

Labor Market Data & Analysis for Site Selection



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Introduction

When Toyota North America's executive vice president Ray Tanguay was asked why his company decided to build their latest \$1.3 billion dollar manufacturing plant near Tupelo, Mississippi, he said, "I talked with area companies and observed their workforce . . . What I observed were people who are educated, ethical, and friendly with a strong work ethic—a perfect match for the Toyota Way." Tanguay also spoke of the fact that the region's other businesses, like Ashley Furniture and Cooper Tires, had high praise for the workforce. "They were definitely the best sales people," he said.¹

Clearly, many standard site-selection factors played a role in Toyota's decision—a well-prepared site, affordable rail access, local government incentives, and so on. However, the quality of the workforce was a major selling point. Without workers having the right skills and pay range in line with the company's strategic goals, even the physically perfect site would yield a suboptimal return on investment.

Businesses and economic development groups have increasingly recognized that innovation and human capital are the new economic drivers. Moreover, as retiring baby boomers are expected to create significant workforce gaps, businesses of all kinds—from international manufacturing firms to national retail chains to small businesses—are focusing on finding the "right sort of people."

How then do businesses, site selectors, and regional economic development groups get a sense of the quality of a region's workforce or human capital? The ideal solution, of course, is to get out in the community, conduct surveys, meet the workers, and talk to the local employers. Unfortunately, in most cases this is far too expensive and time-consuming, especially if there is a large pool of potential sites. A much more efficient solution is to use available data sources to narrow the search to a handful of areas, and then follow up with targeted primary research. In this paper, we review the types of available data, along with problems and solutions for data collection and analysis.

Labor Market Analysis: A Key Factor in Site Selection

As the Toyota example shows, one of the most important factors in site selection is a labor market or workforce analysis. Components of this problem include:

- What is the overall unemployment rate? A tight labor market will drive labor costs up.
- How many area workers are in key occupations, or are in occupations that have knowledge/skill sets that match those of key occupations?
- What are the wage ranges for these kinds of workers?
- Have these kinds of jobs seen significant job growth or decline recently? Growth in specific industries and occupations indicates strong competition for labor, while decline indicates a readily available labor pool.
- Are local workforce investment officials and training providers—universities, community/technical colleges, and career schools—committed to supporting area employers? Do they currently offer relevant courses/programs, or would they offer them in the future?

¹ http://www.chattanooga.com/articles/article_102563.asp. See also <http://www.cdfms.org/wellspring/>.

Companies need detailed labor market and education data to perform an initial review of the areas surrounding potential sites. Labor market data at the metro, county, or even ZIP code level provides a quick insight into the local economy's industry/occupation composition, including job growth trends and forecasts, wages, relative industry sector sizes, students graduating in certain fields, and more.

Analyzed properly, the data can even show wider labor pools of skills-similar occupations. For example, an area may have very few workers (or none) in the automobile parts manufacturing industry, but many workers in a declining furniture manufacturing industry. Occupational analysis shows that the two industries employ many of the same kinds of workers, and that even different occupations in the two industries actually require similar knowledge and skills. In this case, the site selector can demonstrate a win-win for the company and local officials—the company will have a reliable labor pool of experienced production workers with minimal re-training needs, while also reversing regional economic distress caused by the declining industry.

Challenges of Labor Market Research

Labor market information can be obtained from a number of public sources. While these sources are published for free, the data often require a good deal of time and effort before they can be called useful information. Some of the shared problems of public data sources² are:

- **Lack of Data Integration:** Much of the data is housed on state labor agencies' web sites or various federal sites such as the Census Bureau, Bureau of Labor Statistics, and Bureau of Economic Analysis—all of which have multiple data programs with separate databases. Simply collecting all the raw data necessary to provide a complete picture of a local economy is surprisingly time-consuming.
- **Problems with Coverage and Scope:** Various sources have different strengths and weaknesses. Some are good at totaling all types of workers but don't give much detail about how they are distributed among various industries or occupations; others offer a high degree of sectoral detail but limited geographic detail; some are survey-based and others are not; some are published annually and others quarterly; and so on. Researchers must laboriously stitch all these views together to arrive at something approaching a full picture.
- **Non-Disclosed Data:** Due to government privacy laws, these sources cannot publish detailed local data that would allow a researcher to gather information that could be tied to one or two specific business establishments. To hide these elements, agencies have to suppress multiple *other* pieces of data that could be used to "fill in" or calculate the original undisclosed data. This is a necessary limitation of public data that frustrates intensive labor market research.
- **Data Currency:** Most Census-based local data is anywhere from 5 to 10 years old, drastically reducing its usefulness. Other local (county/metro-level) economic data from the Bureau of Labor Statistics and BEA are usually more timely, but still 6 months to 2 years old. Unfortunately, the only way to overcome this issue (apart from primary, survey-based, on-the-ground research) is a method that estimates current and near-future data using past trends and published projections. However, public data sources rarely offer detailed and useful annual projections.
- **Overall Usability:** Data collection and integration is one task; actually analyzing the data is

² See the Appendix for an evaluation of important public workforce information sources.

another. Most of the information collected from public sources is available only in unwieldy plain text, database, or spreadsheet formats, leaving the researcher with many hours of re-formatting and analysis required to produce “presentation-ready” information.

Solution: Integrated, Accessible Labor Market Information

By now the problem of quickly obtaining good labor market data should be clear. With a bewildering array of sources—all with different characteristics, coverage, ease of use, and overall strengths/weaknesses—the researcher is forced to settle for an incomplete picture of local labor markets. A better solution would be a system that intelligently stitches together these various pieces of information, in an attempt to yield the most accurate and comprehensive picture possible. Moreover, such a system would provide fast and easy access to data with time-saving features like custom-defined geographic areas, group analysis of multiple industries/occupations, easy time-series reports (past and projected), local-to-state/national comparisons, and ready-made reports that answer the researcher’s “frequently asked questions” about any area’s economy and workforce.

One such solution has been created by Economic Modeling Specialists, Inc. (EMSI), which has developed a web-based system and automated reports that integrate and harmonize over 80 state and federal databases, allowing quick and easy analytics for any county, ZIP, metro area, or custom-defined area.

Strategic Advantage by EMSI: An Overview

Below is an overview of the labor market data housed in EMSI’s **Strategic Advantage** system, how it provides a comprehensive understanding a region’s workforce, and examples of how it can be applied.

Basic Industry and Occupation Analysis

To capture the most complete possible picture of area employment, EMSI collects and combines data from the Bureau of Labor Statistics, the Bureau of Economic Analysis, the Census Bureau, and individual state agencies. This “Complete Employment” dataset covers all types of workers. (EMSI also produces a “Covered Employment” data set that is nearly identical to QCEW, except that it provides educated estimates for non-disclosed numbers and locally redistributes jobs that are reported only at the state level.) Drawing from dozens of sources and processed using sophisticated algorithms, it represents a significant advance in data integration, coverage, detail, and usability.

This integrated data set reveals the basic composition of a region’s industries and occupations, including:

- Total jobs and past/projected job trends for detailed industries and occupations
- Number of establishments by industry
- Wages, including percentile wage levels for occupations
- Relative local industry/occupation employment size and growth, compared to state(s) or U.S.
- Unemployment by broad industry and occupational sector

- Staffing patterns showing the relationship between industries and their component occupations.

Figures 1 and 2 are examples of the interface and analysis features of EMSI's web-based system, called *Strategic Advantage*. The first shows a ranking of detailed local industries; the second provides information on a specific occupation in a local area. The system can rank industries and occupations using multiple variables, and supports any custom-defined geographic area and custom-defined industry or occupation aggregations. In addition, it provides an interactive table of all the raw data which can be sorted and filtered instantly.

Figure 1

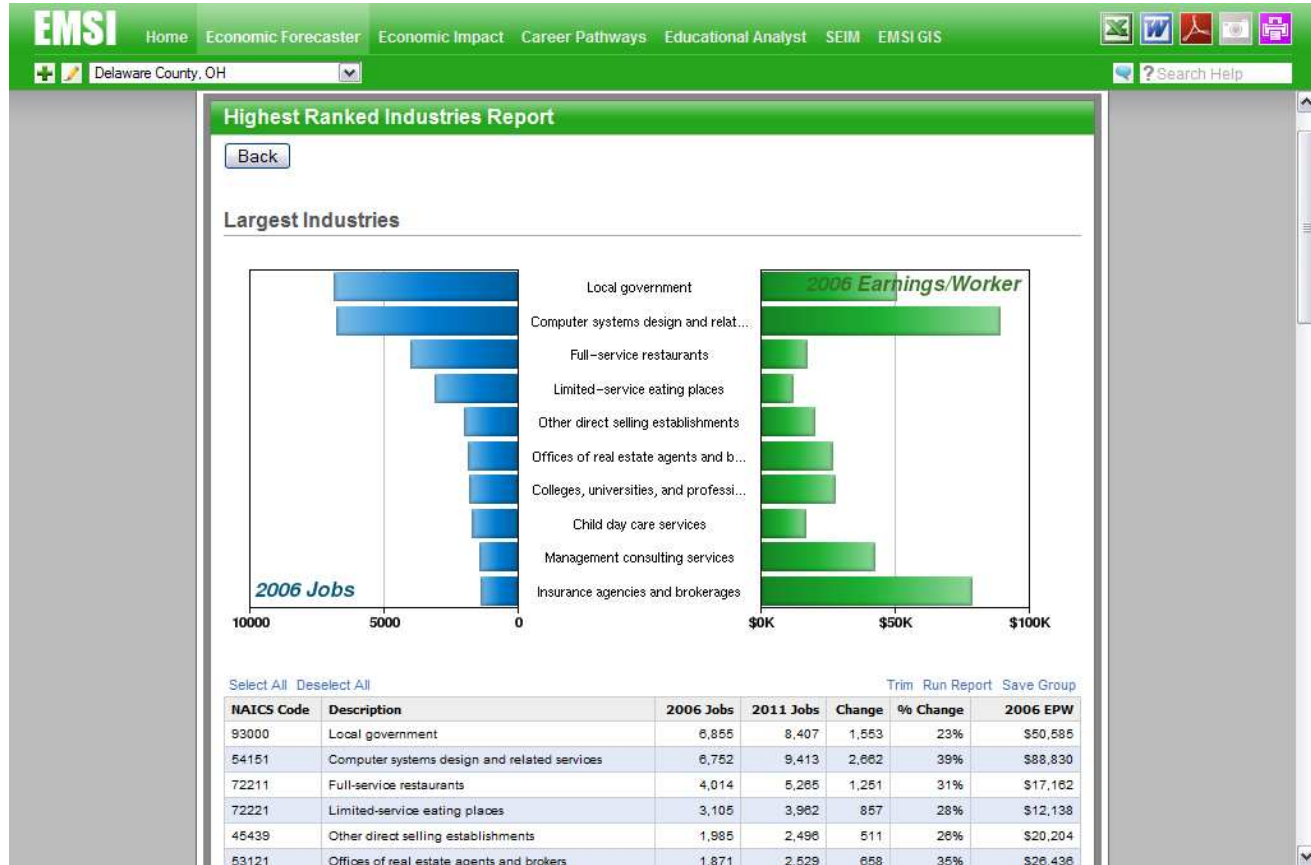
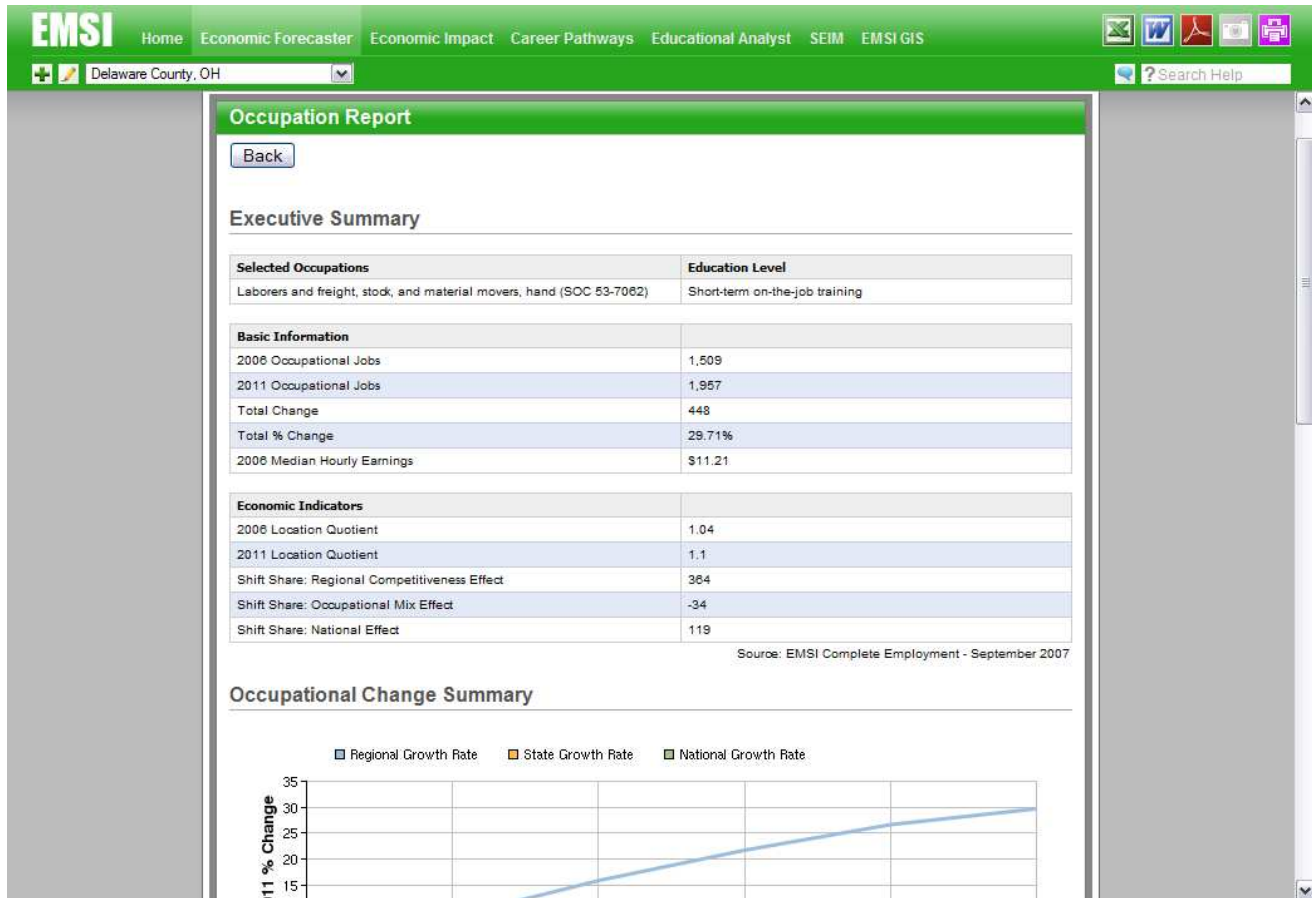


Figure 2



Labor Pool & Human Capital Analysis

EMSI has also created a unique tool called Career Pathways that leverages O*NET's occupational competency profiles in combination with local area occupational data. This powerful combination allows local analysis of extended labor pools and embedded human capital.

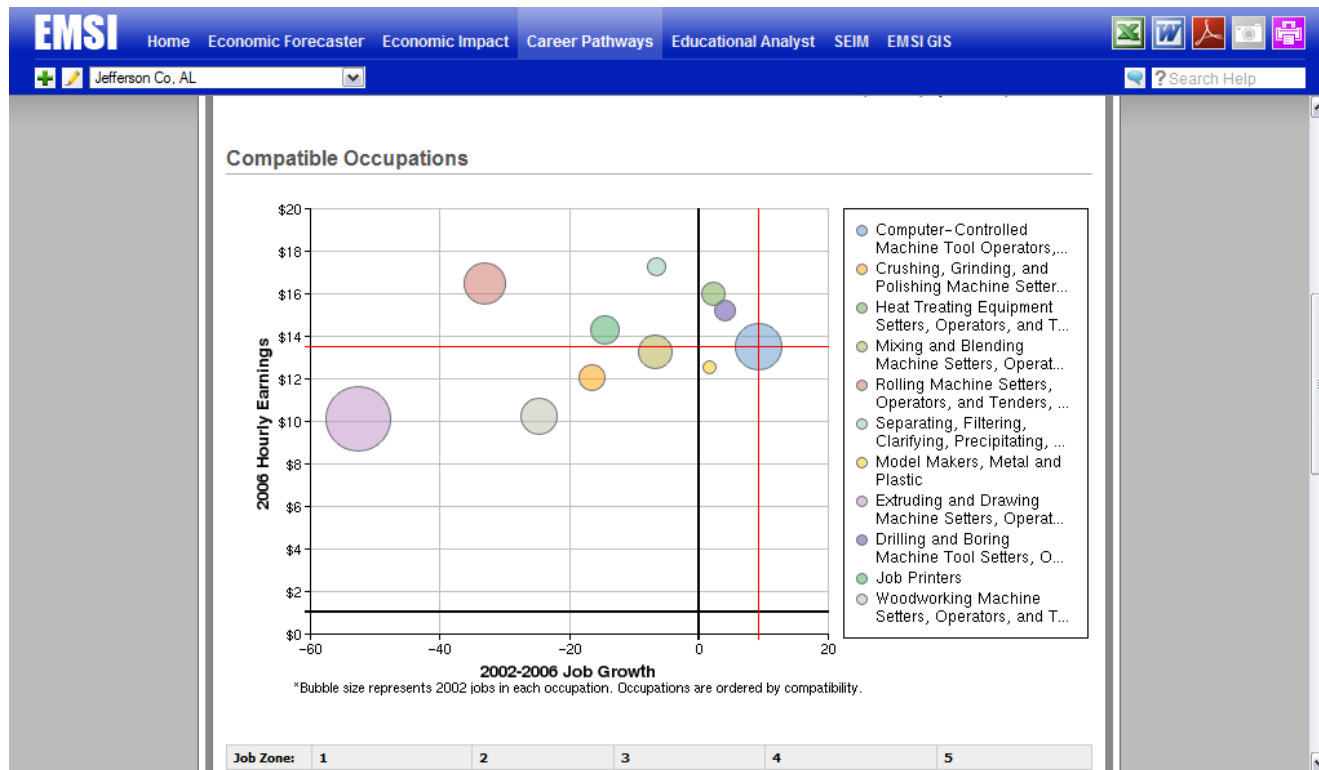
Suppose that a company is evaluating sites for a new facility, and is interested in the local labor market for operators of computer-controlled machine tools. The data may show some 350 current jobs, with moderate job growth trends. Based merely on these numbers, the labor market looks tight. However, there are other jobs with similar skill sets. If workers could be persuaded to switch jobs, and the local college offered relevant training, the labor market picture would look very different.

To enable this kind of research, EMSI's Career Pathways analyzes the O*NET competency profile for operators of computer-controlled machine tools, comparing it to the profile of hundreds of other occupations. It would find similar occupations that include:

- Crushing, grinding, and polishing machine setters, operators, and tenders
- Rolling machine setters, operators, and tenders
- Extruding and drawing machine setters, operators, and tenders

An easy-to-read graph (**Figure 3**) might show that several compatible occupations are not only declining in the area, but also offer lower pay than the target occupation. This indicates a much looser labor market, since there is likely a significant pool of workers who would be very willing to upgrade their skills to get a higher-paying and more secure job as operators of computer-controlled machine tools. This promising trend can be confirmed and further investigated using on-the-ground research.

Figure 3



Another feature of the Career Pathways tool is the linkage between occupations and local postsecondary training programs. The researcher can select an occupation of interest and scan regional universities, community/technical colleges, and many private career colleges for related programs.³ The results even show how many recent graduates the programs produced.

In summary, the power of the Career Pathways module is that it integrates industry/occupation employment data, staffing patterns, standard O*NET competency profiles, and local education/training program information into one user-friendly package.

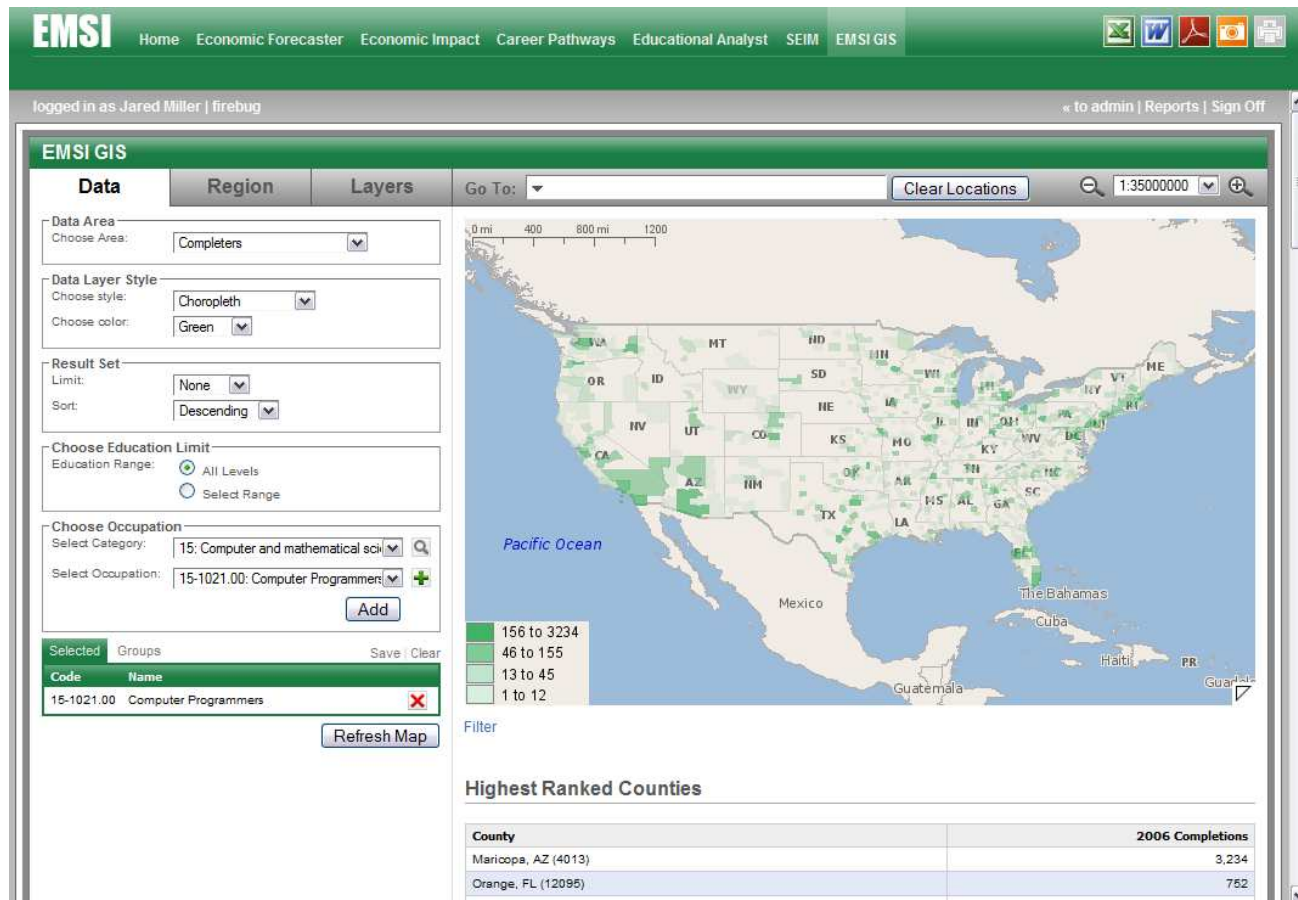
Mapping Data with EMSI GIS

Strategic Advantage also includes a straightforward, user-friendly GIS mapping tool that is fully integrated with EMSI's data set. It can be used to map nearly all aspects of EMSI data, from jobs and growth to earnings and relative employment size and much more.

³ Any institution that reports data to the U.S. Department of Education IPEDS program is included. Note that some occupations—especially those requiring less than a 2-year degree—are not linked to any standard postsecondary program.

For example, the following map (**Figure 4**) shows college completions in programs linked to the occupation “computer programmers.” A ranking table under the map reveals that Maricopa County, Arizona (which includes Phoenix) leads the nation in producing graduates in this field—more than four times that of the second-ranked county.

Figure 4



Other Data

Strategic Advantage excels in regional workforce analysis, but it also includes other useful information about any U.S. region, including:

- Demographic overviews by race, age, and gender
- Various indicators such as annual county-to-county migration flows, housing costs, educational attainment by race and gender, past/projected high school graduations, and patents granted.
- Regional economic models that show economic base, economic ripple effects of job loss or creation, and regional inter-industry supply chain gaps.

Conclusions

Site selection is a complex process that involves dozens of factors, including physical infrastructure, land parcels or buildings, quality workforce, tax incentives, and more. However, the availability of a quality workforce is quickly becoming one of the most important factors for many companies.

Traditionally, researching local labor markets required laboriously collecting, integrating, and analyzing publicly available data from multiple sources. Today, the rise of private-sector data integration platforms—led by EMSI’s Strategic Advantage—has greatly accelerated this process, providing a host of valuable data along with value-added processing and presentation.

About EMSI

Economic Modeling Specialists Inc. (EMSI) is a professional services firm that offers integrated regional data, web-based analysis tools, data-driven reports, and custom consulting services. EMSI has served thousands of policy professionals and consultants in the U.S., Canada, and the United Kingdom, and the company’s web-based **Strategic Advantage** research and analysis suite has over 2,500 users. For more information, call (866) 999-3674 or visit www.economicmodeling.com.

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Appendix: Public Sources for Key Labor Market Data

In this appendix, we evaluate a few of the most important sources of public labor market data. EMSI's Strategic Advantage uses an integrated database created using all these sources (except Local Employment Dynamics, which is currently being incorporated).

- **The Quarterly Census of Employment and Wages (QCEW),¹** Bureau of Labor Statistics.
 - *Pros:* Includes state, metro area, and county employment, establishments, and payroll numbers by industry. Its attempted geographic and industry detail coverage are impressive. It produces quarterly data with a 6-9 month lag for preliminary data and a 1-year lag for final data.
 - *Cons:* (1) This source only includes payroll (unemployment insurance covered) employment; other types of workers, such as the self-employed, small business owners with no paid employees, railroad workers, and others are left out. (2) It does not include data for occupations—only industries. (3) Much of the detailed local data is not disclosed due to government privacy policies. (4) The available data access tools are difficult to work with, especially for customized multi-industry and multi-area groupings.
- **Occupational Employment Statistics & Employment Projections,²** Bureau of Labor Statistics.
 - *Pros:* Includes state, metro, and non-metro region employment and wage numbers by *occupation* (job type) rather than by industry, although it also shows how occupations are distributed across industries and vice versa. You can also find 10-year job projections for each occupation. It generally has an 18-month lag time.
 - *Cons:* (1) Because it is a survey, there is possibility for error, especially for smaller areas. (2) No county-level data, which makes analysis of local and custom geographic areas difficult or impossible. (3) Data access is difficult, requiring the researcher to click through multiple pages to get a single piece of data for a single year.
- **Census 2000 and American Community Survey,** Census Bureau.
 - *Pros:* Comprehensive data for hundreds of demographic, social, and labor force variables, including labor force status, industry/occupation, wage, and journey to work. Has detailed geographic coverage.
 - *Cons:* (1) Census 2000 is long out of date for real-time corporate decision-making. (2) American Community Survey is susceptible to survey error, does not include as much data as the centennial census, and excludes smaller / more rural counties. (3) Respondents “self-classify” their industry and occupation, which is translated to standard codes by Census workers—introducing a good deal of error.

¹ <http://www.bls.gov/cew/>.

² <http://www.bls.gov/oes/>, <http://www.bls.gov/emp/home.htm>.

- **Local Employment Dynamics - Quarterly Workforce Indicators,**³ Census Bureau.
 - *Pros:* Provides payroll employment statistics by industry for local areas, including total jobs, new jobs, separations, turnover, and other variables by worker age and sex. It represents a step forward in government data integration, detail, and flexibility. Includes “On the Map” tool. Approximately 1 year data lag.
 - *Cons:* (1) Eight states don’t provide data, and a few have a longer lag time. (2) Geographic and industry aggregation is difficult. (3) No occupation data. (4) Interface is somewhat clumsy.
- **Nonemployer Statistics,**⁴ Census Bureau.
 - *Pros:* This unique dataset uses tax returns to show establishments and earnings by industry for self-employed workers and proprietors without paid employees, who do not appear in QCEW and OES. It is available for states, metros, and counties with mid-level industry detail.
 - *Cons:* Much detailed data is undisclosed, there is a 2-3 year time lag, and there can be self-classification errors (people misclassifying their industry).
- **Local Area Personal Income Reports,**⁵ Bureau of Economic Analysis.
 - *Pros:* This county-level source (also available for metros and states) specializes in comprehensive, high-level totals for personal income, population, employment by industry sector, and levels of total proprietor vs. payroll employment. Unlike QCEW, it includes all types of workers—covered and non-covered.
 - *Cons:* (1) Only provides totals for very broad industry sectors. (2) Data time lag of about 1 year for metro areas and 2 years for counties.
- **Occupational Information Network (O*NET),**⁶ Department of Labor / Employment & Training Administration.
 - *Pros:* Provides profiles of knowledge, skills, abilities, work interests, work activities, workplace tools, and other characteristics for hundreds of occupations. When connected to local labor market data, it can provide quantifiable estimates of available human capital.
 - *Cons:* Requires a good deal of analysis to make the raw data useful for constructing total labor pool estimates (jobs in all compatible occupations), especially since it uses a slightly different occupational classification system than occupational labor market data.

³ <http://lehd.did.census.gov/led/datatools/qwi-online.html>.

⁴ <http://www.census.gov/epcd/nonemployer/>.

⁵ <http://www.bea.gov/bea/regional/reis/>.

⁶ <http://www.onetcenter.org/>, <http://online.onetcenter.org/>.

- **State Labor and Employment Agencies:**⁷ Nearly all states have their own labor market information agencies. They reproduce data also available on federal sites (such as QCEW), but most states also produce their own state-level and sub-state regional forecasts.

⁷ See <http://www.bls.gov/bls/ofolist.htm>.