



# INFORMATION



# TECHNOLOGY



## **Information Technology–Definition**

The Information Technology cluster is comprised of industries involved in the manufacturing of electronic components used in computers, communication devices, and other electronic devices. This cluster also includes planning and design of computer systems, software development, management consulting services, and research.

## **Missouri's Strengths**

### **Communication Services**

Wired and Cellular telecommunications are industries included in this group. Wired telecommunications is the top employer in this cluster. It also is a strong exporting industry with moderate growth. Cellular telecommunications has been growing over the last five years and is developing into an industry with significant employment in the state. Southwestern Bell, Centurytel, AT&T, MCI, and Sprint are included in the communications group.

### **Computers**

Computer systems design is another major employer and exporting industry in this cluster. It has exhibited strong growth over the last five years. Custom computer programming services is also a large employer in this cluster. The software publishing industry is a comparatively small employer in this group but has seen high percentage growth in the past few years. Cerner Corporation, IBM, and Jack Henry are examples of companies in the computer group.

### **Electronics Manufacturing**

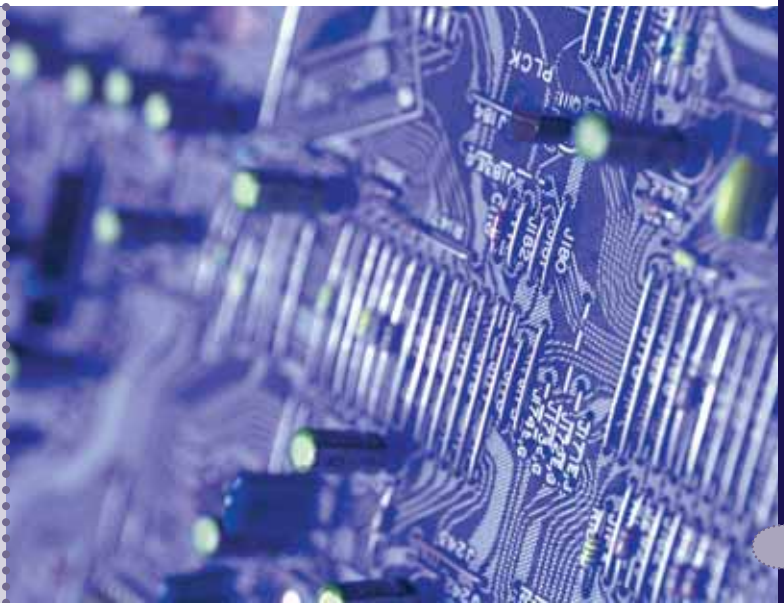
Some of Missouri's fastest growing industries are in this group. These businesses include printed circuit assembly, electron tube, and electronic component manufacturing. Electronic connector manufacturing is the strongest exporter in the cluster. MEMC Electronic Materials, 3M, Northrop Grumman Interconnect, and Emerson are businesses involved in electronics manufacturing.

## **Key Locations**

The largest employing areas in Information Technology are in St. Louis and Kansas City. Growth areas are exhibited across all Missouri regions. Areas of high cluster concentration include Barry, Wayne, St. Clair, Clay, and Caldwell counties.

### **Factoid:**

- The first AT&T mobile telephone call was placed by a driver in St. Louis in 1946.
- 68% of telephone lines in Missouri are residential.
- The number of High Speed Lines in the U.S. has more than doubled since 2004.
- The University of Missouri Columbia newspaper The Missourian developed the world's first live digital edition.

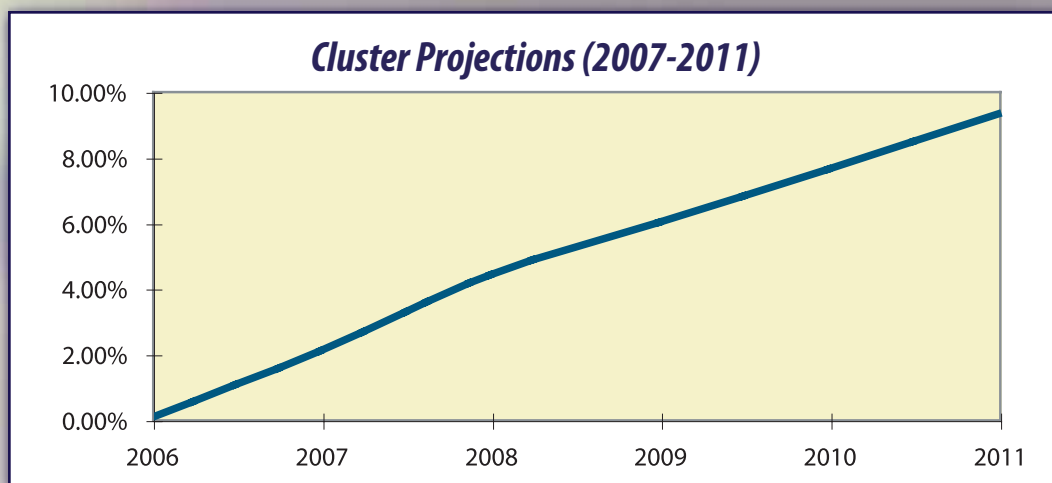


## What's Next for Information Technology?

Information technology (IT) firms employ nearly 1.7% of Missouri's workforce, an increase of 10.8% since 2001. Employment growth in this cluster exceeds both the national and industry employment growth rates. Much of this success can be attributed to the state's strong commitment to the advancement of life sciences using advanced information technologies in human genome studies, pharmaceutical research, and other research along the life science corridor. Also, a strong presence in other technologically integrated industries, such as telecommunications, financial services, and defense, has helped make Missouri competitive in IT.

IT firms may be more responsive, adaptable, and susceptible to advances in technology than any other targeted cluster. Telecommunications companies are responding to customer demands with regards to the transmission of data, graphics, and video. Wired telecommunication firms are increasing bandwidth by installing fiber optic cables and boosting speeds with Digital Subscriber Lines (DSL). Wireless firms are increasingly becoming more competitive by allowing consumers to receive high speed video transmissions from nearly anywhere using third generation (3G) wireless access. Employment in telecommunications is expected to decrease as consolidation and technology streamline monitoring processes and customer services. However, the need for computer specialists, electronics engineers, and researchers is expected to increase.

The software publishing industry is expected to be the third fastest growing industry in the nation over the next decade. Rapidly changing technologies will require ongoing software creation and updates. Firms in all industries are expected to increase investment in e-commerce activity, security features, and other business use applications. Educators, researchers, and life science industries will continue to require highly specialized software applications. Electronic and computer products geared for household and personal use will also rely on updated software components. While some outsourcing of routine tasks is presumed, highly trained IT professionals should continue to see employment growth in the state with many job opportunities at competitive wages.



**Cluster Statistics**

- Number of Businesses (2006) ..... 2,345
- Number of Jobs (2006) ..... 38,604
- Percent of Total Missouri Jobs (2006) ..... 1.68%
- Average Annual Wages (2005) ..... \$70,938
- Location Quotient (2006) ..... 0.79
- Percent Change from 2001 Location Quotient ..... 8.69%
- Net Percent Change in Jobs (2001-2006) ..... 10.8%
  
- Total Change in Jobs (2001-2006) ..... 3,760  
*Employment Change from 2001 attributed to:*
  - National Factors ..... 894
  - Industry Factors ..... 195
  - Missouri's Competitiveness ..... 2,670

**Top Five Industries**

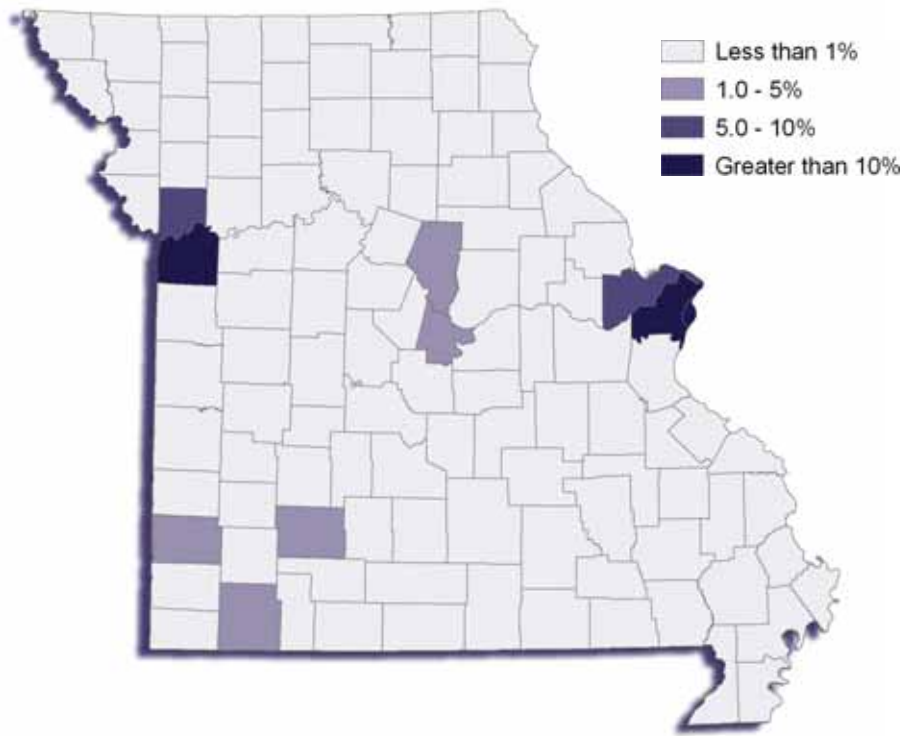
- Wired telecommunications carriers
- Computer systems design services
- Physical, engineering and biological research
- Custom computer programming services
- Software publishers

85.4% of  
Cluster Jobs

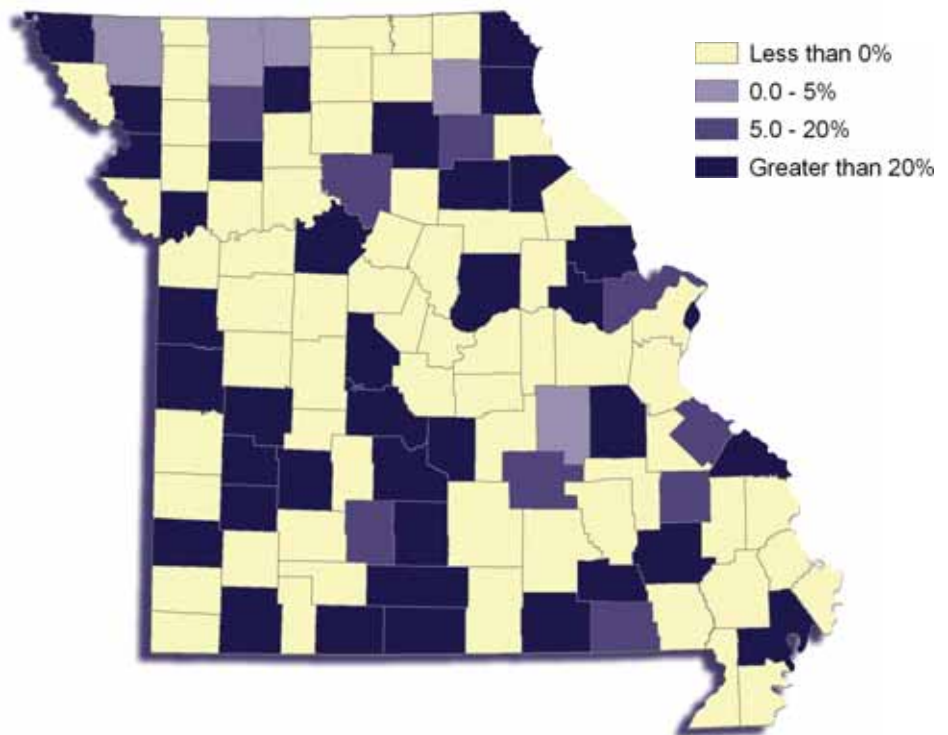
**Targeted Occupations with Projected Growth and Current Wage**

<b>IT (16% or more of Cluster Occupations)</b>	<b>Current Wage</b>	<b>Projected Growth 2004–2014</b>
Network Systems and Data Communications Analysts	\$58,260	43.60%
Computer Software Engineers, Systems Software	\$73,270	39.30%
Computer Software Engineers	\$74,330	34.40%
Computer and Information Systems Managers	\$94,990	19.10%
Computer Systems Analysts	\$66,990	19.10%

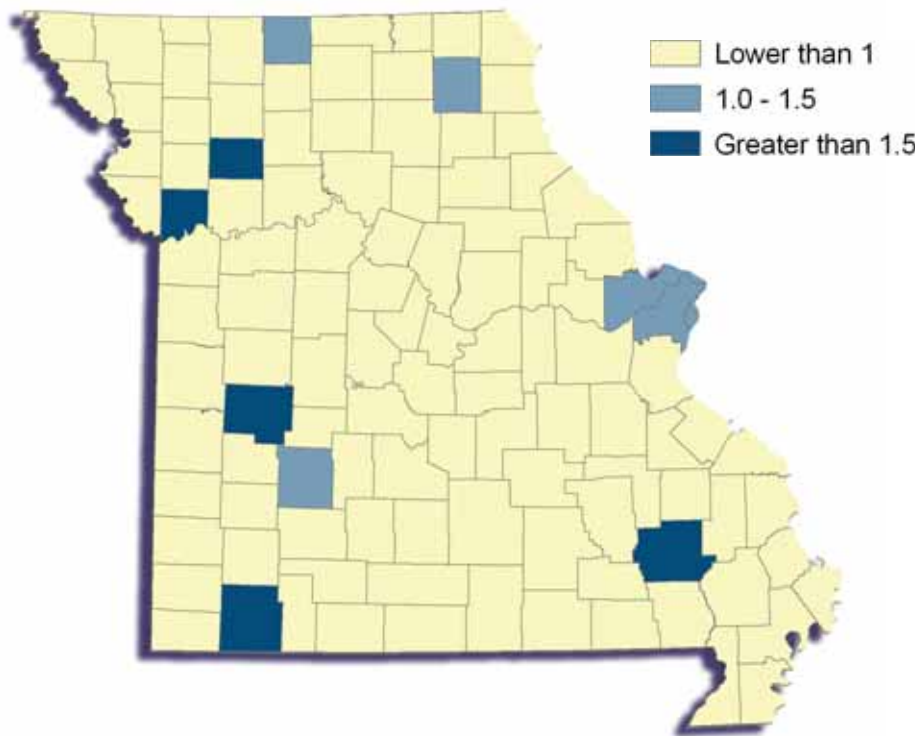
**Employment Percentage by County (2006)**



**Employment Change by County (2001-2006)**



**Location Quotient by County (2006)**

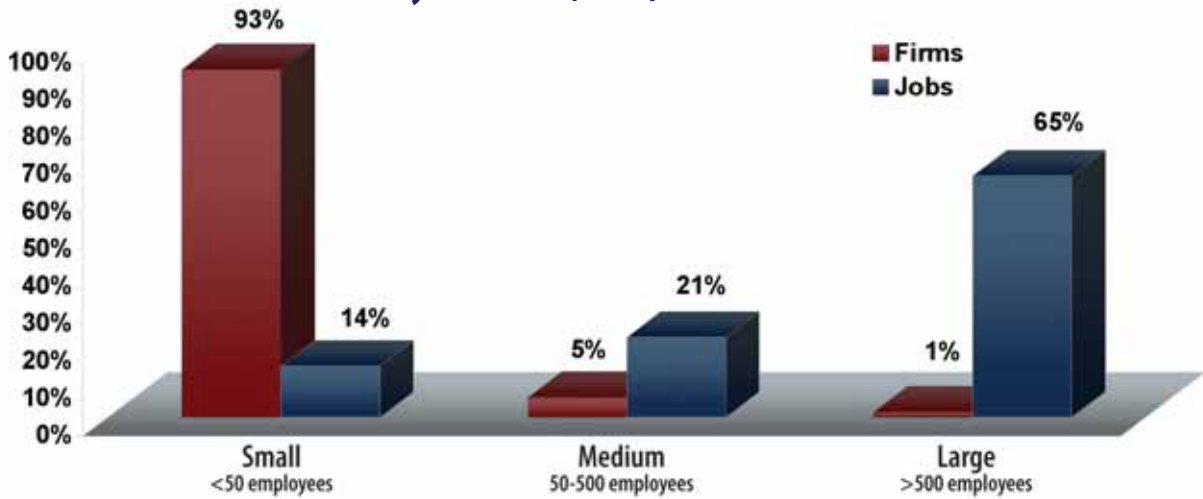


**Top Industries by 2006 Location Quotient (LQ) with Change from 2001 LQ**

NAICS	Industry	2006 LQ	Percent Change
334417	Electronic connector manufacturing	2.51	-23.93%
517110	Wired telecommunications carriers	1.80	2.84%
541512	Computer systems design services	1.07	18.40%
334419	Other electronic component manufacturing	0.88	54.01%
541710	Physical, engineering and biological research	0.85	59.68%
334418	Printed circuit assembly manufacturing	0.73	426.05%
334411	Electron tube manufacturing	0.71	n/a*
511210	Software publishers	0.71	22.76%
517212	Cellular and other wireless carriers	0.70	7.64%

\* Industry did not exist in Missouri in 2001.

**Distribution of Firms and Jobs by Firm Size (2006)**



**NAICS industries included in targeted cluster**

334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334411	Electron Tube Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334414	Electronic Capacitor Manufacturing
334415	Electronic Resistor Manufacturing
334416	Electronic Coil, Transformer, and Other Inductor Manufacturing
334417	Electronic Connector Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing
334419	Other Electronic Component Manufacturing
511210	Software Publishers
517110	Wired Telecommunications Carriers
517211	Paging
517212	Cellular and Other Wireless Telecommunications
541511	Custom Computer Programming Services
541512	Computer Systems Design Services

### ***Missouri Home-Grown Entrepreneurs: Jack Henry & Associates***

One of our state's largest information technology firms, and a leader for technology solutions in its field, is located in a place far removed from the hustle and bustle of the big city.

In 1976, Jack Henry and Jerry Hall began their business with a borrowed computer and an idea for providing in-house data processing solutions for small community banks. Eventually, they picked up a few clients and moved into an office in the back of a tire shop in Monett, Missouri. Located at the county line of Barry and Lawrence in the southwest corner of the state, this town of 7,400 became headquarters for Jack Henry & Associates.

Jack Henry & Associates played a key role in the survival of small community banks by offering them technology that kept them competitive. The company grew steadily and in 1985 became a publicly held company listed on the NASDAQ.



Throughout the 1990s and into the new century the company continued to grow... earning recognition along the way like Top 100 Small Business in America; Top 10 Growth Company in the 1990s, Outstanding National Business Partner for IBM, and more.

Today, Jack Henry & Associates is a leading provider of integrated technology solutions and data processing services for financial institutions. The company markets and supports its systems throughout the United States, with thousands of customers nationwide.

The company which began renting space in a repair shop now sits on a 138 acre corporate campus in Monett employing over 1,100 professionals, and more than 3,400 workers in 50 offices nationwide. Since the late 1970s, they have developed from one client to more than 8,700. Their five industry-leading, competitively distinct platforms are surrounded by more than 100 complementary products and services earning them nearly \$600 million in revenue in 2006.

Entrepreneurs, like Jack Henry and Jerry Hall, play a vital role in local economic development as key contributors to technological innovation, new investments, and new job growth. Home-grown entrepreneurs also add to their communities by conducting business locally, investing in community projects, and giving to local charities. The economic and social benefits from successful entrepreneurship can extend to the many.



# Definition of Terms

## Location Quotient

Location Quotient (LQ) measures the employment concentration of an industry within a specified area relative to the nation as a whole. It is calculated by dividing the region’s industry employment share by the nation’s industry employment share. A LQ of 1.00 or greater means that there is a higher concentration in the region for an industry than exists nationally. The Location Quotient is a quick guide to understanding key industries within an area, especially when coupled with employment growth trends that shift-share analysis can reveal.

<b>What Does the Location Quotient (LQ) Mean?</b>		
	<b>Low Employment Growth</b>	<b>High Employment Growth</b>
<b>High LQ</b>	<b>Important industries that may require attention</b>	<b>Important growth industries</b>
<b>Low LQ</b>	<b>Industries with lower potential for local economy</b>	<b>Potential emerging industries</b>

Statewide Location Quotients are provided by cluster in the summary section and in each cluster and sub-cluster section. Top industry and county Location Quotients are included in each cluster and sub-cluster section.

## Shift Share Analysis

Shift Share analysis measures employment changes in an industry, cluster, or regional industry mix. It breaks out employment changes into three components: National Share (NS), Industry Mix (IM), and Regional Shift (RS).

**National Share (NS)**—is the share of regional employment changes attributed to factors in the national economy.

**Industry Mix (IM)**—identifies local industry employment changes attributed to national industry employment changes.

**Regional Shift (RS)**—identifies a region’s lagging or leading industries. This is also considered a measure of a region’s competitiveness.

The shift share analysis is provided in the summary section and in each cluster and sub-cluster section under the heading Cluster Statistics.

## Summary of Clusters

	Agribusiness	Automotive	Defense Homeland Security	Energy	Finance	Information Technology	Life Sciences	Transportation Logistics	All Clusters
Employer Units (2006)	3,040	258	348	696	9,769	2,345	1,034	12,468	29,349
Employment (2006)	88,645	36,223	16,922	20,275	132,036	38,604	31,295	175,064	519,316
Average Employment per Establishment (2006)	29	140	49	29	14	16	30	14	18
Percent of Total Missouri Jobs (2006)	3.86%	1.58%	0.74%	0.88%	5.75%	1.68%	1.36%	7.62%	22.62%
Average Annual Wages (2005)	\$39,605	\$54,167	\$77,935	\$58,053	\$52,206	\$70,938	\$66,505	\$43,374	\$51,285
Location Quotient (2006)	1.19	1.65	0.78	1.29	1.04	0.79	0.91	1.05	1.06
Percent Change from 2001 Location Quotient	5.25%	3.91%	38.25%	-1.91%	-2.34%	8.69%	11.95%	0.11%	1.22%
Projected Employment Change (2011)	1.03%	-1.43%	4.61%	1.72%	0.12%	9.25%	11.41%	3.81%	2.88%
Percentage of Firms with less than 50 Employees	91%	66%	88%	93%	92%	93%	91%	94%	93%
Net Percentage Change in Jobs (2001-2006)	-8.9%	-12.2%	42.2%	-17.6%	1.4%	10.8%	17.4%	0.3%	-3.40%
Employment Change in Jobs (2001-2006) Total Change	-8,654	-5,051	5,024	-4,320	1,798	3,760	4,629	446	-18,482
Employment Change from 2001 attributed to National Factors	2,498	1,059	305	631	3,343	894	685	4,482	13,805
Employment Change from 2001 attributed to Industry Factors	-14,590	-7,066	180	-4,315	3,204	195	932	-2,178	-32,559
Employment Change from 2001 attributed to Missouri's Competitiveness	3,438	956	4,538	-637	-4,749	2,670	3,013	-1,858	272

Note: Some industries are in more than one cluster, so the sum of individual clusters will not equal the total for all clusters.