI</b>	<b>1,839</b>	<b>University of Michigan, Eastern Michigan</b>
6	<b>Tallahassee, FL</b>	<b>1,659</b>	<b>Florida State University</b>
7	<b>Lubbock, TX</b>	<b>1,399</b>	<b>Texas Tech University</b>
8	<b>Salt Lake City, UT</b>	<b>1,207</b>	<b>Western Governors University, University of Utah</b>
9	<b>Provo-Orem, UT</b>	<b>1,198</b>	<b>Utah Valley University; Brigham Young University-Provo</b>
10	<b>Boulder, CO</b>	<b>1,128</b>	<b>University of Colorado Boulder</b>
11	<b>Davenport, IA</b>	<b>1,125</b>	<b>Kaplan University</b>
12	<b>Lansing-East Lansing, MI</b>	<b>1,095</b>	<b>Michigan State University</b>
13	<b>Lincoln, NE</b>	<b>1,035</b>	<b>University of Nebraska-Lincoln</b>
14	<b>Madison, WI</b>	<b>1,030</b>	<b>University of Wisconsin-Madison</b>
15	<b>Durham-Chapel Hill, NC</b>	<b>1,022</b>	<b>University of North Carolina at Chapel Hill, Duke University</b>
16	<b>Albany, NY</b>	<b>1,003</b>	<b>SUNY at Albany; SUNY Empire State College, Rensselaer Polytechnic Institute</b>
17	<b>Springfield, MA</b>	<b>993</b>	<b>University of Massachusetts-Amherst</b>
18	<b>Fort Collins, CO</b>	<b>965</b>	<b>Colorado State University-Fort Collins</b>
19	Vallejo, CA	897	University of California-Davis
20	Trenton, NJ	890	Thomas Edison State University, Princeton University
21	Savannah, GA	866	Savannah College of Art and Design
22	San Luis Obispo, CA	789	California Polytechnic State University-San Luis Obispo
23	<b>Erie, PA</b>	<b>770</b>	<b>Pennsylvania State University</b>
24	<b>Springfield, MO</b>	<b>744</b>	<b>Missouri State University-Springfield</b>
25	<b>Akron, OH</b>	<b>737</b>	<b>Kent State, University of Akron</b>

Note: Students include those earning undergraduate, graduate, and professional degrees.

Source: Endeavor Insight analysis; IPEDs, National Center for Education Statistics; Bureau of Economic Analysis.

\* Based on available Pitchbook data for venture capital deals Series A and above by Combined Statistical Area.

# MIDDLE AMERICAN CITIES THAT PRODUCE BIG, ENTREPRENEURIAL, SUPER-PRODUCTIVE, TECH-ENABLED COMPANIES GENERATE MORE ECONOMIC PRODUCTIVITY.

## THE MOST PROSPEROUS MIDDLE AMERICAN CITIES OFFER IMPORTANT LESSONS.

Many Middle American cities are performing on par with, if not better than, cities on the coasts. The cities with high GDP per capita are not only more prevalent in Middle America, but those cities produced nearly \$138 billion more in GDP in 2018 than the top third of coastal cities.<sup>17</sup>

These high-performing Middle American cities provide especially useful lessons when one looks closely at what sets them apart.

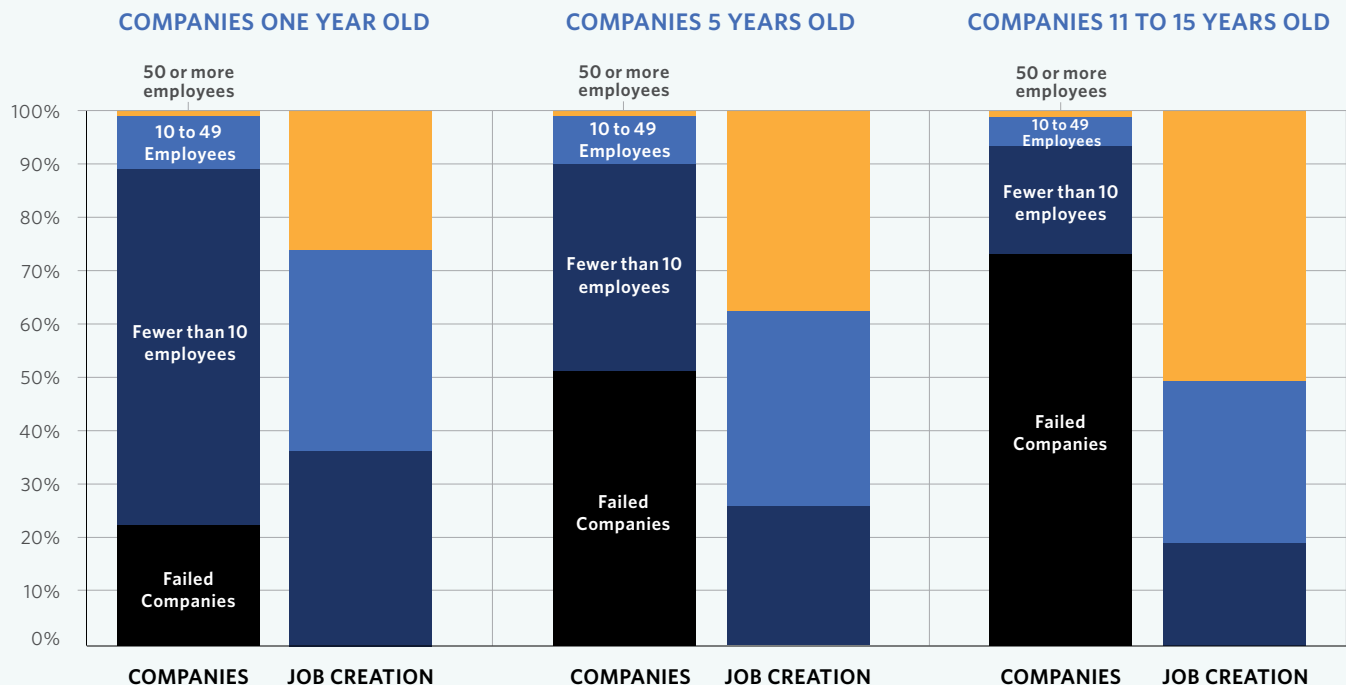
**Middle American cities with the greatest productivity and highest incomes all generate more of a specific type of local business: big, entrepreneurial companies that operate in super-productive and tech-enabled industries.**

## COMPANIES THAT ARE BIG, ENTREPRENEURIAL, SUPER-PRODUCTIVE, AND TECH-ENABLED PROVIDE MANY BENEFITS.

In the last several years, new research has emerged on several factors associated with local job creation and economic growth. This work confirms what many decision makers already understand from their on-the-ground experience, but have lacked the evidence to prove. Data on four major findings that are useful to local leaders is summarized on the opposite page.\*

## PERCENTAGE OF JOB CREATION OVER TIME

The small number of companies that grow to be big create the majority of new jobs.



Source: Endeavor Insight analysis; U.S. Census Bureau. Business Dynamics Statistics.

\* The text from this section has been excerpted from the Endeavor Insight report, "Identifying the BEST Businesses for Local Economic Development."



## 1 BIG COMPANIES — THOSE THAT GROW TO HAVE 50 OR MORE EMPLOYEES — CREATE THE MAJORITY OF NEW JOBS.

Most new companies are low-productivity microbusinesses that will never grow to have more than 10 employees.\* As the chart on the previous page illustrates, more than half of these tiny companies fail before they are five years old. Even when they survive, these companies make a relatively small contribution. Low-productivity microbusinesses that are 11 to 15 years old generate less than 20 percent of the total jobs created by businesses started in the same time period.

Companies that grow big — defined here as reaching at least 50 employees — have a much greater economic impact. Though less than 2 percent of businesses become big by the time they are 11 to 15 years old, these companies produce the majority of the jobs created among businesses in their age group. Most companies that grow to have 50 employees continue to expand. The typical business that grows big employs more than 400 workers.†

These companies create more than just large numbers of jobs. As they grow they become more efficient by taking advantage of economies of scale. In most industries, the small number of businesses that become big generate the majority of revenues. Companies with 50 or more employees also tend to pay workers higher average salaries when compared to smaller firms. Studies have also found that fast-growing companies like these are more likely than average to hire workers from underrepresented groups.

## 2 ENTREPRENEURIAL, “HOMEGROWN” BUSINESSES REINVEST MORE IN THEIR COMMUNITIES AND OFTEN PROMOTE PHILANTHROPY AND THE GROWTH OF OTHER FIRMS.

Businesses created and led by local entrepreneurs offer a number of benefits to cities. They reinvest more earnings back into their communities when compared to the satellite offices or franchise locations of corporations in other regions. “Homegrown” businesses that grow also tend to keep their headquarters offices in the cities where they started out. This means that most of the high-paying jobs they create — in positions such as senior management, strategy, and research — will be in the same metro area.

Investors in high-growth companies are usually based in the same community that the business is located in as well. If a business is successful enough to be acquired or go public, their participation helps a large percentage of the profits to be recycled back into the area. This recycling effect is even greater when homegrown companies offer stock options to local employees.

Another long-term benefit that can come from successful local entrepreneurs is seen in historical examples across the country: philanthropic giving. Entrepreneurs like Ewing Kauffman and J. Irwin Miller built companies that grew big and went on to create large foundations and other civic institutions that continue to support their communities to this day.

Finally, entrepreneurial firms that grow big have the potential to spawn other local successes in their cities. This comes primarily through former employees who go on to become entrepreneurs themselves. When former employees of a successful business start new companies, studies have shown that these new businesses are more likely to succeed. Researchers have also noted that successful founders can serve as valuable mentors and investors for upcoming entrepreneurs in their communities and act as local role models.‡

## 3 SUPER-PRODUCTIVE COMPANIES GENERATE MORE ECONOMIC VALUE PER EMPLOYEE.

In terms of local entrepreneurship, some industries are much more productive than others. Many of the most common local businesses, such as restaurants, retail stores, and hotels, are not incredibly productive. Most businesses in these areas generate less than \$70,000 of total value in products or services per worker each year. Other sectors, such as software and financial services, produce far more. Companies in industries like software and financial services generate an average of more than \$150,000 of value in products or services per worker every year. This makes the “super-productive” companies working in these sectors especially important to local economic growth.

The industries that super-productive businesses are found in can be classified into four groups:

- ▶ Advanced manufacturing sectors including those that design and produce electronics, machinery, medical devices, pharmaceuticals, and specialty chemicals;
- ▶ High-value research and consulting such as those that provide consumer research, engineering and environmental services, IT consulting, and management consulting;
- ▶ Software-based sectors including companies working in cybersecurity, data analytics, digital media, e-commerce, and software-as-a-service; and
- ▶ Other high-productivity sectors such as lending-based businesses, investment banking, oil and gas extraction, and logistics providers.<sup>¶</sup>

Super-productive businesses are also valuable to local regions because of where their customers are located. While less productive businesses like restaurants tend to sell almost exclusively to local customers, more productive companies are usually in industries that sell primarily to customers in other cities and countries. This means that the growth of these super-productive businesses helps to increase the size of the local economy much more than that of other companies.

## 4 TECH-ENABLED BUSINESSES ARE BETTER POSITIONED FOR GROWTH IN THE FUTURE.

Super-productive sectors are also well-positioned to expand in the future, since they have a larger proportion of STEM workers than other businesses, on average. STEM workers are those with occupations related to science, technology, engineering, and math. This means that this set of industries can also be referred to as “tech-enabled,” since most super-productive sectors rely heavily on new technologies and STEM occupations.

Companies that employ more STEM workers are expected to have much greater productivity growth than other businesses. Across the entire United States, the output generated by knowledge-intensive companies with large numbers of employees in STEM occupations is projected to grow by 20 percent on average during the next eight years, compared to 14 percent for all other businesses.

\* These analyses only include companies that have at least one employee. If legally incorporated businesses with no employees were to be included (e.g., LLCs set up to purchase real estate or for individuals doing part-time consulting work), the proportion of companies that never grow beyond 10 employees would be even greater.

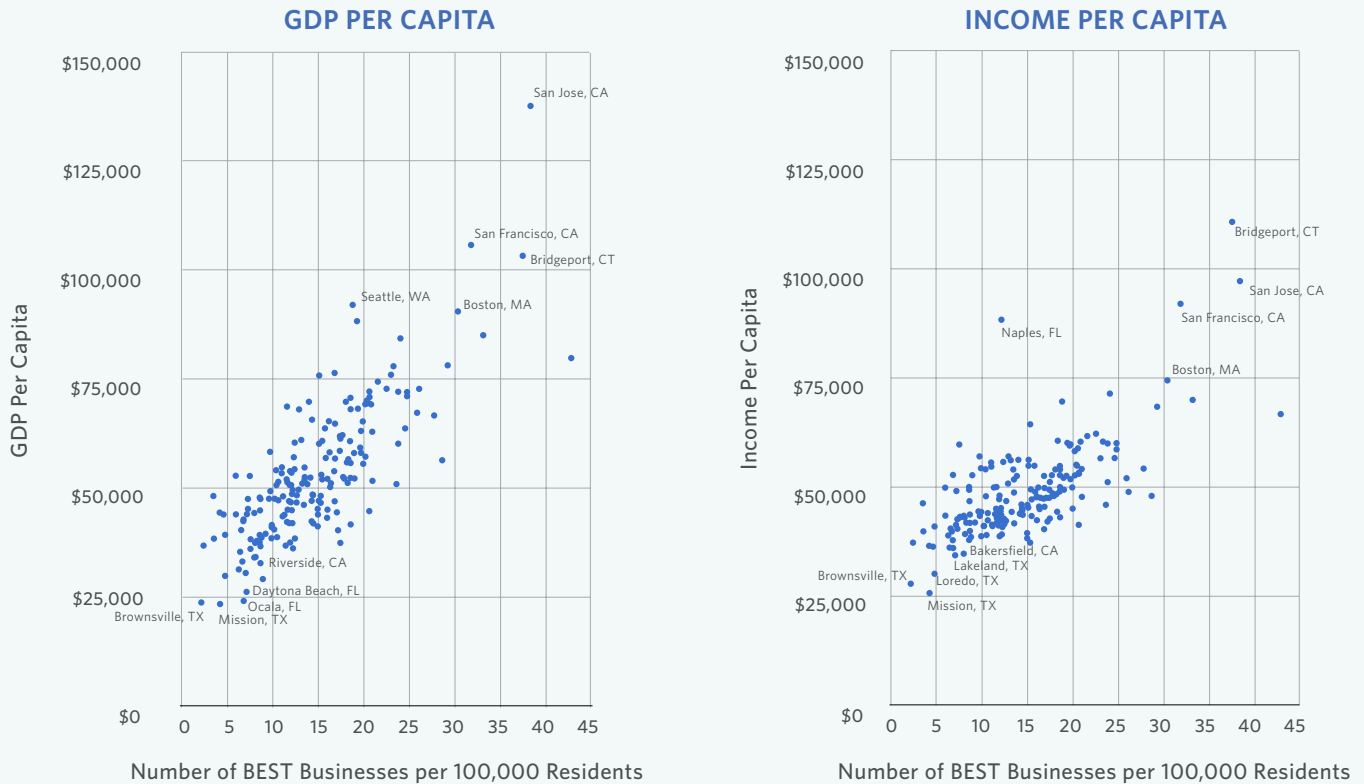
† These big companies are also referred to as “scaleups” in other articles and reports.

‡ The development of productive entrepreneurship networks will be explored further in the upcoming Endeavor Insight paper, “How Do Productive Entrepreneurship Communities Form in Cities?”

¶ The full list of super-productive sectors can be found in Appendix 2.

## THE BEST BUSINESSES AND ECONOMIC PERFORMANCE: MAJOR METROPOLITAN AREAS

Cities that generate more of the BEST businesses have greater productivity and higher incomes.



Note: The  $R^2$  for the model on the left is 0.63, while the  $R^2$  for the model on the right is 0.49. Major metropolitan areas are those with populations of 250,000 or more. GDP, income, and population data are based on 2017 figures. Data on the BEST businesses was collected on companies founded through 2017 as of July 2019. Source: Endeavor Insight analysis, U.S. Census Bureau, U.S. Bureau of Economic Analysis, and Dun & Bradstreet.

### BIG, ENTREPRENEURIAL, SUPER-PRODUCTIVE, TECH-ENABLED (BEST) BUSINESSES ARE SOME OF THE MOST IMPORTANT ASSETS A CITY CAN HAVE.

Companies that possess all four traits are powerful engines of economic growth. The relationship between cities with a greater proportion of the BEST businesses and economic outcomes is quite strong, as the charts above illustrate.

Metros with the highest GDP per capita are very effective at “growing their own” BEST businesses. Poorer communities generate a much smaller number of these companies, even when adjusting for differences in the sizes of local populations.

National data indicates that the number of BEST businesses per 100,000 residents accounts for 63 percent of the variation in GDP per capita and 49 percent of the variation in income per capita among major

U.S. cities.<sup>18</sup> The explanatory power of the BEST businesses is especially impressive when compared to other potential drivers of local economic growth. Even well-known factors — such as research and development spending, patent filings, and venture capital investment — can each explain a much smaller percentage of the variation in GDP per capita and income per capita levels among metro areas.\*

\* For more information, see the first Endeavor Insight report in this series, “Identifying the BEST Businesses for Local Economic Development,” which can be found at [endeavor.org/best-1](https://endeavor.org/best-1).





### THE BEST BUSINESSES ARE THRIVING IN MIDDLE AMERICA.

Many of the most common BEST businesses operate in software, specialty manufacturing, or professional services industries.<sup>19</sup> The BEST businesses in each of these sectors are not only very common in Middle American cities, but exemplify how meaningful they can be to local economic development.

#### Software-based companies located outside of coastal hubs are extremely successful.

Software companies in Middle American cities attract substantial capital to their hometowns and spur further entrepreneurial activity in the local community. Chicago, for example, is home to several “unicorns,” companies valued at more than a billion dollars. This includes **Grubhub**, a food delivery app, that went public in 2014 and was valued at over \$2 billion at the time, and **Orbitz**, an online travel booking platform was bought by Expedia in 2015 for \$1.6 billion. Both companies were led by entrepreneurs who went on to found other startups that have secured Series A funding.<sup>20</sup>

Large exits are not limited to Chicago. In 2017, **CoverMyMeds**, a healthcare platform headquartered in Columbus, Ohio sold for

\$1.1 billion, which was the largest exit in the state’s history.<sup>21</sup> Cofounder Matt Scantland, a Columbus native, says the entrepreneurial landscape has changed. The city was once known for hosting satellite offices of large corporations, but now holds more promise for entrepreneurs. In an interview with *Inc.* he says, “Growing up, the super ambitious people either ended up working on Wall Street, or a big technology consulting firm. Now, the brightest and biggest achievers at Ohio State either want to be entrepreneurs, or they want to work for a startup.”<sup>22</sup>

Other notable exits include software-as-a-service companies like **SendGrid**, an email platform company in Denver, Colorado that was acquired by Twilio in 2018 for \$2 billion and **Sezzle**, a payment platform headquartered in Minneapolis, Minnesota that raised \$43.6 million at its IPO in June 2019.\*

While tech hubs on the coasts are used as a common benchmark, it is unhelpful to make direct comparisons to Silicon Valley or cities like New York City. Even a single exit can make a significant difference to a Middle American city, and not just because of the jobs that are created or the wealth it generates. Once the first exit occurs, it gives confidence to other investors and signals to them that they should pay attention to similar scaling companies in that city.

#### Advanced manufacturing companies that harness innovation propel local dynamism.

Manufacturing companies founded more recently affirm a city’s local dynamism and help pave the way for more new companies. Within manufacturing, it is the new companies that are transforming traditional processes that have the most potential to grow large. Certain manufacturing subsectors have a higher proportion of these companies founded in the last decade. These are primarily found in advanced manufacturing industries such as pharmaceutical and aerospace equipment manufacturing.

Region’s like Dallas-Fort Worth, Texas that are supported by government and university investments have seen a surge of activity in pharmaceutical manufacturing in the last 10 years. **ZS Pharma**, a biopharmaceutical company, was founded in Dallas in 2008 and acquired by AstraZeneca in 2015 for \$2.7 billion. The company received \$2 million from the state to further develop and commercialize its technology that treats liver and kidney disease.<sup>23</sup> Al Guillem and cofounder Jeff Keyser initially moved to the region because of Tech Fort Worth, which was run by a pharmaceutical executive. The incubator, located just west of Dallas, had an established relationship with the University of North Texas Health Science Center.<sup>24</sup>

\* Unless otherwise cited, company data was sourced from the respective companies’ websites, LinkedIn, and Crunchbase.





A second local company, **Peloton Therapeutics**, began at the University of Texas Southwestern and was acquired in May 2019 by major drug company Merck in a deal that reportedly totaled up to \$2.2 billion. The Dallas-based cancer treatment company was founded in 2011 and received a grant of \$11 million from the Cancer Prevention Research Institute of Texas, a state agency.<sup>25</sup>

Minneapolis, Minnesota is another hub for advanced manufacturing activity in the health care sector. There are a number of medical device manufacturers that have continued to build on the area's pioneering entrepreneurs of decades ago and have grown out of the advancements coming from the University of Minnesota. Recent examples of newer companies include **NxThera**, maker of a device that treats endourological conditions and **Nuvaira**, which develops devices for treating lung diseases.

Another highly dynamic subsector is the aerospace industry. Several drone companies have successfully raised venture capital and grown quickly. Middle American examples include **SkySpecs**, an automated drone inspection company serving the wind farm industry, that was founded in 2012. This Ann Arbor-based firm employs more than 50 people and has raised \$11.5 million in funding. Utah-based

**Fortem Technologies** was founded in 2016 and manufactures drones and radar guidance systems. It employs nearly 100 people and has raised \$21.6 million.

**High-value research and consulting companies are fast growing and far reaching.**

Entrepreneurial professional services companies that serve other businesses can grow rapidly as they diversify their offerings and expand their operations to serve customers in other markets. **Insight Sourcing Group**, for example, has been recognized by the *Inc. 5000* list as one of America's fastest growing companies for 11 years in a row, having posted a three-year sales growth of 98 percent in 2017.<sup>26</sup> Since its founding in 2002, the Atlanta, Georgia-based management consulting firm has specialized in helping businesses in a range of sectors to streamline procurement processes and save on sourcing materials. In 2012, they commercialized a new service called SpendHQ, a digital platform for spend analysis.<sup>27</sup>

Margaret "Peg" Stessman founded **Strategic Health Solutions** in 2005. It provides monitoring and compliance services to private and government medical and insurance providers. This Omaha, Nebraska-based consulting firm has been recognized for its fast growth, working to

diversify its offerings to include training and education courses and add an east coast office.

**Pinnacle Group**, founded by Nina Vaca, is a Dallas, Texas-based IT staffing and consulting company that also exemplifies the rapid growth that is possible among professional services firms. She grew her company from a one-woman firm to a national business in 2007, and in a single year, it expanded operations from 5 states to 49.<sup>28</sup> Pinnacle Group has appeared on the *Inc. 500/5000* list of fastest-growing companies 13 times.<sup>29</sup> It now employs over 600 people across six international locations.<sup>30</sup>

Marketing agencies are another type of professional service company that can scale rapidly. **InMoment**, a customer analytics firm, is based in Salt Lake City, Utah and specializes in cloud-based customer experience optimization and retention. Founded in 2002 by John Sperry, Kurt Williams, and Richard Hanks, the company went on to acquire a major competitor, doubling in size.<sup>31</sup> After that, it moved into an expanded headquarters space and now employs more than 300 people across seven offices. Its client roster includes Nike, Starbucks, Tiffany & Co., and General Motors.

## RECOMMENDATIONS:

# DECISION MAKERS SHOULD DEDICATE MORE SUPPORT TO THE BEST BUSINESSES IN MIDDLE AMERICA.

### THERE IS VALUE IN DEVELOPING A STRATEGY TO SUPPORT THE BEST BUSINESSES.

In order for Middle American cities to capture the benefits that big, entrepreneurial, super-productive, tech-enabled (BEST) businesses offer, decision makers must create strategies to achieve two objectives.

- **Objective 1: Increase the number of the BEST businesses.**  
There are numerous entrepreneurial businesses working in super-productive industries with tech-enabled operations that have been founded in recent years and have not yet scaled their operations. If leaders in each Middle American city empower even just a few of these younger companies in their hometowns to grow to at least 50 employees, it would make meaningful increases to their local GDP.
- **Objective 2: Support the BEST businesses that already exist as they continue to grow.**  
The average number of employees at the BEST businesses is more than 400, which indicates that the majority of the job growth at these companies comes after they reach 50 employees.<sup>32</sup> Helping the BEST businesses continue to grow to 100, 200, or even 1,000 employees would create large numbers of high-paying jobs.

### LOCAL LEADERS SHOULD TAKE COORDINATED ACTION TO SUPPORT THEIR BEST BUSINESSES.

Endeavor Insight has developed a set of principles for local decision makers wishing to support the BEST businesses. The principles were developed through previous work with partners including the Bill and Melinda Gates Foundation, the Ewing Marion Kauffman Foundation, and Knight Foundation. They stem from the “Entrepreneur-Led Economic Development” framework designed to help leaders across the world increase the productivity of local entrepreneurs.\* This approach is also based on lessons learned from other U.S. communities that have established multicity efforts to further the development of their BEST businesses.<sup>†</sup>

#### 1. Identify the BEST businesses that make up local competitive advantages in entrepreneurship.

Middle American cities are home to hundreds of the BEST businesses. In making decisions about economic development resources, city leaders should focus on subsets of the BEST businesses that give their city a competitive edge.

This can be accomplished by identifying the groups of the BEST businesses that meet certain criteria. If the city has a greater proportion of the BEST businesses operating in the same industry than the proportion found in the rest of the United

States, it is an indication of high **local concentration**. City leaders should identify what makes these groups distinctive for clues about further bolstering their growth. Oftentimes, a city develops groups of companies in specific subsectors that are linked to the area’s distinctive resources (e.g., natural resources or geographic location), or more of the BEST businesses emerge after a single local business achieves astonishing success.<sup>33</sup>

A city’s competitive advantages in entrepreneurship are also based on **local dynamism**. Decision makers should identify their BEST businesses that were founded within the last 10 years, as it is an indication that local conditions are suitable for supporting even more of these types of companies. Unfortunately, many of the BEST businesses found in Middle American cities were started several decades ago. While these older companies can be important to the local economy if they continue substantial growth over time, newer companies are still needed to diversify and expand the economy into the future.

Put together, these highly concentrated and dynamic groups of the BEST businesses make up a city’s competitive advantages in entrepreneurship. It is important to note that these businesses, in total, will make up a very small proportion of the local entrepreneurial community.

\* For more information see the Endeavor Insight report “Fostering Productive Entrepreneurship Communities” available at [endeavor.org/fpec](https://endeavor.org/fpec).

† An example of this comes from the Southeast Michigan region encompassing Ann Arbor and Detroit. See the Endeavor Insight report “Southeast Michigan’s Competitive Advantages in Entrepreneurship” available at [endeavor.org/semi-cae](https://endeavor.org/semi-cae).



Decision makers should, therefore, avoid “the myth of quantity” that tends to inform traditional economic development strategies. Rather than focusing solely on the large number of startups in a city, decision makers should dedicate the most attention to the growth of the companies in this small segment that represents the community’s strongest entrepreneurial potential.

## **2. Align resources to the needs of the founders leading the BEST businesses.**

Government officials and local decision makers should prioritize addressing the challenges identified by founders of the BEST businesses, since these challenges are often different from those experienced by smaller and less productive companies. Previous research conducted by Endeavor Insight has studied common barriers among scaling companies, which include recruiting and retaining skilled technical and managerial talent, expanding into new markets, and securing venture capital.<sup>34</sup>

In addition, many challenges are specific to the industries in which the BEST businesses operate. Industry-specific steps that many founders find difficult, such as moving into larger manufacturing facilities or managing operations across state or country borders, are key to growing larger.

Middle American cities are not resource poor. Luckily, decision makers can utilize a range of resources to help founders address these needs. As the previous sections demonstrate, Middle America is a generator of top talent and is poised to cultivate a tech-savvy workforce, the geography allows companies to reach both direct-to-consumer and business-to-business markets, and access to capital is on the rise. Going forward, decision makers should leverage these resources as they tailor support programs and policies to better suit their BEST businesses.

## **3. Act regionally to broaden the support available to the BEST businesses.**

Middle American cities that work alone limit their BEST businesses’ opportunity for growth. A single city has only finite resources to meet founder needs. It could be the case that there is a workforce development program in place but no prominent university with large numbers of STEM graduates, or existing services facilitate connections with venture capital from elsewhere, but there are no local investors or mentors who can guide founders with knowledge specific to their home context.

Major Middle American communities also tend to be notably smaller in population than their peers on the coasts, further constraining their potential to substantially increase productivity on their own. Smaller cities are likely to have fewer BEST businesses and shorter lists of industries that make up their competitive advantages in entrepreneurship.

Middle American communities should coordinate with their neighboring metro areas to compete nationally and globally. When taking stock of resources in cities throughout an entire region, leaders are likely to identify even more opportunities that can help their BEST businesses grow. When there is overlap in competitive advantages with nearby communities, there are increased possibilities to build more productive entrepreneurship communities.

Decision makers can do this by working with their counterparts in nearby cities to build up complementary resources and lower barriers that affect entrepreneurs throughout the region as a whole. Support organizations should work to foster connections between the BEST entrepreneurs across multiple cities to advance the region’s capacity for local mentorship and investment.





# COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP

A CASE STUDY OF THE  
CINCINNATI-INDIANAPOLIS-LOUISVILLE REGION



# CINCINNATI, INDIANAPOLIS, AND LOUISVILLE NEED TO OVERCOME PERSISTING ECONOMIC CHALLENGES AND BOOST PRODUCTIVITY.

The combined Cincinnati-Indianapolis-Louisville area provides a useful example for Middle American cities wishing to take a regional approach to economic development. The three cities have persisting economic challenges, but are fortunate to have highly complementary entrepreneurial strengths. This section demonstrates how leaders in Middle American metros can work with neighboring cities to support the BEST businesses throughout an entire region.

## THE REGION'S ECONOMY HAS IMPROVED, BUT ITS PRODUCTIVITY LAGS BEHIND TYPICAL U.S. CITIES.

The combined Cincinnati-Indianapolis-Louisville metropolitan area would have a population of 5.5 million, equivalent to the 10th largest in the country and the 5th largest among Middle American metros.

Since 2008, the population grew steadily across the region (7 percent), but not as swiftly as the average seen in a typical major U.S. city (8 percent), as the chart below illustrates.<sup>35</sup>

On the whole, the local economy in the Cincinnati-Indianapolis-Louisville region has improved since the 2008 financial crisis. GDP per capita, a key metric of productivity, rebounded by 2014 and increased 4 percent across the region by 2018. The rate was slower than the 6 percent increase seen in major U.S. cities on average, and is significantly slower than the most productive cities in the country.

Among the three cities, the most significant gains occurred in Cincinnati (8 percent). The recovery has been slower in Indianapolis where GDP per capita has remained essentially static since

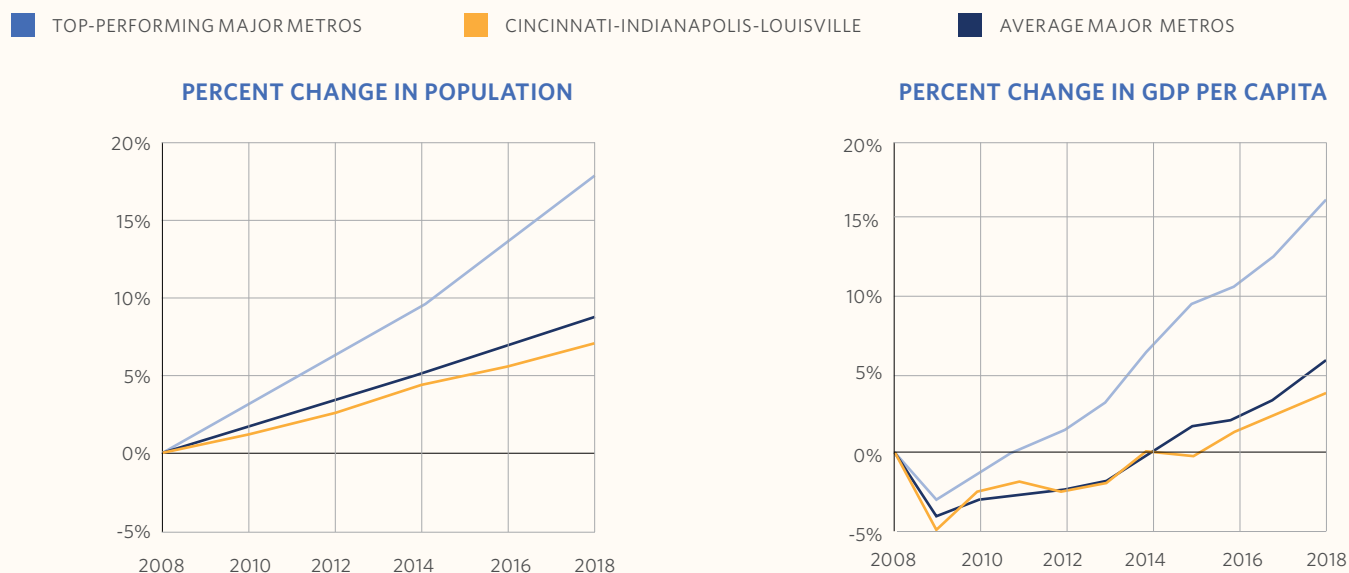
2014.<sup>36</sup> The region will need to boost productivity to not fall further behind.

## ECONOMIC CHALLENGES REMAIN DESPITE RECENT MOMENTUM.

The region is home to several companies that have generated significant economic value over the last 10 years. Among them are **ExactTarget**, an email marketing software company in Indianapolis that was acquired by Salesforce for \$2.5 billion in 2013, and **dotloop**, a Cincinnati-based real estate transaction management platform that was bought by Zillow for \$108 million in 2015. **Apellis Pharmaceuticals** in Greater Louisville went public in 2017 and has raised more than \$168 million in capital. Louisville is also home to **Zirmed**, a revenue management platform for healthcare businesses, that was sold to Bain Capital for \$750 million.<sup>37</sup>

## REGIONAL ECONOMIC PERFORMANCE

Indexed to 2008 and adjusted for inflation.

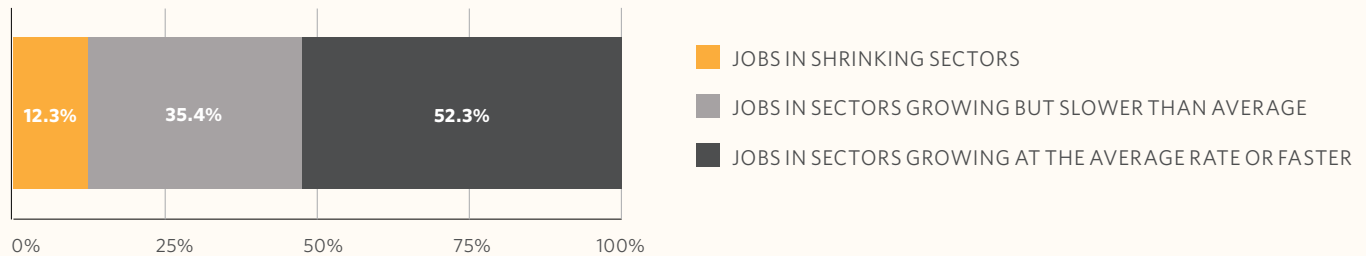


Note: Analysis based on U.S. metros with 250,000 or more in population. "Top-Performing" cities are those in the top third of population or GDP per capita growth, respectively. Cincinnati-Indianapolis-Louisville represents the weighted average among those metro areas. Source: Endeavor Insight Analysis; U.S. Bureau of Economic Analysis.

\* The estimated 2018 populations for the respective metropolitan areas are: Cincinnati, OH-KY-IN (2.2 million); Indianapolis-Carmel-Anderson, IN (2 million); Louisville/Jefferson County, KY-IN (1.3 million). Source: U.S. Census Bureau midyear population estimates, 2018. Released 14 Nov. 2019.

## LOCAL EMPLOYMENT IN INDUSTRIES PROJECTED TO SHRINK

Percentage of total private sector jobs.



Note: Average rate is based on projected employment growth of 5 percent over the next eight years.  
Source: U.S. Bureau of Economic Analysis, Endeavor Insight Analysis.

In addition, the region has seen an overall increase in venture capital investment in recent years. Together, companies in the three cities have raised more than \$1.4 billion in venture capital from 289 deals in the last five years. This is up from \$939 million across 224 deals in the previous five years.<sup>38</sup>

Despite these positive examples, there are still economic challenges. The average poverty rate is more than 12 percent across the region. This is higher than the rate seen in 84 other Middle American cities. Furthermore, nearly half of the region's workers are in sectors expected to shrink or grow more slowly

than average over the next few years. This is a much larger share than what is expected nationally (41 percent). With technological disruptions and changes in the nature of work, the region will be unable to rely on sources of past economic growth and needs new strategies to generate jobs in growing sectors.<sup>39</sup>

## TRADITIONAL ECONOMIC DEVELOPMENT STRATEGIES ALONE WILL NOT BE ENOUGH TO IMPROVE THE REGION'S PRODUCTIVITY.

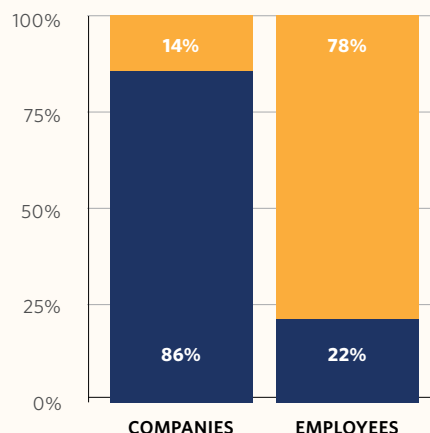
Many of the current economic development strategies that cities often rely on will not be enough to boost productivity and increase job growth.

**Small Businesses.** Small businesses with fewer than 50 employees are prevalent in the region, but they are responsible for generating only a small proportion of jobs. They make up 86 percent of total

companies, but employ only 22 percent of people. In addition, national data suggests that small businesses pay significantly lower wages than larger firms.<sup>40</sup>

**Startups.** About half of new businesses in the Indianapolis-Cincinnati-Louisville region fail before reaching three years of operation. This is similar to rates of business failure seen across the United States. Most of the startups that do survive do not go on to employ more than a handful of people, which limits the economic value they can provide.<sup>41</sup>

**Corporate Attraction.** Policies that offer tax credits and other perks to corporations to open second offices and plants, or relocate their headquarters can be part of a comprehensive strategy, but the resulting impact is often too small to make these activities a primary pillar of local economic development. Critics note past examples where taxpayer spending on programs such as infrastructure improvements usually outweighs the returns from incentives for individual companies, especially on a cost-per-job basis.<sup>42</sup>



## PERCENTAGE OF COMPANIES AND EMPLOYMENT IN THE CINCINNATI-INDIANAPOLIS-LOUISVILLE REGION

Comparison by size class.

50+ EMPLOYEES 1-49 EMPLOYEES

Note: Data based on the combined figures for the Cincinnati, Indianapolis, and Louisville metro areas.  
Source: Endeavor Insight analysis; U.S. Census Bureau, Business Dynamics Statistics.

# THE REGION HAS OPPORTUNITIES TO CAPITALIZE ON ITS LOCAL ASSETS.

## ENTREPRENEURSHIP BUILT THE ECONOMIES OF CINCINNATI, INDIANAPOLIS, AND LOUISVILLE.

Entrepreneurial activity in the region can be traced back more than a century to founders like William **Procter** and James **Gamble**. What began as a soap and candle company in 1837 has now grown into a multinational consumer packaged goods company with headquarters in Cincinnati that still bears their names. Colonel **Eli Lilly** founded his Indianapolis-based pharmaceuticals company in 1876. The firm now employs more than 33,000 people worldwide. Bernard H. Kroger and B.A. Branagan launched a tea company in 1883 that evolved into **Kroger**, one of today's largest supermarket chains in the United States. All of these companies have gone on to spur entrepreneurial businesses in similar and supporting industries.

More recent successful founders have not only made incredible local contributions to the economy, but also demonstrate how entrepreneurs reinvest in local communities. This includes David A. Jones, Sr. and his business partner Wendell Cherry, who built their first nursing home in Kentucky in 1961. Over the next decades they build or acquired hospitals, and took on **Humana** as their new name. Eventually they transformed the business into the health care and insurance giant it is today with headquarters in Louisville.<sup>43</sup> Along the way, Jones also made significant philanthropic contributions to improve the area's parks and public education systems.

More recently, new businesses have come out of the area's many anchor institutions such as the local research universities and hospitals. There are also new businesses coming to the area, such as fulfillment centers and restaurant chains.\* Although these fall outside the scope of the BEST framework, they have inspired local entrepreneurs to create manufacturing and tech-enabled business-to-business services companies that are extremely valuable to the economy and will continue to be avenues for further growth.

## CURRENT EFFORTS ARE POISED TO SUPPORT THE REGION'S MOST VALUABLE ENTREPRENEURS.

Local efforts are already underway to build the region's workforce in ways that can serve entrepreneurial companies. This is especially true around developing talent with technological skills. Intermediaries such as **Techpoint** in Indianapolis are creating bridges between universities and companies. They work with college students and graduates to connect them with local companies that need highly skilled talent. Companies from outside the region are also recognizing the burgeoning opportunities in the region and making investments. **Microsoft** has formed a partnership with the city of Louisville to offer digital literacy and workforce training, and to make it a regional artificial intelligence hub.<sup>44</sup>

Local entrepreneurship support organizations are paving the way for the next phase of the region's development.

In Cincinnati, organizations like **Cintrifuse**, **CincyTech**, and the **Brandery** offer local companies investment capital, connections with venture capital investors from outside the area, and other support including office space.

**Elevate Ventures** in Indiana offers local startups guidance and connections with fund managers and angel groups across the state. **Access Ventures** in Louisville is addressing access to capital barriers and making investments in enterprises that build more inclusive and creative economies, and **Endeavor Louisville** is operating regionally to support a network of entrepreneurs who run high-impact companies, connecting them with a range of services and a global network of mentors.

Going forward, decision makers should capitalize on these assets and utilize the lessons from the previous sections of this report to guide their efforts. The next pages provide analyses that are specific to the Cincinnati-Indianapolis-Louisville region with an eye toward informing city leaders as they support entrepreneurship across the entire region.

\* These types of companies tend to be outposts of corporations that have headquarters located elsewhere so are not considered entrepreneurial, or create jobs with lower levels of GDP per employee so are not considered super-productive.





# REGIONAL LEADERS SHOULD DEDICATE MORE SUPPORT FOR BIG, ENTREPRENEURIAL, SUPER-PRODUCTIVE, AND TECH-ENABLED COMPANIES.

Metropolitan areas with the greatest productivity and highest income all share a common trait. They generate more of the important businesses described in the previous section of this report — those that are big, entrepreneurial, super-productive, and tech-enabled (BEST).

The Cincinnati-Indianapolis-Louisville region is home to quite a few of these BEST businesses. The combined region has nearly 19 such companies for every 100,000 residents. This relatively high number places the region in the top quartile of major Middle American metropolitan areas.<sup>45</sup>

Decision makers should focus on the BEST businesses because of their strong relationship to GDP per capita and income per capita. See pages 8-10 for further details.

## THE REGION IS CONTINUING TO PRODUCE THE BEST BUSINESSES.

The Cincinnati-Indianapolis-Louisville region has generated a greater proportion of the BEST businesses in the last 10 years compared to other major Middle American metropolitan areas. This local dynamism is an indication that entrepreneurs are finding footholds as they launch new companies in

super-productive industries and create jobs, especially through tech-enabled advancements.

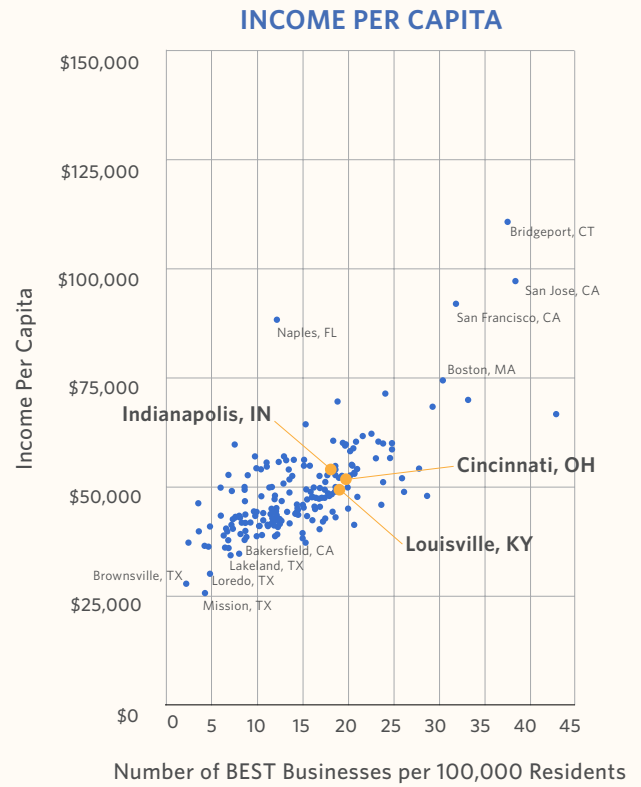
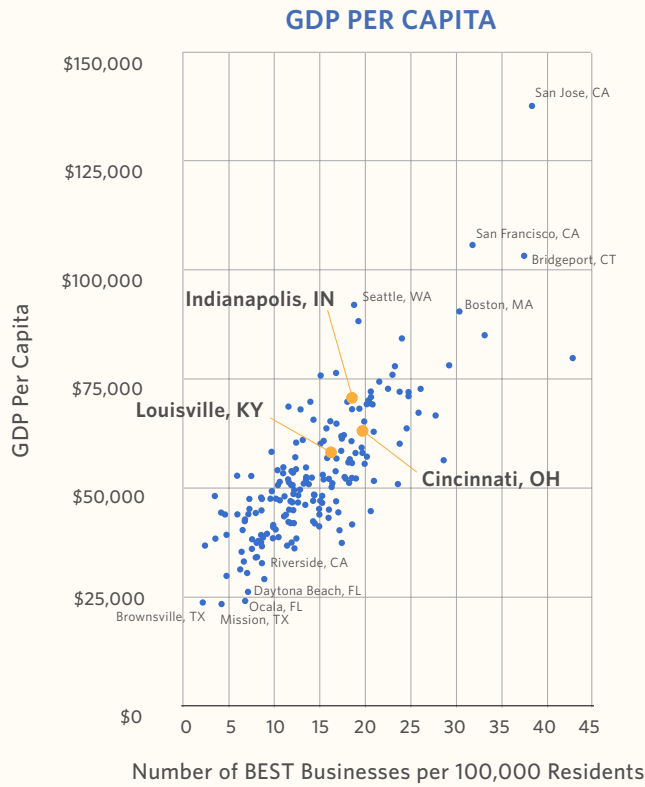
Across the United States, the cities with the highest dynamism are those where nearly 17 percent of their BEST businesses were founded in the last 10 years. While Cincinnati, Indianapolis, and Louisville have an average 15.5 percent, this is marginally better than the average among major Middle American cities. The region's local dynamism is a signal that it has the capability to generate even more in the next few years.<sup>46</sup>





## THE BEST BUSINESSES AND ECONOMIC PERFORMANCE: MAJOR METROPOLITAN AREAS

Cities that generate more of the BEST businesses have greater productivity and higher incomes.



Note: The  $R^2$  for the model on the left is 0.63, while the  $R^2$  for the model on the right is 0.49. Major metropolitan areas are those with populations of 250,000 or more. GDP, income, and population data are based on 2017 figures. Data on the BEST businesses was collected on companies founded through 2017 as of July 2019.

Source: Endeavor Insight analysis, U.S. Census Bureau, U.S. Bureau of Economic Analysis, and Dun & Bradstreet.



# CINCINNATI, INDIANAPOLIS, AND LOUISVILLE HAVE COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP THAT CAN BE FOUND IN EIGHT TYPES OF COMPANIES.

In order to take advantage of the benefits provided by the BEST businesses, decision makers must create strategies that achieve two objectives: (1) increase the number of the region's BEST businesses, and (2) support the region's existing BEST businesses as they continue to grow. To help local leaders to fulfill these objectives, Endeavor Insight applied the lessons from the main report and analyzed new data on more than 30,000 local BEST businesses.

## RECOMMENDATION 1 IN ACTION:

**Identify the BEST businesses that make up local competitive advantages in entrepreneurship.**

Competitive advantages in entrepreneurship can be found in each of the respective cities by identifying the groups of big, entrepreneurial, super-productive, and tech-enabled companies that meet two criteria: the **local concentration** of the BEST businesses in a given city is greater than the proportion found in the rest of the United States; and the **local dynamism** of those businesses can be confirmed by identifying at least one local example of these BEST businesses founded in the last decade.

The eight types of companies that make up the cities' competitive advantages in entrepreneurship are:

- Consulting Firms
- Software Companies
- Advanced Manufacturing Businesses
- Financial Services Firms
- Advertising Agencies
- Food and Beverage Manufacturing Companies
- Packaged Goods Manufacturing Companies
- Pharmaceuticals and Medical Device Manufacturing Businesses

As the table below illustrates, most of these groups of companies operate in industries that are expected to grow over the next several years, according to national projections. Several are also creating a significant number of jobs in STEM occupations. This points to the importance of tech-enabled companies in the area, including those outside the software industry.

## CONCENTRATED AND DYNAMIC GROUPS OF THE BEST BUSINESSES

In Cincinnati, Indianapolis, and Louisville

Industry Hub	Number of BEST Businesses in Region	Strength in Greater Cincinnati	Strength in Greater Indianapolis	Strength in Greater Louisville	Projected National Growth	Proportion of Workers in STEM Occupations
Consulting Firms	50+	<b>Existing</b>	<b>Existing</b>	<b>Existing</b>	High	Above Average
Software Companies	30+	Emerging	<b>Existing</b>	Emerging	High	Above Average
Advanced Manufacturing Businesses	30+	<b>Existing</b>	<b>Existing</b>	Emerging	Negative	Above Average
Financial Services Firms	20+	<b>Existing</b>	Emerging	Emerging	Slow But Positive	Below Average
Advertising Agencies	15+	<b>Existing</b>	---	<b>Existing</b>	Slow But Positive	Average
Food and Beverage Manufacturing Companies	10+	Emerging	---	<b>Existing</b>	Slow But Positive	Below Average
Packaged Goods Manufacturing Companies	10+	<b>Existing</b>	Emerging	---	Negative	Above Average
Pharmaceutical and Medical Device Manufacturing Businesses	10+	<b>Existing</b>	Emerging	Emerging	Slow But Positive	Above Average

Note: Projected national growth is the expected employment growth for industries over the next eight years. Average proportion of workers in STEM occupations is based on the average across all industries. The list of industries based on the North American Industry Classification System (NAICS) is available in Appendix 2. Source: Endeavor Insight analysis; Dun & Bradstreet; U.S. Census Bureau; U.S. Department of Labor Statistics; U.S. Bureau of Economic Analysis.

**RECOMMENDATION 2 IN ACTION:**  
**Align resources to the needs of the founders leading the BEST businesses.**

The BEST businesses that make up the region's combined competitive advantages in entrepreneurship are concentrated in Cincinnati, Indianapolis, or Louisville. Industries that are existing strengths in a city have a high concentration of local BEST businesses and meet the dynamism criteria above. Industries that are emerging strengths in a city do not have as high a local concentration, but their smaller group of the BEST businesses are made up of at least two that were founded in the last decade.

It will be important for city leaders to understand the specific opportunities that each group of companies offer and better tailor initiatives to support the needs of entrepreneurs operating in the respective industries. The following pages share in-depth details on each of the eight types of the region's BEST businesses that make up the region's competitive advantages in entrepreneurship. This includes examples of local founders who

have built these types of companies and analyses on the local concentration and subsectors in individual cities. The next section also shares information on the national projected employment growth and common employment opportunities that these types of companies provide.

**RECOMMENDATION 3 IN ACTION:**  
**Act regionally to broaden the support available to the BEST businesses.**

The analysis of the area's BEST businesses revealed that the cities of Cincinnati, Indianapolis, and Louisville are fortunate to have a high level of overlap with their neighbors. When considering individual cities, Louisville or Indianapolis have only a handful of existing strengths. By taking a regional approach to building their emerging strengths, those city leaders have many more opportunities. Louisville can look to Indianapolis to build connections with software entrepreneurs, while Indianapolis can look to Cincinnati for resources to assist packaged goods manufacturing companies. Previous Endeavor Insight research outlines that fostering a productive

network where successful entrepreneurs are highly connected to upcoming founders measurably improves productivity.<sup>47</sup> Even though Cincinnati has several existing strengths, the founders operating in emerging industries can benefit from this network effect as they increase their level of connectivity.

The local support organizations could be doing more to facilitate this exchange. Endeavor Insight identified more than 100 local organizations that provide support to entrepreneurs, including accelerators, incubators, coworking spaces, and networks. However, the vast majority of programs focus only on early stage companies. Fewer than 30 cater to the industries that make up the region's competitive advantages in entrepreneurship, and they are primarily focused on software. Decision makers should work to dedicate more resources to ensure that the BEST businesses throughout the region are getting the support they need to contribute even more to the local economy.

**COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP: EXISTING AND EMERGING STRENGTHS**

In Cincinnati, Indianapolis, and Louisville

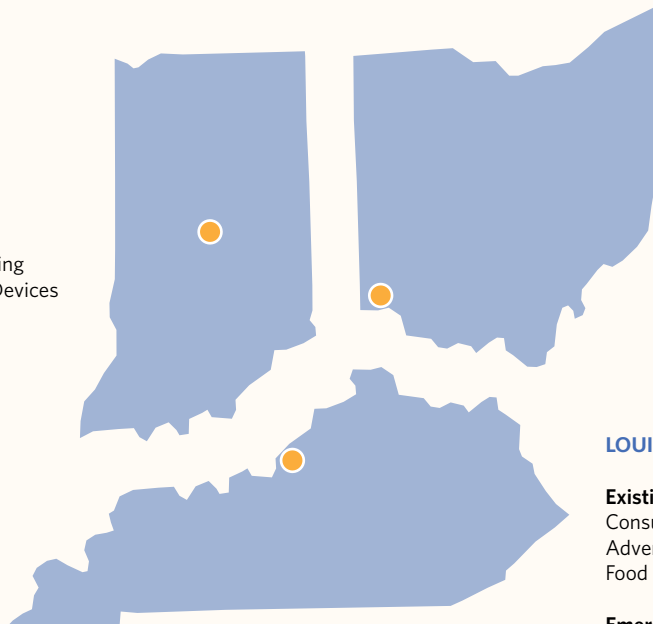
**INDIANAPOLIS**

**Existing**

Consulting  
Software  
Advanced Manufacturing

**Emerging**

Financial Services  
Packaged Goods Manufacturing  
Pharmaceuticals & Medical Devices



**CINCINNATI**

**Existing**

Consulting  
Advanced Manufacturing  
Financial Services  
Advertising  
Packaged Goods Manufacturing  
Pharmaceuticals & Medical Devices

**Emerging**

Software  
Food and Beverage Manufacturing

**LOUISVILLE**

**Existing**

Consulting  
Advertising  
Food and Beverage Manufacturing

**Emerging**

Software  
Advanced Manufacturing  
Financial Services  
Pharmaceuticals & Medical Devices

# CONSULTING FIRMS

Businesses that provide teams of consultants in areas such as business management, information technology, human resources, and research

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

50+	20+	20+	10+
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	Human Resources, Healthcare Management Consulting, Market Research	1.3x
Greater Indianapolis	Logistics Management, Operations/ Quality Management, IT Consulting	1.2x
Greater Louisville	IT Consulting, Specialty B2B Professional Services	1.1x

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

High

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor's Degree:** Below Average (41 percent)

*Common Occupations:* Customer Service Representatives, Sales Representatives, Administrative Assistants, Bookkeepers, Computer Support Specialists

**Proportion of Roles Requiring a Bachelor's Degree or Higher:** Above Average (59 percent)

*Common Occupations:* Management Analysts, Market Research Analysts, Software Developers, Business Operations Specialists, Accountants, Computer and Information Analysts, Scientists

**Proportion of STEM Occupations:** Above Average (24 percent)

*Common STEM Occupations:* Information Systems Managers, Technical Sales Representatives, Operations Research Analysts, Research Scientists, Web Developers



## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP: CINCINNATI-INDIANAPOLIS-LOUISVILLE

Endeavor Insight identified that Cincinnati, Indianapolis, and Louisville each have the BEST consulting firms as an existing strength. In their own right, each city has a higher concentration of entrepreneurially led consulting firms than the rest of the country when adjusting for population size. In Cincinnati, for example, there are 1.3 times as many of these firms than elsewhere in the United States. Each city also has local dynamism among the BEST consulting firms confirmed by at least one that was founded in the last 10 years.

Groups of the BEST consulting firms operate in different subsectors, often reflecting distinctive traits in each city. This can be seen in consulting firms that support the healthcare industry in Cincinnati and logistics in Indianapolis, which are prominent industries in their respective cities. Put together, this makes the BEST consulting firms a robust competitive advantage in entrepreneurship for the entire region.

When considering the eight competitive advantages from a regional perspective, this is the only one that is an existing strength among all three cities. It is also by far the largest group with more than 50 entrepreneurial consulting firms in the region that have 50 or more employees. Decision makers should continue to build on this region-wide existing strength to take advantage of the industry's many benefits. Consulting firms pay average wages of \$83,500, well above the average wage of \$50,000 across all industries. Employment in this industry is expected to grow more than 14 percent from 2019 to 2028, which is one of the highest among the sectors highlighted in the report.

Decision makers can also look to the existing successful entrepreneurs who have grown local consulting firms for guidance on how to support the continued growth of the sector. An example of a local company is **BCforward** in Indianapolis. This firm

specializes in information technology consulting and staffing and was founded in 1998 by Justin P. Christian and Tony Bucher. It grew to more than 500 employees in its first decade and in the early 2010s, BCforward created a subsidiary called Stafforward in response to the growing demand for non-IT talent services, particularly in the industrial, healthcare, and scientific fields. In 2017, it acquired Entero an IT recruiting and human capital management firm, and is now Indiana's largest certified minority owned business.

The company now has more than 6,000 employees and a presence across 47 states, Canada, Europe and India. BCforward recently announced plans to create 300 new jobs and establish a new center devoted to digital skills training for its growing employee base. "We are a global company but our roots are here in Indiana and the most important investment we can make is in our people," said Justin Christian, founder and CEO in a press release about the expansion.

Stories like these demonstrate the capacity for growth in the local consulting sector, especially within information technology (IT). **V-Soft Consulting Group** is another example. The Louisville-based firm was founded in 1997 by Purna and Radhika Veer, and has acquired multiple companies. It employs more than 1,000 people, and has offices throughout the United States, plus locations in Canada and India.

**Callibrity** has also been recognized for growth. The company was founded in 2007 by Gary Howard and Mark Wehby in Cincinnati. It provides clients with custom application development, staff augmentation, and digital transformation services. With revenues of \$6.9 million in 2018 and a three-year growth of 252 percent, the company has been recognized by *Inc.* as one of the fastest-growing in the United States. After 10 years in operation, it opened a new Blue

Ash office in October 2017 and has plans to expand to Columbus, Ohio.

Other high-value consulting firms include **Finit Solutions** in Cincinnati, which specializes in tech-enabled financial management consulting, and **Stratosphere Quality** in Fishers, Indiana that offers quality assurance and outsourcing for manufacturing companies in the United States and internationally. These companies have more than 100 and 900 employees, respectively.

Across the region, the increase in new consulting firms over the last decade has been slower than the national average. Local leaders should take action to boost the rate of new consulting companies that can scale and support the continued growth of existing ones. In addition to listening to the successful entrepreneurs for guidance on how to do that, decision makers can focus on one area of particular importance to growing consulting firms: reducing the barriers they have to accessing corporate clients. Consulting firms are highly dependent on building relationships with clients in other states. While the region's central location means that local consulting firms can theoretically access most of the country's Fortune 500 companies within a three-hour flight, decision makers should coordinate to ensure that there are fewer physical and operational obstacles.

# SOFTWARE COMPANIES

Companies that develop and sell software, and provide custom digital products for business clients

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

30+	5+	15+	10+
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	---	---
Greater Indianapolis	Enterprise Software, SaaS	1.2x
Greater Louisville	---	---

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

High

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor's Degree:** Below Average (29 percent)

*Common Occupations:* Computer Support Specialists, Sales Representatives, Customer Service Representatives

**Proportion of Roles Requiring a Bachelor's Degree or Higher:** Above Average (71 percent)

*Common Occupations:* Software Developers, Programmers, Computer and Information Analysts, Database and Systems Administrators, Network Architects

**Proportion of STEM Occupations:** Above Average (62 percent)

*Common STEM Occupations:* Software Developers, Network Architects, Database Administrators, Information Security Analysts

## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP CINCINNATI-INDIANAPOLIS-LOUISVILLE

The BEST Software companies hold promise as a competitive advantage in entrepreneurship throughout the region. While these types of companies have only been identified as an existing strength in Indianapolis — with a concentration of 1.2 times higher than the proportion found in the rest of the United States — there are emerging sectors in both Cincinnati and Louisville. This demonstrates that geographies other than coastal tech hubs can generate groups of successful software companies, and the local momentum appears to be building. The local dynamism of software companies in each city is quite high, based on the number of new companies launched in the last decade. In fact, there are more companies being founded locally in the software sector than the other industries highlighted in the report.

One of the most prominent examples of how this sector has become a competitive advantage in the region comes from **ExactTarget** in Indianapolis that was acquired by Salesforce for \$2.5 billion in 2013. It was the largest-ever acquisition of an Indianapolis tech company and the biggest completed by the software as a service (SaaS) giant at the time. Scott Dorsey, Chris Baggott, and Peter McCormick founded ExactTarget in 2000. All three were first-time software entrepreneurs launching the company just after the dotcom bubble had burst. During its initial growth phase, the company provided a suite of on-demand email and SMS marketing software solutions directly to marketing departments, and its customers included Nike, Coca-Cola, and Gap. The company received its first venture round in 2004 and raised more than \$188 million before going public in 2012. At its height, the company employed 1,800 people.

ExactTarget's growth provides examples of how the regional context can impact local software companies and how successful entrepreneurs can become leaders in effecting positive change for the entire community. When the company started, Indianapolis airport did not have direct flights to San Francisco. As

the company became a larger employer, Scott Dorsey advocated for more flights. After the acquisition, Dorsey cofounded High Alpha, a venture capital and private equity firm that invests in and helps launch other enterprise cloud companies.

Other examples include **Angie's List**, an Indianapolis company that was an early eCommerce recommendation platform and now employs more than 1,000 people. **LISNR**, a retail payment system that uses ultrasonic data technology, was founded in Cincinnati by Rodney Williams and has raised \$30 million. **El Toro IP Targeting** provides advertisers with better customer targeting based on IP addresses. The company joined the Endeavor network in 2016 and is slated to expand its employee base and Louisville headquarters office in 2020.

**Venminder**, a company in Greater Louisville, offers vendor and third-party risk management software. It was founded by Dana Bowers, who also founded **iPay Technologies**. She grew iPay to one of the largest independent bill pay providers in the United States before selling it to Jack Henry & Associates. Venminder has also grown rapidly. It employs more than 100 people and has raised more than \$16 million. **Appriss** is another Louisville-based software company that offers data science services. It has raised significant venture capital from investors including Bain Capital since its founding in 1994. It now employs more than 400 people.

Other successful companies serve the area's established sectors. These software SaaS companies include **Greenlight Guru** in Indianapolis (medical device quality management), **QSR Automations** (restaurant management), as well as **ConnXus** (supply chain management), and **STACK** (construction management) in Cincinnati.

This sector is poised to create substantial value for the region and is worthy of further coordinated support. The software sector has the highest average wages of all the industries highlighted in the study at above \$107,000, more than double the national average. It also has the highest

national projected growth rate among the highlighted industries at 19.9 percent over the next 10 years. Aside from these national statistics, there are local indications of the ongoing value of this sector. A recent report on venture capital flowing to Indianapolis states that venture capital deals in Indiana for the first half of 2019 totaled \$151 million, which is more than half the overall total for 2018. The vast majority of these deals were with technology companies within the Greater Indianapolis region.<sup>48</sup>

Going forward, there are opportunities for local leaders to ensure the continued growth of the sector throughout the entire region. To date, software entrepreneurs have benefited from dedicated local support with more than a dozen support organizations that cater to the needs of tech-enabled businesses. Very few are equipped to provide dedicated support to companies beyond the idea or startup phase. City leaders should seek to provide tailored support to growing and more mature companies — those that can add the most jobs and generate the most economic value. The region's support organizations are also concentrated in Indianapolis, which underscores the importance of the city as a regional hub. This strength could be better leveraged to support software entrepreneurs in the other two cities.

Note: See Appendix 3 for notes and sources.



# ADVANCED MANUFACTURING BUSINESSES

Companies that use technology to improve products and the manufacturing processes.

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

30+	15+	10+	5+
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	Heavy Equipment, Industrial Machinery	2.0x
Greater Indianapolis	Specialty Fabrication, Industrial Machinery	1.4x
Greater Louisville	---	---

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

Negative

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor's Degree:** Above Average (79 percent)

*Common Occupations:* Assemblers and Fabricators, Machinists, Machine Setters, Metal Workers and Welders, Computer-controlled Machine Operators

**Proportion of Roles Requiring a Bachelor's Degree or Higher:** Below Average (21 percent)

*Common Occupations:* Mechanical Engineers, Business Operations Specialists, Supervisors of Production Workers, Computer Control Programmers

**Proportion of STEM Occupations:** Above Average (13 percent)

*Common STEM Occupations:* Industrial and Mechanical Engineers, Materials Engineers, Mechanical Technicians, Safety Inspectors

## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP CINCINNATI-INDIANAPOLIS-LOUISVILLE

The advanced manufacturing industry is made up of companies that have harnessed technology to improve their products and processes. The region has more than 30 such companies that have scaled to 50 or more employees. This is especially true in Cincinnati, where there are twice as many such companies than the rest of the United States when adjusting for differences in population.

One example of a company that has brought tech-enabled solutions to the manufacturing industry is the Mason, Ohio-based **Intelligrated**. It manufactures distribution and fulfillment equipment with a specialization in automation and intelligent warehouse execution software. Founded in 2001, the company grew rapidly from 17 to approximately 50 employees in its first year. It opened a new facility in London, Ohio in 2002 and made its first acquisition the same year, then grew to 500 employees by the end of 2008. Intelligrated went on to acquire two more companies before it was bought by Honeywell for \$1.5 billion in 2016. The company now has more than 2,000 employees and operates four plants in Ohio, Missouri and Kentucky.

Chris Cole cofounded the company with Jim McCarthy and they brought more than 60 years of combined experience in automated material handling. Prior to Intelligrated, Cole held executive positions with **Milacron**, a large Cincinnati-based manufacturer of custom plastic and processing equipment. Another example is **MXD Process** that was founded in 2010 by Mark Franco. MXD manufactures equipment for the liquid processing industry. The industry had been dominated by just a few major companies, which had outdated machinery and inefficient processes. MXD is positioning itself as a manufacturer of high-tech systems that can automate and optimize production for

its customers. Franco joined the Endeavor network in 2018 and the company now has approximately \$10 million in annual sales. It also has plans to expand to a new facility in Clark County, Ohio and create 40 new full-time positions.

These advanced manufacturing companies are building on the region's well-established group of specialty manufacturers. These include **Cummins**, an engine manufacturer headquartered in Greater Indianapolis and **Samtec**, an electronics connector manufacturer in Greater Louisville, that was founded by Sam Shine in 1976 and now employs more than 6,000 people.

**Applied Composites Engineering** (ACE) is an Indianapolis aerospace composite engineering and manufacturing company founded by Leigh Sargent in 1982. The company grew to approximately 100 employees by 2015 and was acquired by AC&A in 2017. Another Indianapolis firm, **Aerodyn** was founded in 2002 by Dave Lawrence and specializes in design and precision manufacturing for the aerospace, automotive, and power generation industries. It employs more than 130 people and has a global presence in five countries. In 2010, Aerodyn opened a new test facility in Whitestown, Indiana allowing it to expand its new product development and testing services.

The advanced manufacturing industry employs proportionately more people in STEM occupations than average and tends to pay above-average annual wages of about \$60,000. Specialized training and employment experience at successful companies is important for developing the right talent for this industry. Efforts to foster the talent pipeline in this sector should ensure that local institutions are providing sufficient programs to support future growth.

Although the industry as a whole is projected to shrink by as much as 4.9 percent over the next decade according to national data, the local companies that are developing tech-enabled advancements and specializing in distinctive fabrication will continue to have a competitive advantage. There are a few local incubators that indicate they support advanced manufacturing companies. On the whole, these may be ill-equipped to offer substantive help to the region's BEST advanced manufacturing companies that are more mature. City leaders should assess whether the existing programs are sufficiently addressing the needs of highly specialized and technical businesses that more often benefit from knowledgeable professionals as they secure sizable capital requirements or navigate later stages of business growth.



# FINANCIAL SERVICES FIRMS

Companies providing financial services including investment banking, fund management, credit intermediation, and payment processing

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

<b>20+</b>	<b>15+</b>	<b>&lt;5</b>	<b>&lt;5</b>
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	Lending and Financing, Payment Processing, Investments, Wealth Advisory	<b>1.4x</b>
Greater Indianapolis	---	---
Greater Louisville	---	---

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

Slow But Positive

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor's Degree:** Below Average (66 percent)

*Common Occupations:* Bookkeepers, Customer Services Representatives, Claims Adjusters, Sales Agents, Loan Interviewers

**Proportion of Roles Requiring a Bachelor's Degree or Higher:** Above Average (34 percent)

*Common Occupations:* Financial Advisors, Loan Officers, Financial Analysts, Accountants, Credit Counselors

**Proportion of STEM Occupations:** Below Average (5 percent)

*Common STEM Occupations:* Computer Programmers, Actuaries, Network Systems Administrators



## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP CINCINNATI-INDIANAPOLIS-LOUISVILLE

There are more than 1.4 times as many financial services firms in Cincinnati than found elsewhere in the United States when adjusting for differences in population. The financial services industry in the city can be traced back to 1858 with the establishment of **Fifth Third Bank**, which now employs more than 20,000 people. **Cincinnati Financial**, which was formed by four insurance agents in 1950, is another long-standing institution and is now among the largest public companies headquartered in the area.

Other super-productive entrepreneurial financial services firms across the region operate in subsectors beyond traditional banking and insurance, such as leasing and advisory services. **Summit Funding Group**, for example, is one of the largest independent corporate equipment leasing and financing companies in the country. The company manages more than \$1 billion in assets and has originated more than \$3 billion in equipment lease and finance transactions in its history. Rick Ross started the company along with investors in 1993. In 2012, the company expanded to a new facility in Mason, Ohio to accommodate more personnel. It now employs more than 70 people and has a presence in four other states.

In Louisville, **ARGI Financial Group** provides financial planning and investment management. Founded in 1995 by Rob Butt and Joe Reeves, it operates eight offices across the Midwest and employs more than 150 people. Brook Smith founded one

of the largest surety bonds companies in the country called Smith-Manus. He is now an active philanthropist in Louisville, supports local entrepreneurs, and serves as chair of the Endeavor Louisville board.

Within the last decade, the area has seen new financial services companies emerge including **Royal United Mortgage** founded by Craig Royal in Indianapolis, as well as venture capital firms that support growing entrepreneurial companies. This includes **Venture First** in Louisville, which was founded in 2009 by John Shumate, an Endeavor mentor, and **High Alpha** in Indianapolis that invests in enterprise cloud companies. High Alpha has raised more than \$100 million and is a prime example of how successful entrepreneurs can go on to offer their experience and make substantial reinvestments in a community. It was cofounded by a team that consists of former ExactTarget executives Scott Dorsey, Eric Tobias, and Mike Fitzgerald, as well as Kristian Anderson, a serial entrepreneur and design consultant.

The BEST financial services companies will continue to offer several benefits to the region. They have high average wages of \$127,000. This is by far the highest of all the sectors in the report. The industry also has positive projected growth in employment of up to 3.7 percent over the next decade, but this is lower than the average 5 percent projected for all industries.

Going forward, decision makers in Louisville and Indianapolis should look to Cincinnati as a source for information about how financial services entrepreneurs have achieved scale in the region. It is likely, for instance, that newer businesses with the highest growth potential are those designing fintech solutions and hiring higher proportions of STEM roles relative to the 5 percent seen in a typical financial services firm. As there are no support organizations on record that cater to growing financial services companies, this is an area on which all three cities can focus in the future.





# FOOD AND BEVERAGE MANUFACTURING

Businesses that manufacture packaged food items and beverages, primarily for wholesale distribution

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

<b>10+</b>	<b>&lt;5</b>	<b>&lt;5</b>	<b>10+</b>
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	---	---
Greater Indianapolis	---	---
Greater Louisville	Spirits Manufacturing, Commercial Food Suppliers, Specialty and Contract Manufacturing	<b>1.1x</b>

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

Slow But Positive

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor's Degree:** Above Average (95 percent)

*Common Occupations:* Food Processors, Packaging and Machine Operators, Laborers, Material Movers, Drivers

**Proportion of STEM Occupations:** Below Average (1 percent)

*Common STEM Occupations:* Food Scientists, Mechanical Engineering Technicians

**Proportion of Roles Requiring a Bachelor's Degree or Higher:** Below Average (5 percent)

*Common Occupations:* Designers, Operations Managers, Industrial Production Managers, Agricultural and Food Scientists, Market Research Analysts, Accountants



## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP CINCINNATI-INDIANAPOLIS-LOUISVILLE

Kaveh Zamanian founded **Rabbit Hole Distillery** in 2012 with a vision to create a better bourbon. He noticed that, from a consumer standpoint, it was difficult to know who the makers were behind the products. Consumers were expected to make purchasing decisions based on brand rather than content. As the industry is highly consolidated with only a few American distilleries still making whiskey, he saw an opportunity to create a more transparent and authentic company.

After trying out his own recipes, he found an existing distillery that would create his bourbon using their equipment, similar to what startup craft brewers do in the beer industry. The company grew to have a presence in nine states and opened its own 55,000 square foot distillery in downtown Louisville. The space welcomes thousands of visitors each year. Rabbit Hole joined the Endeavor network in 2018 and was recently acquired by Pernod Ricard, which will allow the company to scale with its international distribution network. Zamanian, a former psychologist originally from Iran, will continue to lead the company.

Rabbit Hole is part of a long-standing tradition of food and beverage manufacturing across Cincinnati and Louisville. In addition to being known as "Bourbon Country," Louisville is home to a number of chain restaurant headquarters

such as **Texas Roadhouse** and **Yum! Brands**, which operates Taco Bell and Kentucky Fried Chicken.\* In Louisville, this includes **Paradise Tomato Kitchens** that supplies sauces for chain restaurants.

In Cincinnati, local storefront companies have grown into major packaged food distributors. **Skyline Chili** began in 1949 as a local restaurant chain and now distributes a range of chili, pasta, and sauce products through large supermarket networks such as Kroger, Walmart, and Publix. **Graeter's Ice Cream** dates back to 1868 and is the only commercial manufacturer in the world to still use French pot freezers. In 2010, it opened a new plant in Bond Hill that tripled its previous capacity. The move allowed the company to distribute to more than 8,000 national and regional grocery stores, up from about 25 in 2007.

More recently, companies like **80 Acres Farms** are disrupting the industry. Founded in 2015 by Mike Zelkind and Tisha Livingston, the Cincinnati-based company delivers produce to stores from its fully automated indoor farms, which are purposefully located close to its customers.

This industry has a relatively low local concentration. In other words, these types of businesses are just as common in other parts of the country. Food and beverage manufacturing is also expected

to grow more slowly than the average industry. Nevertheless, decision makers have the opportunity to capitalize on the region's prime geographic location, robust distribution channels, and prominent nationwide grocery chains to ensure the future of this local sector. This is possible through more coordinated efforts to support new businesses. While there are some initiatives in the agriculture sector and test kitchens, more could be done to ensure that manufacturing entrepreneurs in this sector have what they need to grow.

\* On the whole, chain restaurants are not considered to be as productive as the manufacturing businesses that support them. See Appendix 2 for the full list of super-productive, tech-enabled industries. See Appendix 3 for notes and sources.

# PACKAGED GOODS MANUFACTURING COMPANIES

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

10+	5+	<5	<5
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	Specialty Chemical Products, Consumer Goods, Contract Manufacturing	2.2x
Greater Indianapolis	---	---
Greater Louisville	---	---

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

Negative

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor’s Degree:** Average (77 percent)

*Common Occupations:* Machine Operators, First-line Supervisors, Machinery Mechanics, Sales Representatives, Materials Movers, Shipping Clerks, Testers

**Proportion of STEM Occupations:** Above Average (16 percent)

*Common STEM Occupations:* Chemists, Industrial Engineers, Engineering Technicians, Sales Representatives

**Proportion of Roles Requiring a Bachelor’s Degree or Higher:** Average (23 percent)

*Common Occupations:* Chemical Engineers, Purchasing Agents, Safety Specialists, Industrial Engineers, Market Research Analysts, Production Managers

## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP CINCINNATI-INDIANAPOLIS-LOUISVILLE

Today there are 2.2 times as many of the BEST packaged goods manufacturing companies in Cincinnati than found in the rest of the United States, when adjusting for population size.\* The local packaged goods manufacturing industry can be traced to the city's older chemical manufacturing industries. This includes **Procter & Gamble**, founded by William Procter and James Gamble in 1837 who made soap and candles. P&G is now a multinational company with annual sales of more than \$66 billion and ranked number 42 on the Fortune 500 list in 2018.

More recently, companies in Greater Indianapolis have also joined the sector including **SePRO Corporation**, the largest manufacturer of aquatic plant protection products. The Carmel-based company was founded by Bill Culpepper in 1994 and received investment from Excellere partners in 2019. **Mansfield-King** is a contract manufacturer of cosmetics and personal care products led by Charles Haywood. Founded in 2005, it experienced rapid growth in the early 2010s and operates a 250,000 square foot facility.

**Nehemiah Manufacturing** was founded in 2009 by Dan Meyer and Richard Palmer. It makes products as a licensee of P&G such as Downy and Febreze products, as well as products that it now owns, like

Boogie Wipes. They started the company with the mission to create jobs in inner-city Cincinnati, especially for those who may have no work history or a criminal record. They work with local social service organizations to develop team members.

The business grew to more than 100 people and annual revenue of \$50 million in 2017. The company operates three facilities located near neighborhoods that they identify as having high unemployment and limited opportunities for entry-level jobs. In an interview with CNN, Meyer explained that about 40 people with troubled backgrounds show up every month looking for work. Nehemiah is unable to place all of them, but Meyer encourages other businesses in the city to hire the jobseekers. So far about 22 other companies have done so.

The industry is projected to decline nationally and the workforce could shrink by as much as 4 percent over the next 10 years. Given the momentum behind the existing local companies, however, the region may see more positive results. It will take coordination with the handful of existing companies in Indianapolis, and future contributions from Louisville, to ensure the continued growth of the sector in the entire region.

As decision makers work to support these companies, it is important to pay attention to the benefits they can offer. Packaged goods manufacturing has a higher than average wage of nearly \$79,000. In addition, this sector offers more roles for people with lower levels of education compared to many of the other industries named in this study. Decision makers should keep this in mind as they develop diversified strategies for job growth, as these roles would be relevant to much of the population.

\* The analysis uses data on chemical manufacturing businesses based on the North American Industry Classification System. See Appendix 3 for notes and sources.

# PHARMACEUTICAL AND MEDICAL DEVICE MANUFACTURING BUSINESSES

Businesses that develop medicines, instruments, and devices for healthcare purposes

## LOCAL REPRESENTATION

Number of companies with 50 or more employees

10+	5+	5+	<5
Total Region	Greater Cincinnati	Greater Indianapolis	Greater Louisville

## PROMINENT LOCAL SUBSECTORS

Groups of companies with 50 or more employees that are highly concentrated in the cities where this industry is an existing strength.

METRO AREA	LOCAL SUBSECTORS	CONCENTRATION OF SUBSECTORS VS. REST OF U.S.
Greater Cincinnati	Biotech, Devices, Generics, Clinical Development	1.1x
Greater Indianapolis	---	---
Greater Louisville	---	---

## NATIONAL INDUSTRY CHARACTERISTICS

### PROJECTED GROWTH

Slow But Positive

### WORKFORCE

**Proportion of Roles Requiring Less Than a Bachelor's Degree:** Below Average (57 percent)

*Common Occupations:* Assemblers, Packaging and Machine Operators, Chemical Processing Machine Operators, Inspectors, Production Supervisors

**Proportion of STEM Occupations:** Above Average (21 percent)

*Common STEM Occupations:* Medical Scientists, Life Scientists, Biomedical Engineers, Sales Representatives of Scientific Products

**Proportion of Roles Requiring a Bachelor's Degree or Higher:** Above Average (43 percent)

*Common Occupations:* Software Developers, Programmers, Electrical Engineers, Chemists, Materials Scientists, Industrial Engineers, Mechanical Engineers, Biological Scientists



## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP CINCINNATI-INDIANAPOLIS-LOUISVILLE

Greater Cincinnati has more than 1.1 times as many of the BEST pharmaceutical and medical device businesses than the rest of the United States after adjusting for differences in population. The city is home to several companies that have ties to the large nonprofit medical institutions in the city. **Assurex Health**, for example, was started by Don Wright in 2006 in Mason, Ohio. It was born out of research at Cincinnati Children's Hospital Medical Center and the Mayo Clinic. It raised more than \$100 million in capital before it was acquired by Myriad Genetics in 2016. Its signature product is the GeneSight genetic test that had a stated market potential of over \$2 billion. **Enable Injections** was founded by Michael Hooven and manufactures wearable devices for injectable drugs. The company has raised \$82 million, including Series A and B funding from Cincinnati Children's Hospital. **Eccrine Systems** was cofounded by University of Cincinnati professor Jason Heikenfeld in 2013. It manufactures devices that can analyze sweat and has raised \$16 million.

While Cincinnati's group of businesses confirm this sector as an existing strength in that city, there are emerging groups of pharmaceutical and medical device businesses in both Indianapolis and Louisville. Indianapolis has several successful pharmaceutical companies including the long-standing **Eli Lilly**, which remains one of the largest

corporations in the state. **AIT Bioscience** was founded in 2009 with Ronald Shoup as the company's scientific founder and has scaled to more than 60 employees.

**Assembly Biosciences**, a clinical-stage biotechnology company, is headquartered in Carmel and went public in 2010.\*

In Louisville, **US WorldMeds** develops pharmaceuticals for challenging conditions like Parkinson's disease. Founded by Paul Breckinridge "Breck" Jones in 2001, it acquired Solstice Neurosciences in 2010 and employs more than 200 people. One of Greater Louisville's most recent successes in this industry comes from

**Apellis Pharmaceuticals**. Founded as Potentia Pharmaceuticals in 2001 by Cedric Francois and Pascal Deschatelets, the clinical-stage biopharmaceutical company is developing treatments for autoimmune and inflammatory diseases. Francois is originally from Belgium and came to Louisville to be a part of the local research team that performed the first successful hand transplant. "Louisville chose me, not vice versa," he said in an interview with Louisville Public Media. Apellis raised more than \$168 million before going public in 2017. The Crestwood company now employs more than 150 people.

Local decision makers should work to leverage the strengths in Cincinnati to bolster the locally headquartered, entrepreneurial companies throughout the entire region. Fortunately, there are

a handful of support organizations that engage with life science entrepreneurs in all the three communities. Going forward, it will be important that these organizations align with the needs of the BEST entrepreneurs. For example, pharmaceutical and medical device companies tend to employ more people with college degrees and hire more people working in STEM occupations than average. Support organizations could play an important role in facilitating relationships with the region's universities to ensure they are generating specialized talent and innovations needed for the sector's growth.

Looking ahead, national projections indicate a slower growth rate in employment than the national average of 5 percent. Local leaders will need to foster efforts that can buck this national trend. Luckily, the local industry is more dynamic than average, meaning more local companies were founded in the last 10 years than what has been seen in other parts of the United States. This is an indication that the region has the capacity to generate more new entrepreneurial companies, which could usher in further economic growth.

\* While Indiana is known as a leading state for medical devices manufacturing, most of the prominent companies operate outside of the Indianapolis metro area. The medical device companies that do operate in the city, such as **Roche Diagnostics**, are owned by companies that have headquarters elsewhere. See Appendix 3 for notes and sources.

# ATTRIBUTION

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# GLOSSARY

## ► **Competitive Advantages in**

**Entrepreneurship:** Groups of the BEST businesses in a similar industry and given geographic area identified by their concentration and dynamism.

► **Corporate Attraction:** Policies designed to attract businesses to relocate or open second locations in a local area through the use of incentives or favorable regulations.

► **Corporate Satellites:** Plants, secondary offices, and franchise locations of corporations, often located in different cities or countries than the corporate headquarters.

► **Dynamism:** A measure based on the number of the BEST businesses founded within the last decade.

► **Entrepreneurial Companies:** Companies that are founder-led and headquartered locally. This excludes entities such as governments and charitable organizations operating outside the for-profit legal framework, as well as satellites of companies headquartered elsewhere.

► **Gross Domestic Product (GDP):** The market value of goods and services produced by labor and property in the United States, regardless of nationality. (U.S. Bureau of Economic Analysis.)

► **Local Concentration:** The ratio of the BEST businesses in the local area compared to the rest of the United States, adjusted for differences in population.

► **Major Cities:** Metropolitan statistical areas with 250,000 or more in population.

► **Metropolitan Statistical Area:** A geographic area defined by the U.S. Census Bureau with at least one urbanized area of 50,000 or more inhabitants.

► **Microbusinesses:** Companies employing 10 or fewer people.

► **Network:** A group of actors working to support local entrepreneurs. This includes city leaders, investors, support organizations, foundations, and experienced entrepreneurs.

► **Productivity:** A measure of economic output quantified in this report by GDP per capita.

► **Projected National Growth:** Rates provided by the U.S. Bureau of Labor Statistics indicating expected employment growth or output dollars for industries.

► **Scale:** A term used to describe companies that have grown to employ 50 or more people.

► **Startups:** New companies less than one year old with at least one employee. (Kauffman Foundation.)

► **STEM:** Science, technology, engineering and math. STEM occupations are designated by the U.S. Bureau of Labor Statistics.

► **Super-Productive Industries:** Sectors with at least \$100,000 GDP per worker.

► **Support Organizations:** Organizations offering skill-development programs, investment, mentoring or other support for entrepreneurs and startups. These include incubators, accelerators, and forums.

► **Tech-Enabled:** Sectors with 5 percent or more of employment in STEM occupations.

► **Venture Capital:** A type of investment typically for early stage businesses that have high growth potential. Venture capitalists (VCs) often provide expertise in finance and operations, in addition to capital.

# METHODOLOGY

## 1. DETERMINING SECTORS:

Endeavor Insight identified industries that met several criteria, including: (1) those with \$100,000 or more in GDP per worker, i.e., “super-productive”; (2) those that tend to sell products or services to customers outside their immediate geographies. The sectors were then tested as a group to ensure the selection was “tech-enabled,” with higher than average proportions of employment in STEM occupations than the national average. The full list of super-productive, tech-enabled sectors appears in Appendix 2.

## 2. DATA COLLECTION:

Endeavor Insight analyzed data from Dun & Bradstreet to identify companies with 50 or more employees operating in super-productive, tech-enabled sectors (using the North American Industry Classification System), and that are headquartered within the target city. To narrow the data to entrepreneurial businesses, we omitted nonprofits, public sector entities, subsidiaries, branches, and franchises. A review of the data from Dun & Bradstreet revealed some limitations. For example, the year founded reported in some cases reflected activity such as private equity buyouts and mergers, rather than the original entrepreneurial start of a company; and the geographic delineations for metro areas do not reflect the most recent U.S. Census delineations.

## 3. CONCENTRATION CALCULATION:

Based on this data, we compared the number of the BEST businesses in the target city to the rest of the United States adjusting for population size. Sectors in the target city with a larger proportion of BEST businesses vs. the rest of the United States — a concentration of more than 1.0 — remained in the study for further analysis as existing strengths. The sectors that had lower concentration levels were reviewed as potential emerging strengths.

## 4. VERIFICATION:

Endeavor Insight utilized data available on LinkedIn and company websites to verify the information provided by Dun & Bradstreet. This included reviewing location, employee size, year founded, operating status, and business purpose. In some cases, sectors were grouped to form a larger local industry type (e.g., packaged goods manufacturing), especially if they shared common traits such as employee or investor pools.

## 5. DYNAMIC ENTREPRENEURIAL HUBS:

If sectors had fewer than 10 companies with 50 or more employees, they were dropped from the study to ensure that the recommended competitive advantages were substantive avenues for entrepreneurship. Only sectors with local dynamism, i.e., at least one company founded in the last decade, were included in the study. Emerging strengths were identified from the sectors with low concentration, but more than one company founded in the last decade.

## 6. RECOMMENDED COMPETITIVE ADVANTAGES:

The results make up the competitive advantages in entrepreneurship for each city. Using Crunchbase and other sources, staff analyzed capital raised, acquisition or IPO activity, and employment growth to identify prominent local subsectors and companies to highlight in the report. Staff analyzed government data for each of the industries including employment growth projections, workers in STEM occupations, average wages, and roles by educational attainment.

## 7. REGIONAL ANALYSES:

Endeavor Insight then compared results across the three target cities to identify overlap in existing and emerging strengths.

# APPENDIX 1:

## COMPETITIVE ADVANTAGES IN ENTREPRENEURSHIP

### IN CINCINNATI, INDIANAPOLIS, AND LOUISVILLE

Industry Hub	North American Industry Classification System (NAICS) Description
Consulting Firms	Management, Scientific, and Technical Consulting Services; Scientific Research and Development Services; Other Professional, Scientific, and Technical Services
Software Companies	Software Publishers; Computer Systems Design and Related Services; Data Processing, Hosting, and Related Services
Advanced Manufacturing Businesses	Agriculture, Construction, and Mining Machinery Manufacturing; Industrial Machinery Manufacturing; Commercial and Service Industry Machinery Manufacturing; Ventilation, Heating, Air-Conditioning, and Commercial; Refrigeration Equipment Manufacturing; Metalworking Machinery Manufacturing; Engine, Turbine, and Power Transmission Equipment Manufacturing; Other General Purpose Machinery Manufacturing
Financial Services Firms	Nondepository Credit Intermediation; Insurance and Employee Benefit Funds; Other Financial Investment Activities
Advertising Agencies	Advertising, Public Relations, and Related Services; Specialized Design Services
Food and Beverage Manufacturing Companies	Bakeries and Tortilla Manufacturing; Animal Slaughtering and Processing; Dairy Product Manufacturing; Animal Food Manufacturing; Other Food Manufacturing; Beverage Manufacturing
Packaged Goods Manufacturing Companies	Basic Chemical Manufacturing; Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing; Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing; Paint, Coating, and Adhesive Manufacturing; Soap, Cleaning Compound, and Toilet Preparation Manufacturing
Pharmaceutical and Medical Device Manufacturing Businesses	Pharmaceutical and Medicine Manufacturing; Medical Equipment and Supplies Manufacturing

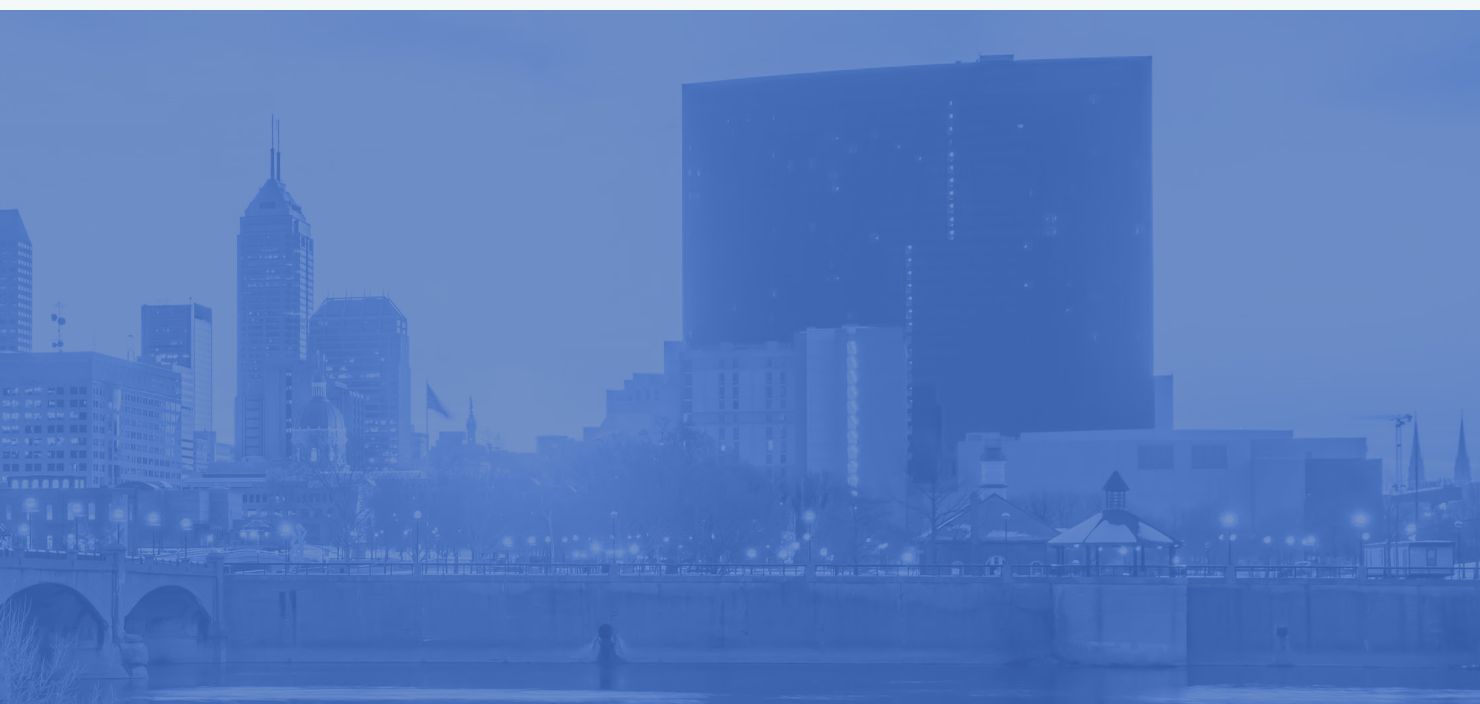




## APPENDIX 2:

### LIST OF SUPER-PRODUCTIVE, TECH-ENABLED INDUSTRIES BASED ON THE 2017 NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM

Forestry and Logging	Air Transportation
Fishing, Hunting and Trapping	Water Transportation
Support Activities for Agriculture and Forestry	Pipeline Transportation
Oil and Gas Extraction	Publishing Industries (except Internet)
Mining (except Oil and Gas)	Motion Picture and Sound Recording Industries
Support Activities for Mining	Broadcasting (except Internet)
Food Manufacturing	Telecommunications
Beverage and Tobacco Product Manufacturing	Data Processing, Hosting, and Related Services
Paper Manufacturing	Other Information Services
Petroleum and Coal Products Manufacturing	Credit Intermediation and Related Activities
Chemical Manufacturing	Securities, Commodity Contracts, and Other Financial Investments and Related Activities
Nonmetallic Mineral Product Manufacturing	Insurance Carriers and Related Activities
Primary Metal Manufacturing	Funds, Trusts, and Other Financial Vehicles
Machinery Manufacturing	Rental and Leasing Services
Computer and Electronic Product Manufacturing	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)
Electrical Equipment, Appliance, and Component Manufacturing	Professional, Scientific, and Technical Services
Transportation Equipment Manufacturing	
Miscellaneous Manufacturing	



# APPENDIX 3:

## INDUSTRY PROFILE NOTES AND SOURCES

### INDUSTRY DATA

#### LOCAL REPRESENTATION

Source: Dun & Bradstreet. app.vention.com. Accessed Jul. 2019.

#### PROMINENT LOCAL SUBSECTORS

Source: Endeavor Insight analysis; Dun & Bradstreet. Accessed Jul. 2019; LinkedIn.com. Accessed Aug. 2019; Crunchbase.com. Accessed Aug. 2019.

#### CONCENTRATION OF SUBSECTORS VS. REST OF U.S.

Source: U.S. Census Bureau. "Midyear population estimates, 2017." 14 Nov. 2019. apps.bea.gov; Dun & Bradstreet. app.vention.com. Accessed Jul. 2019.

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Note: Rates indicated in the profiles have been calculated for the years 2019 to 2028.

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Source: Endeavor Insight analysis; U.S. Bureau of Labor Statistics, Employment Projections. "Occupational Employment Statistics, Typical entry-level educational requirement data sets." 4 Apr. 2019; U.S. Bureau of Labor Statistics, Employment Projections. "Table 1.9 2018–28 Industry-occupation matrix data, by industry." 4 Sep. 2019. bls.gov. Accessed Aug. 2019.

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#### HIGHLIGHTED COMPANIES

Source: Details on acquisitions, IPOs, and capital raised were identified on Crunchbase.com (accessed Aug. 2019). Employee numbers, histories, business purposes were identified on company websites and LinkedIn.com (accessed Aug. 2019). Additional citations appear below.

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