SECTOR STRATEGIES

ETA Sector Strategies Technical Assistance Initiative:
USING DATA TO UNDERSTAND DEMAND

EMPLOYMENT AND TRAINING ADMINISTRATION
UNITED STATES DEPARTMENT OF LABOR

About This Brief

This resource is part of a series of integrated briefs to help workforce policymakers practitioners build a range of skills needed to launch and advance sector strategy approaches. The briefs are designed to be succinct and connect readers to existing resources, best practices, and tools. For more information, visit the U.S. Department of Labor Employment and Training Administration's [Business Engagement page](#).

About Sector Strategies

Sector strategies are regional, industry-focused approaches to building skilled workforces and are among the most effective ways to align public and private resources to address the talent needs of employers. While the approach is not new, there is a growing body of evidence showing that sector strategies can simultaneously improve employment opportunities for job seekers and the competitiveness of industries. As such, a number of national initiatives and federal laws (including the Workforce Innovation and Opportunity Act) are driving workforce organizations, in particular, to embrace these approaches, to meet both the needs of workers and the needs of the economy.

At the heart of sector strategies are sector partnerships (sometimes referred to as industry partnerships, workforce collaboratives or regional skills alliances, among others). These partnerships are led by businesses—within a critical industry cluster—working collaboratively with workforce areas, education and training, economic development, labor, and community organizations. Sector partnerships are the vehicles through which industry members voice their critical human resource needs and where customized regional solutions for workers and businesses are formed.

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INTRODUCTION AND OVERVIEW

The Workforce Innovation and Opportunity Act (WIOA) places a renewed and sharper focus on the importance of labor market information. It directs local workforce areas to collect and analyze regional labor market data, in order to fully describe:

- ■ Economic conditions, including existing and emerging in-demand industry sectors and occupations;
- ■ Employer needs in existing and emerging in-demand industry sectors and occupations; and
- ■ Knowledge and skills needed to meet the workforce needs of the employers in the region

Together, these metrics form a picture of regional labor market demand—a look at high-growth industry sectors and the hiring and training needs of those industries. WIOA directs local workforce areas to not only collect and analyze demand-side data, but to effectively communicate it to employers and workforce system partners within regional industry sector partnerships. It is within the sector partnership where employers will then validate and drill deeper into the data as a step toward producing relevant training and education services.

There are few guides to help workforce areas to help effectively understand the demand-side picture. Resources attempting to shed light on industry and occupational analyses are often aimed at labor market data specialists. They focus on the particulars of shift-share analyses and assume the reader needs to understand the intricacies of economic multipliers. But few of the workforce practitioners who will actually be forming or convening sector partnerships are data specialists—and they don't need to be. This tool is for practitioners—workforce leaders, managers, and program staff—to help them understand how to identify target industry sectors, assess the performance of these industries, and make common-sense decisions, within sector partnerships, about occupations and skills upon which training and education investments will be made. While there are many ways to collect and present industry and occupational data to decision-makers, this brief spotlights some of the most commonly used methods.

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IDENTIFYING, SELECTING & PRIORITIZING TARGET SECTORS

Every regional economy consists of a mix of industries that play a greater or lesser role in the overall number of jobs that exist and in the overall value of goods and services produced. This is important because operating within a sector strategy framework requires us to identify those industry sectors that are most crucial to growing the regional economy and that will provide the optimum mix of employment opportunities for career seekers.

Identifying and selecting target sectors[1] typically includes gathering a combination of quantitative trend data (e.g. labor market data, industry growth patterns) and on-the-ground qualitative intelligence. At its most basic, it involves asking several questions:

- ■ Is the industry concentrated regionally?

- ■ Is the industry sizable and growing?

- ■ Does the industry meet the region's outcome expectations (earnings creation, wage-levels, etc.)?

- ■ Are there untapped assets in the region that could give an industry the opportunity to grow or emerge?

An analysis of the answers to these questions will help workforce areas identify the industries that provide a competitive advantage and, thus, industry sectors that warrant collective action in the form of a formal and coordinated sector partnership. See the appendix for a look at where to locate data resources that address these questions[2].

> ### Defining Possible Target Sectors
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> Defining possible sectors to target often starts with a look at the North American Industrial Classification System (NAICS), which classifies sectors by core industry (e.g. manufacturing, health care, finance and insurance). Many regions, however, conduct further examination—of an industry's supply chain. The supply chain often can be more reflective of real company-to-company dynamics in a regional economy. The work of Michael Porter and cluster mapping serves as the foundation for how many regions further assess and define possible target industry sectors.

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[1] For the purposes of this report, the term "industry cluster" is used synonymously with "industry sector," defined as multiple companies concentrated in a geographic region and interrelated by common elements such as suppliers, customers, and, especially, labor.

[2] While a majority of data resources referenced in this tool are free, some are accessible through subscriptions with companies such as EMSI, Burning Glass and others. Many states have this type of subscription in place.

SELECTING TARGET SECTORS

Is the industry concentrated regionally? Is the industry sizable and growing?

Competitive advantage seeks to identify those clusters where the local or regional area has certain advantages and as a result does things better than the competition around the country. Competitive advantage may result from access to raw materials, access to markets, an effective transportation system, knowledge generated in local research institutions, knowledge that is embedded in the skills of the local workforce, or just the presence of an entrepreneur who has located in the region. The location quotient statistic (LQ) alerts us to the presence of a competitive advantage by measuring the concentration of employment in the industry locally relative to the concentration of employment in the industry nationally. The assumption is that an industry with a concentration above the national average (above the number "1") has a local competitive advantage—or specialization. The LQ is the primary metric for determining priority industries.

The upper left quadrant shows industries with high projected growth but less than average LQ . These are industries worth watching because, while they are not yet highly concentrated, they show growth

The lower left quadrant indicates negative projected growth and less than average LQ. These are industries that are not growing and not concentrated regionally.
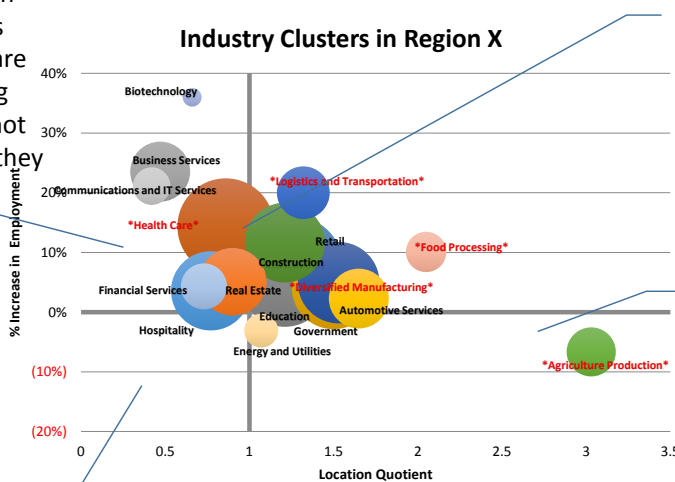
The upper right quadrant indicates high LQ and high projected growth. These are growing and highly concentrated regionally. These are industries in which a region has a competitive advantage.

The lower right quadrant depicts industries with high LQ but negative growth projections. These are industries that, while not growing, are still highly concentrated in the region currently.

Figure 1: Example of a Bubble Chart Tool for Analyzing Cluster or Sector Strength

Source: EMSI (using carious data sources)

In Figure 1, it is important to note that potential priority clusters can still appear in any quadrant (see next subsections for additional analyses needed).

The bubble chart also depicts two other critical factors—job growth projections and the absolute size of employment in the industry (size of the bubble). Job growth projections can be identified through sources such as EMSI and Burning Glass.

A bubble chart is a clear way of representing this information, but similar information can be analyzed and

displayed in simpler ways as well. Figure 2 on the right—an industry profile of the diversified health care industry in Humboldt County, California—depicts employment size, job growth (historic), wages and LQ information in a simple way that allows a workforce area to determine the viability of a potential target sector.

CONDUCTING FURTHER INDUSTRY ANALYSES

INDUSTRY PROFILE: Diversified Health Care

Figure 2-1: Diversified Health Care Performance Summary

Diversified Health Care	1995	2009	Percent Change, 1995 to 2009	Regional Comparison
Employment	9964	11810	18.5%	-6.1%
Firms	857	801	-6.5%	-15.5%
Wages	$31,945	$38,402	20.2%	6.7%
Concentration	1.29	1.30	0.8%	N/A

Figure 2: Industry Profile Example: Humboldt County, California

Source: Redwood Coast Targets of Opportunity 2012 Report

Does the industry meet the region's outcome expectations (earnings creation, wage-levels, etc.)?

While ranking by LQ may be the primary metric for selecting target sectors, it is not the only metric. It leaves out other critical determining factors, most importantly, wages. While a region may specialize in retail or hospitality, for example, these industries include a concentration of jobs with lower than average wages. In this instance, a community might make the decision that such a sector does not meet its expectations regarding the kinds of jobs and industries in which it will invest its workforce resources.

Weighing Other Criteria: Southwest Missouri Workforce Development Board

The Southwest Missouri Workforce Development Board, in collaboration with the Joplin Regional Partnership and other community partners, developed a list of criteria used to select target industries. In addition to opting for those that are growing and concentrated in the region, the collaborative's criteria also includes those industries that:

- ✓ **Have strong wages**

- ✓ **Offer career potential (e.g. include a distribution of job opportunities across the occupational and skill spectrum)**

- ✓ **Are resistant to cyclical recessions**

- ✓ **Have synergy with disaster recovery (the region includes Joplin, MO that experienced a catastrophic tornado in 2011)**

The collaborative has six targeted sectors: Construction; Transportation; Distribution & Logistics; Health Sciences & Services; Production; Professional Services; and Information Technology.

Are there untapped assets in the region that give an industry the opportunity to grow or emerge?

In this step, the cluster conversation moves from labor market data to on-the-ground tacit knowledge about industries that might be emerging. While current labor market data may not indicate strong employment growth in a particular industry today, there may be assets in a region that, if tapped effectively, could make that industry a viable sector of focus in the future. The following are among a myriad of assets that a region might examine when considering potential target sectors around which to build a sector partnership:

- Concentrated research and development assets (e.g. a region may have a top-tier research institution with potential for translating plant science R&D into new pharmaceutical companies with talent needs)
- Physical and natural assets such as highways and ports that might make industries like Transportation and Logistics and Manufacturing potential targets
- Existing education and training infrastructure poised to build strong sector strategies

Looking at Emerging Industries: Workforce Development Council (WDC) of Seattle-King County

The Workforce Development Council (WDC) of Seattle-King County, analyzes local labor market data to inform its selection of target industry sectors. The WDC conducts talent pipeline studies in industry clusters such as Health care, Manufacturing, Trade & Logistics, and Maritime – using this research to project occupational supply and demand as well as gaps in the skilled worker pipeline for key industries in the region. Every two years, the WDC examines this and other data and uses an established set of criteria to identify two sets of industry sectors on which they will concentrate: **focus and watch** sectors.

Focus sectors in Seattle are those industry sectors where it is determined that the workforce system will have the greatest impact, and where the most attention is paid. It is these sectors that are convened through sector panels. Watch sectors are those industry sectors that the WDC will keep an eye on – a less intensive focus but one that prepares the board for future action.

Importance of a Data Team

Determining target sectors upon which to form industry sector partnerships should not be made by a single person or a single organization. These analyses and decisions should be made by a regional data team (typically organized by workforce areas, or agreed upon economic regions). The team should define data elements and selection criteria; and provide any data already completed on targeted industries. Combined with a trained facilitator, regional teams of workforce development, education and economic development leaders should go through the data together, adding their own knowledge, and then determining which industry sectors around which to build a sector partnership.

In the end, the industry clusters that rise to the top are driven by competitiveness, projected growth, the size of the industry, and other factors deemed critical by the region. It is these sectors that will be the focus of investment of time, funding, and programming and that warrant collective action in the form of a formal and coordinated sector partnership.

IDENTIFYING AND PRIORITIZING IN-DEMAND OCCUPATIONS AND SKILLS

Once target sectors have been selected, it is time to identify and prioritize in-demand occupations within the sector. Figure 3 below highlights a simple occupational report—or staffing pattern—that can be generated from the industry sector NAICS and SOC codes. The occupations in this example fall under the Diversified Manufacturing industry (an industry that includes mostly metals and chemical manufacturing).

It is critical to understand that not all in-demand jobs are created equal. While the staffing pattern lists the occupations in the custom-defined industry from most prevalent to least prevalent, one must also consider other key factors such as average wages/earnings, employment growth (historical and projected), required education, skills and experience for new hires, and the potential for advancement from lower-skilled, entry-level positions.

Considering these additional factors when examining the table below, occupations such as Aircraft Structure, Surfaces, Rigging, and Systems Assemblers; Machinists; and Industrial Engineers (among others) could all be justified as priority target occupations. Each of these occupations is sizable in terms of total employment in the industry, each has livable median wages, and each is projected to grow (by at least 13 percent) over the next 10 years. In addition, the education and training required for entry-level positions in these occupations are such that individuals completing vocational or technical courses could secure employment and potentially move up to more advanced positions as they gain on-the-job training and experience. The specific criteria a region uses to determine priority occupations will vary. It is important to note that this entire step aims to simply compile a manageable list of *possible* priority occupations. Employers will ultimately drive this determination (see next section).

SOC	Description	Employed in Industry Group (2015)	Employed in Industry Group (2025)	Change (2015 - 2025)	% Change (2015 - 2025)	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
51-2092	Team Assemblers	6,015	5,754	(261)	(4%)	$14.56	High school diploma or e	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	2,250	2,250	0	0%	$29.01	Postsecondary non-degr	None
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,912	2,187	275	14%	$19.45	High school diploma or e	Moderate-term on-the-job training
51-4041	Machinists	1,863	2,034	171	9%	$21.31	High school diploma or e	Long-term on-the-job training
11-1021	General and Operations Managers	1,550	1,527	(23)	(1%)	$43.52	Bachelor's degree	None
17-2112	Industrial Engineers	1,453	1,642	189	13%	$37.53	Bachelor's degree	None
51-2022	Electrical and Electronic Equipment Assemblers	1,414	1,464	50	4%	$17.96	High school diploma or e	Short-term on-the-job training
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	1,352	1,578	226	17%	$19.22	High school diploma or e	Moderate-term on-the-job training
49-9071	Maintenance and Repair Workers, General	1,204	1,196	(8)	(1%)	$17.18	High school diploma or e	Long-term on-the-job training
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, M	1,180	1,018	(162)	(14%)	$14.82	High school diploma or e	Moderate-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and S	1,172	1,154	(18)	(2%)	$28.43	High school diploma or e	Moderate-term on-the-job training
51-9111	Packaging and Filling Machine Operators and Tenders	1,172	1,101	(71)	(6%)	$14.77	High school diploma or e	Moderate-term on-the-job training
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	1,158	1,219	61	5%	$32.77	High school diploma or e	Long-term on-the-job training
51-9198	Helpers--Production Workers	1,155	1,128	(27)	(2%)	$10.31	Less than high school	Short-term on-the-job training
17-2141	Mechanical Engineers	1,111	1,200	89	8%	$39.59	Bachelor's degree	None
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,031	1,037	6	1%	$13.34	Less than high school	Short-term on-the-job training
43-5061	Production, Planning, and Expediting Clerks	1,018	1,063	45	4%	$25.61	High school diploma or e	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	958	1,016	58	6%	$18.62	High school diploma or e	Moderate-term on-the-job training
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	958	1,318	360	38%	$23.67	High school diploma or e	Moderate-term on-the-job training

Figure 3: Example of a Staffing Pattern for Diversified Manufacturing Industry

Source: EMSI (using multiple sources)

One of the observations that people make when looking at staffing pattern reports is the fact that occupations frequently occur in more than one industry. Some occupations, such as those in health care and construction are more concentrated but other occupations, particularly those in sales and administrative support functions are found in virtually every industry. Looking across staffing patterns will help get a sense of the total number of people that work in an occupation across all industries. This may be a much more useful number than knowing just how many work in one industry, particularly for providing education and training to people at a larger scale.

Figure 4 on the right is another way of displaying similar information for a particular industry sector (Transportation, Distribution, and Logistics). In this example, the SW Missouri WDB has combined wages and total employment within a few key occupations to visually show those that might be worth further talent investment. While the chart offers less information than the staffing pattern, it can be a visually useful way of portraying this data to sector partnership members.

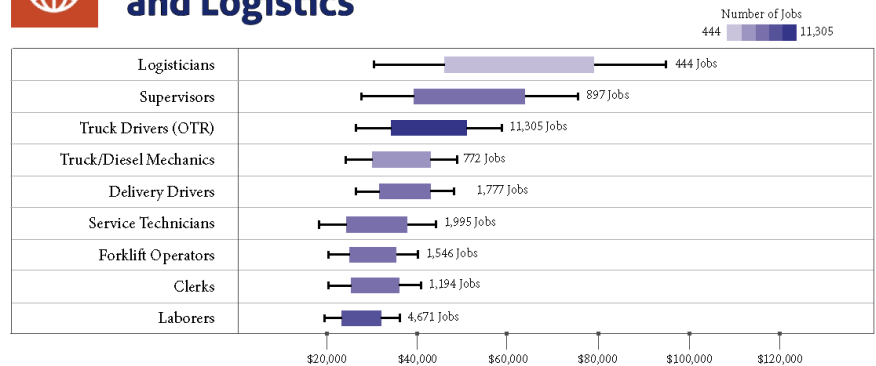## Transportation, Distribution, and Logistics

Number of Jobs
444 ▭▭▭ 11,305

	Number of Jobs
Logisticians	444 Jobs
Supervisors	897 Jobs
Truck Drivers (OTR)	11,305 Jobs
Truck/Diesel Mechanics	772 Jobs
Delivery Drivers	1,777 Jobs
Service Technicians	1,995 Jobs
Forklift Operators	1,546 Jobs
Clerks	1,194 Jobs
Laborers	4,671 Jobs

$20,000 $40,000 $60,000 $80,000 $100,000 $120,000
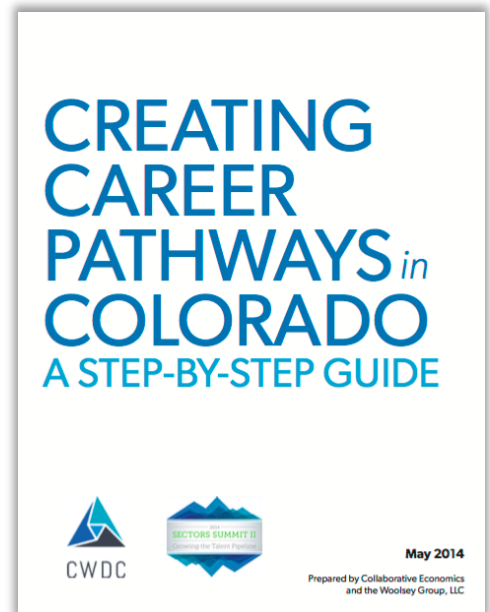
Figure 4: Example of a Targeted Occupation Chart

Source: Sector Ready Toolkit 1.0, The Workforce Investment Board (WIB) of Southwest Missouri, in partnership with the Joplin Regional Partnership, 2015

DRILLING DEEPER INTO KNOWLEDGE, SKILLS AND ABILITIES (KSAs)

Once key occupations have been identified, the U.S. Department of Labor's O*Net system can be used to dive deeper into capabilities within each occupational target. This information can help workforce and education partners develop career ladders and lattices within (and across) targeted industries by providing comparative information related to knowledge, skills, and abilities.

The Colorado Workforce Development Council has done a great deal of recent work focused on mapping specific skills to targeted occupations as a step toward career pathway development. The Council's 2014 Step-By-Step Guide includes examples from actual sector partnership meetings, resources such as a Convener Toolkit and sample data profiles, and recommendations for scoping and launching a sector initiative. The guide also includes topics such as: 1) Examining the talent landscape; 2) Collecting, organizing and reporting labor market data and information; 3) Developing a systems-based approach; and 4) Ensuring a sustainable future for both the partnership and the career pathways housed within it. The Step-by-Step Guide can be accessed here.

CREATING CAREER PATHWAYS *in* **COLORADO**
A STEP-BY-STEP GUIDE

CWDC

May 2014
Prepared by Collaborative Economics and the Woolsey Group, LLC

Source: Colorado Workforce Development Council

EMPLOYER VALIDATION THROUGH REAL DEMAND PLANNING

The robust data gathering and analysis conducted up to this point is essential—yet only a starting point. The true picture of demand will come from in-depth surveys and face-to-face conversations with employers via a convened sector partnership approach. This is where real "workforce demand planning" will occur, where employers will validate the occupational data that's been collected and will drill much deeper to help turn it into information to help job seekers be more successful in the workforce system. The input employers provide often portrays a much more comprehensive picture of regional nuances such as hiring challenges, wages, staffing dynamics (temporary, contract, part-time), impacts of technology advancements, and the knowledge, skills, and abilities required for specific positions within an industry.

So, who, at a company is the right person to engage with the sector partnership in this demand planning? Naturally, this will vary depending on the industry and company but here are two likely candidates:

- Human resource professionals: they have the job descriptions, the official requirements for the job, and the details about pay and benefits—key information especially when assisting companies around hiring.

- Operations managers, supervisors, and planners: they have the deepest knowledge of where skill gaps occur, what kind of person with or without credentials can do the job, what is the cutting edge of knowledge and skills on that job, and what credentials or licenses are relevant.

As sector partnerships convene employers, they should consider reaching to these type of individuals who are most apt and qualified to engage in validating the data.

The U.S. Chamber of Commerce Foundation's [Building the Talent Pipeline: An Implementation Guide](#) offers tools for which to engage businesses in this type of validation.

> **Data as a Launching Pad: Gulf Coast Workforce Area (Houston, TX)**
>
> "We noticed, through our labor market data research, that there were some potential RN shortages, regionally. We were able to convene executives from nine of Houston Medical Center's hospitals to validate. They appreciated the data and it gave us a great starting place to have a meaningful conversation about what was really going on. One issue we found was that the area post-secondary institutions weren't producing enough nurses in part because there weren't enough qualified instructors to take on expanded load. Through our Health Care sector partnership, we were able to get the hospitals to financially support additional instructors and help refine curriculum to be more in line with changing skill requirements. We were able to increase RN applicants to our regional schools and graduation rates.
>
> As the partnership continued to convene, our workforce area staff and our partners began to develop real health care industry sector expertise, gaining deep knowledge of the major trends affecting a range of health care jobs and how workers in this industry advance once they're in. It all started with the good data we brought."
>
> *~ Former director, Gulf Coast Workforce Development Board*

CONCLUSION

Understanding industry demand is a critical first step in prioritizing resources and ultimately placing workers in long-term, high-growth career opportunities. As more workforce areas prepare to use demand information to effectively drive decision-making, they should use and adapt a variety of these tools, resources, and examples. View the companion piece to this resource, *Using Data to Understand Supply* to understand how to collect and depict regional supply-side data, including how to conduct a gap analysis between the skills target industries need and the skills that the current regional workforce possesses. This type of information will lay the groundwork for

regional sector partnerships to develop in-depth career pathways, looking at how occupations advance both as ladders and lattices within industries and with transferrable skills that flow across industries. Pairing supply side and demand side data will also help regions more quickly determine where specific curricular and workforce service changes need to be made to meet the long-term needs of both businesses and workers.

Identifying and selecting target sectors typically includes gathering a combination of quantitative trend data (e.g. labor market data, industry growth patterns) and on-the-ground qualitative intelligence. At its most basic level, the process involves asking several questions:

Question	Metrics	Where to Find the Data
Is the industry concentrated regionally?	**Employment Dynamics:** Assessment of current industry employment, new hires, separations, recalls, job gains and losses, and earnings	**US Census Bureau's QWI (Quarterly Workforce Indicators)** are a set of economic indicators including employment, job creation, earnings, and other measures of employment flows. The QWI are reports detailing firm characteristics (geography, industry, age, size) and worker demographics (sex, age, education, race, ethnicity) and are available tabulated to state, MSA, county, and Workforce Investment Board (WIB). **http://lehd.did.census.gov/data/** **The QWI Explorer** Tool allows for comparative analysis of a wide variety of employment indicators across counties, MSAs, and WIBS for any industry. **http://qwiexplorer.ces.census.gov/#x=0&g=0** **The LED Extraction Tool** provides more detailed and intentional examination of specific geographies, employment indicators and industries. **http://ledextract.ces.census.gov**

Question	Metrics	Where to Find the Data
		Bureau of Labor Statistics – Quarterly Census of Employment and Wages (QCEW) State and County Map Application allows for a geographic comparative assessment of changes for a variety of metrics within a specific industry for a given time period (e.g. county-based comparison of the % change in employment within the Hospitality sector for Q3 2015.**http://www.bls.gov/cew/**
	Historical Growth: Measures current employment levels and past performance of an industry sector including the rate of change over a given period of time	**Bureau of Labor Statistics – Quarterly Census of Employment and Wages (QCEW) State and County Map Application** provides a visual representation of state or county comparisons for a variety of metrics collected by the QCEW. **http://beta.bls.gov/maps/cew/us**
		QCEW Data Viewer: County, MSA, State, and National Data by Industry allows for customizable searches for industry (out to 6-digit NAICS) data based on the QCEW. Multi-year data available. **http://www.bls.gov/cew/apps/data_views/data_views.htm - tab=Tables**
	Industry Concentration (Location Quotient): The location quotient variable is a comparative statistic used to calculate relative employment concentration of a given industry against the average employment of the industry in a larger geography (*e.g.* nation). Industries with a	**Bureau of Labor Statistics – Occupational Employment Statistics (OES) Data Set** is a semi-annual mail survey designed to produce estimates of the employment and wages for specific occupations. Data is used to produce employment and wage estimates for over 450 industry classifications out to the six-digit NAICS level. **http://www.bls.gov/oes/charts.htm**

Question	Metrics	Where to Find the Data
	higher location quotient (usually greater than 1.0) indicate that a region/state has a comparative advantage in the production of that good or service	**Bureau of Labor Statistics – (OES Data Set – Location Quotient Indicator** – Tool demonstrates which occupations are most concentrated relative to the national average for a specific state or local area. http://www.bls.gov/oes/current/area_lq_chart/area_lq_chart.htm
	Shift Share Analysis: Shift share attempts to determine how much of regional job growth can be attributed to national trends and how much is due to unique regional factors. Shift share helps answer why employment is growing or declining in a regional industry, cluster, or occupation	**Economic Modeling Statistics International (EMSI) – Highest Ranked Industries Report** Provides a list of the highest ranked industries according to employment, wages, growth, competitive advantage and location quotient. http://www.economicmodeling.com/
	Regional Industry GDP: An analysis of industry strength and performance as it relates to economic activity and the total value of goods and services produced over a given period of time.	**Bureau of Economic Analysis – Industry Economic Accounts** provide industry-specific economic performance data for the nation, state, county, or MSA including GDP and annual input-output. http://www.bea.gov/industry/index.htm
Is the industry growing?	**Future Growth Projection**: Incorporates historical growth and performance with expectations of growth/decline at a larger geographic scale (*i.e.*, state or nationwide)	**US Census Bureau Economic Census** Economic Census data is compiled and released every five years for the nation, states, metro areas, counties, and cities. https://www.census.gov/econ/census/index.html

Question	Metrics	Where to Find the Data
		US Census Bureau Economic Indicators https://www.census.gov/economic-indicators/ Provides monthly and quarterly data for selected sectors. Available at the national level only. **https://www.census.gov/economic-indicators/**
		US Census Bureau Economic Statistics – County Business Patterns (CPB) is an annual series that provides subnational economic data by industry. This series includes the number of establishments, employment during the week of March 12, first quarter payroll, and annual payroll. This data is useful for studying the economic activity of small areas; analyzing economic changes over time; and as a benchmark for other statistical series, surveys, and databases between economic censuses. **https://www.census.gov/econ/cbp/index.html**
		US Census Bureau Industry Statistics Portal – Industry Snapshots Allows users to enter a specific industry and view all relevant Census Bureau surveys and data files. Click on "Selected Visualizations to view maps, charts, and tables of county-level data for any state. **https://www.census.gov/econ/isp/index.php**

Question	Metrics	Where to Find the Data
	Economic Indicators: Historical data detailing metrics such as homeownership, new construction, business licenses and permits, commercial leases, etc. for a specific industry or geography	**QCEW Data Viewer: County, MSA, State, and National Data by Industry** **http://www.bls.gov/cew/apps/data_views/data_views.htm - tab=Tables**
Does the industry meet outcome expectations (earnings, creation, wage-levels, etc.)?	**Average Wage**: This metric calculates the average occupational wage associated with a particular industry sector. The average wage provides a perspective on the quality of jobs within a given industry.	**US Census Bureau's QWI (Quarterly Workforce Indicators)** http://lehd.did.census.gov/data/ The QWI Explorer Tool allows for comparative analysis of a wide variety of employment indicators across counties, MSAs, and WIBS for any industry. http://qwiexplorer.ces.census.gov/#x=o&g=o The LED Extraction Tool provides more detailed examination of specific geographies, employment indicators and industries. http://ledextract.ces.census.gov
	Job Creation/Gains: Analysis of the number of jobs an industry has added over a given period of time, taking into account losses and separations	See **Employment Dynamics** section of this resource table for available data source.

About The Author

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Maher & Maher is a specialized change management and talent-development consulting firm focused on advancing the collaboration between workforce, education and economic development.

Jobs for the Future (JFF) designs and drives the adoption of innovative, scalable approaches and models—solutions that catalyze change in our education and workforce delivery systems.