TECHPOINT

03·2014

TECHNOLOGY WORKFORCE REPORT

Employment Trends and the Demand for Computer-Related Talent in Central Indiana

Technology Workforce Report

Employment Trends and the Demand for Computer-Related Talent in Central Indiana

Introduction

In 2012, the Central Indiana Corporate Partnership (CICP), with funding from Lilly Endowment, commissioned the Battelle Technology Partnership Practice to conduct the study "Indiana's Competitive Economic Advantage: The Opportunity to Win the Global Competition for College Educated Talent." The study found that "...Indiana is not keeping pace with the evolution to a knowledge-based economy, where the quality of jobs and income levels are based on the skills and education level of the workforce."[1] Ultimately, the study concluded that, "If Indiana is to achieve rising per capita incomes that close the gap with the U.S. average, it must accelerate the creation of high-skill jobs." Information technology, according to the findings in the study, represents both a growing industry cluster and one with a high percentage of high-skilled jobs. Computer-related occupations, for example, were one of only two occupational groups that are growing at a rate faster than the national average.

Figure 1: Occupation Growth Trends - Indiana vs. U.S. (2004-10)

High Skilled Occupational Group	Current Employment & Trends			
	Indiana Empl. 2010	Indiana Location Quotient, 2010	Indiana Empl. % Change, 2004–10	U.S. Empl. % Change, 2004–10
All Occupations	**2,724,850**	**1.00**	**-4.9%**	**-0.8%**
Management	104,600	0.81	-14.5%	-3.0%
Business & Financial Operations	92,730	0.71	-3.1%	10.9%
Computer-Related	44,660	0.66	19.0%	12.8%
Engineers	27,590	0.88	-0.9%	5.2%
Medical & Clinical Lab Technicians	10,370	1.01	4.3%	11.4%
Engineering Technicians	8,730	0.93	-20.5%	-15.3%
Physical Scientists	4,000	0.72	20.8%	11.4%
Life Scientists	*2,430*	*0.45*	*10.0%*	*26.8%*
Life Science Technicians	2,170	1.13	9.0%	14.2%
Physical Science Technicians	1,300	0.76	-16.7%	0.8%

Source: Battelle analysis of BLS, Occupational Employment Statistics data.

In addition to being a growing occupational group, the Battelle study also found that the information technology industry cluster had the highest share of high-skilled (college degree required) jobs of any industry group in the state in 2010. Half of all occupations in the information technology sector in Indiana are identified as high-skilled jobs.

Figure 2: Share of Industry Cluster Employment in High-Skilled Occupations, Indiana vs. U.S., 2010

Major Indiana Industry Clusters	Indiana Employment, 2010		Share in High-Skilled Occupations, 2010	
	All Jobs	High-Skilled Jobs	Indiana	U.S.
Total, All Industries	**2,724,850**	**298,580**	**11%**	**14%**
Subtotal, All Major Industry Clusters*	**866,950**	**140,580**	**16%**	**26%**
Advanced Manufacturing	376,960	36,620	10%	16%
Life Sciences	50,002	⇧	⇧	51%
Corporate Headquarters & Business Services	85,110	23,220	27%	31%
Energy	19,930	3,470	17%	18%
Finance & Insurance	93,480	27,560	29%	36%
Freight Transportation, Distribution, & Logistics	217,830	14,490	7%	11%
Information Technology	43,010	21,410	50%	56%
Engineering, Mgmt & Technical Consulting Services	30,630	13,810	45%	54%
Subtotal, All Other Industries (outside of clusters)**	**1,857,900**	**158,000**	**9%**	**9%**

Source: Battelle analysis of occupation-industry matrix data provided by the IN Dept. of Workforce Development and BLS (national).

Further, in November of 2013, *Forbes* published an article that named Indianapolis one of the Top 10 metros for technology job growth.[2] This employment and job creation data is magnified by the growing strength of the technology sector. Since 2007, for example, twelve companies that create IT/technology products or are highly technology enabled have been acquired or gone through initial public offerings (IPOs) that have generated $4.5 billion in market value and have created more than 3,700 jobs. All of those companies started or at least experienced their material growth in the past 10 years. In addition to these transactions, Interactive Intelligence has grown to a $1.6 billion company and the 203rd largest software company in the world.[3]

Figure 3: Technology Firms IPOs/Acquired Since 2007, Central Indiana

Company	Market Value	Jobs*	IPO/Acquired
Angel Learning	$95M	111	Acquired 2009
Angie's List	$900M	1,400	IPO 2011
Aprimo	$525M	239	Acquired 2011
Autobase	Private	150	Acquired 2007
Compendium	Private	25	Acquired 2013
Consona	$260M	125	Acquired 2009
Exacq Technologies	$150M	74	Acquired 2013
ExactTarget	$2.5B**	1,400	IPO 2012 Acquired 2013**
First Internet Bank	$97.1M	114	IPO 2013
iGoDigital	$21M	50	Acquired 2012
MyJibe	Private	Private	Acquired 2011
Stoneware	Private	67	Acquired 2012
Total	**$4.5B**	**3,755**	

**All jobs are in Indiana and are job totals when the companies went public or were acquired.

This tech company success and growth coupled with Battelle's findings that computer-related jobs present a unique opportunity to grow Indiana's skilled workforce, drove TechPoint, CICP's IT/tech sector growth initiative, to better understand the demand for computer-related jobs, the challenges for attracting, retaining and developing talent for those jobs, and the opportunities to address those challenges.

Consequently, with support from Lilly Endowment and Katz, Sapper & Miller, TechPoint designed a study to analyze employment data and trends and to survey Central Indiana technology firms. Together, the data analysis and workforce survey lend both quantitative and qualitative insight. To execute the study, TechPoint solicited bids from various consulting firms and ultimately selected Morris, Lloyd & Associates, LLC for the Tech Workforce Analysis component of the study and the Loyalty Research Center for the Tech Workforce Survey.

Methodology and Definitions

Methodology

The core of this study is anchored upon quantitative analysis. With support from Morris, Lloyd & Associates, LLC the quantitative analysis uses sources like the Bureau of Labor Statistics (BLS), the Indiana Department of Workforce Development (DWD) - Hoosiers by the Numbers, and O*Net. These data sources are used to identify employment trends across the nation, state, and Central Indiana. Burning Glass Labor/Insight, a real-time job postings aggregator, is used to quantify the demand for computer-related jobs. Burning Glass Labor/Insight searches for job listings from over 17,000 sources nationwide, including employer websites, job boards, newspapers, and government agencies to compile a database of job listings that is updated daily. Burning Glass Labor/Insight cannot distinguish between job replacements and new jobs; rather the data serves to identify market trends by looking at comprehensive aggregated job listings.

Defining Computer-Related Occupations

Information technology jobs have long been difficult to identify because the existing classification systems often attribute tech jobs to vertical industries rather than placing them with matching function careers. For example, a university web developer would be classified as a part of the education industry, or a quality assurance software engineer at a pharmaceutical company would be included in employment numbers for the life sciences industry. O*Net ─ funded by the U.S. Department of Labor ─ has developed an aggregated computer-related data set that takes into consideration the educational requirements, skills, and industry classifications. This study will use O*Net's Information Technology Career Cluster to define computer-related occupations. By defining employment on the occupational level, rather than the industry level, we will get a comprehensive look at the supply and demand for technically skilled talent.

Figure 4: Computer-Related Occupations

SOC Code	8 Digit SOC Code (if applicable)	Occupation Title
11-3021.00		Computer and Information Systems Managers
11-9041.00		Architectural and Engineering Managers
15-1111.00		Computer and Information Research Scientists
15-1121.00		Computer Systems Analysts
15-1122.00		Information Security Analysts
15-1131.00		Computer Programmers
15-1132.00		Software Developers, Applications
15-1133.00		Software Developers, Systems Software
15-1134.00		Web Developers
15-1141.00		Database Administrators
15-1142.00		Network and Computer Systems Administrators
15-1143.00		Computer Network Architects
	15-1143.01	Telecommunications Engineering Specialists
15-1151.00		Computer User Support Specialists
15-1152.00		Computer Network Support Specialists
15-1199.00		Computer Occupations, All Other
	15-1199.01	Software Quality Assurance Engineers and Testers
	15-1199.02	Computer Systems Engineers/Architects
	15-1199.03	Web Administrators
	15-1199.06	Database Architects
	15-1199.07	Data Warehousing Specialists
	15-1199.08	Business Intelligence Analysts
	15-1199.09	Information Technology Project Managers
	15-1199.11	Video Game Designers
	15-1199.12	Document Management Specialists
17-2061.00		Computer Hardware Engineers
25-1021.00		Computer Science Teachers, Postsecondary
25-1032.00		Engineering Teachers, Postsecondary
27-1014.00		Multimedia Artists and Animators
27-1024.00		Graphic Designers
43-9011.00		Computer Operators
51-4012.00		Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic

*O*Net Online, http://www.onetonline.org/find/career?c=11&g=Go*

Computer-Related Employment Trends

Segmenting the Workforce

In 2012, there were 61,050 people employed in computer-related occupations in the state of Indiana. The chart below shows the employment breakdown by occupation:

Figure 5: Computer-Related Employment by Occupation, Indiana, 2012

SOC Code	Occupation Title	2012 Employment
15-1121.00	Computer Systems Analysts	7,360
15-1151.00	Computer User Support Specialists	7,190
15-1132.00	Software Developers, Applications	6,410
15-1142.00	Network and Computer Systems Administrators	6,290
15-1131.00	Computer Programmers	4,580
11-3021.00	Computer and Information Systems Managers	4,040
11-9041.00	Architectural and Engineering Managers	3,600
15-1133.00	Software Developers, Systems Software	3,590
27-1024.00	Graphic Designers	3,120
15-1199.00	Computer Occupations, All Other	2,650
15-1143.00	Computer Network Architects	1,890
15-1141.00	Database Administrators	1,760
15-1134.00	Web Developers	1,620
15-1152.00	Computer Network Support Specialists	1,490
51-4012.00	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	1,360
43-9011.00	Computer Operators	1,070
25-1032.00	Engineering Teachers, Postsecondary	1,060
25-1021.00	Computer Science Teachers, Postsecondary	990
15-1122.00	Information Security Analysts	620
17-2061.00	Computer Hardware Engineers	190
27-1014.00	Multimedia Artists and Animators	170
15-1111.00	Computer and Information Research Scientists	**
	TOTAL:	61,050

Bureau of Labor Statistics, 2012

Geographically, 48 percent of computer-related jobs are located in the Indianapolis-Carmel Metropolitan Statistical Area (MSA), with the next highest concentration being the Ft. Wayne MSA, which is home to 8 percent of the state's computer-related jobs.

Figure 6: Concentration of Computer-Related Occupations, by MSA, 2012

Indiana MSA	Computer-Related Employment 2012	% of Total Computer-Related Employment
Indiana (Statewide)	**61,050**	
Indianapolis-Carmel	29,230	48%
Ft. Wayne	4,790	8%
Gary	2,910	5%
Evansville	2,500	4%
South Bend	2,250	4%
Bloomington	1,810	3%
Columbus	1,470	2%
Lafayette	970	2%
Elkhart	890	1%
Kokomo	600	1%
Muncie	600	1%
Terre Haute	520	1%
Michigan City	340	1%
Anderson	170	0%

Bureau of Labor Statistics, 2012

Because the strong majority of computer-related occupations are located in the Indianapolis-Carmel MSA, this study focuses data reporting on the technology community in the state's capital city and surrounding area.

Computer-Related Occupation Growth

To provide context to the employment numbers above, employment growth from 2009-2012 was analyzed. Before focusing on computer-related occupations, here is the baseline against growth trends across all occupations:

Figure 7: Employment Change, All Occupations, 2009-2012

Location	Total Employment 2009	Total Employment 2012	Percent Change
U.S.	130,647,610	130,287,700	-0.3%
Indiana	2,787,780	2,811,920	0.9%
Indianapolis-Carmel	870,660	888,880	2.0%

Bureau of Labor Statistics, 2012

This data shows that job growth overall has been very slow both nationally and in Indiana. However, computer-related occupations, as shown below demonstrate a strong positive growth trajectory both on a state and national level. In fact, computer-related employment in the Indianapolis-Carmel MSA is outpacing the national employment growth rate.

Figure 8: Employment Change, Computer-Related Occupations, 2009-2012

Location	Computer-Related Employment 2009	Computer-Related Employment 2012	Percent Change
U.S.	4,134,050	4,418,040	6.4%
Indiana	57,750	61,050	5.4%
Indianapolis-Carmel	27,100	29,230	7.3%

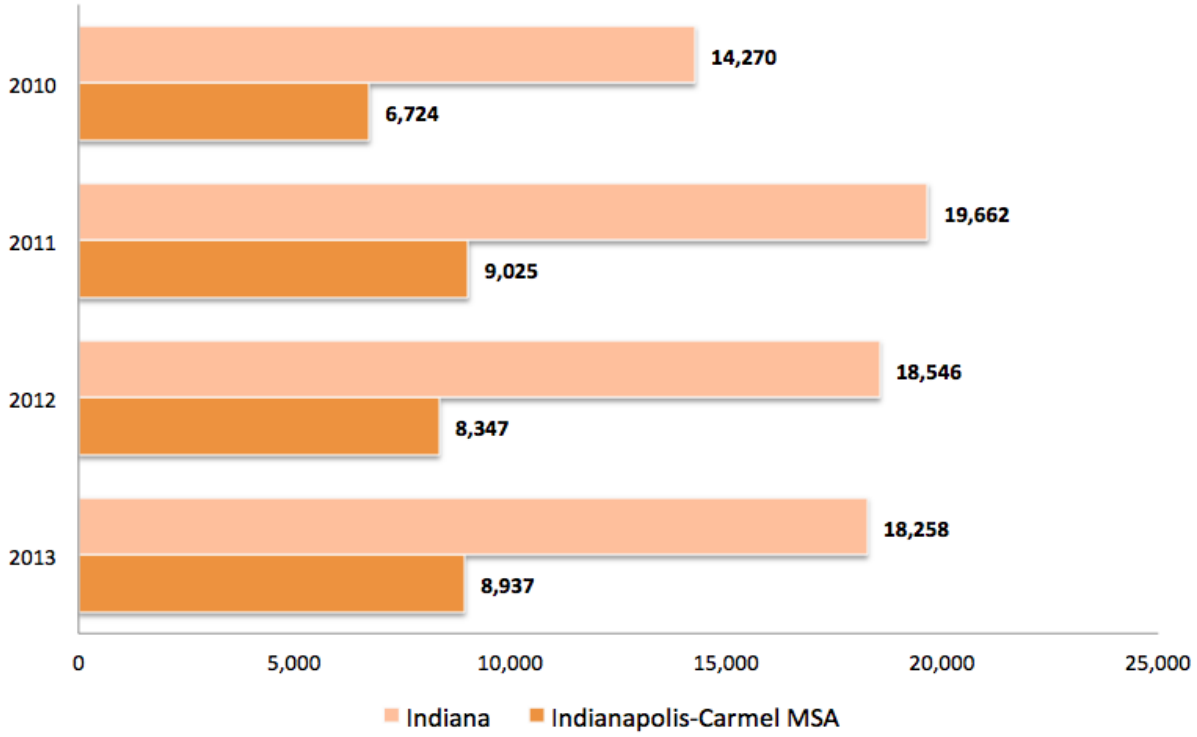
Bureau of Labor Statistics, 2012

This employment data indicates clear growth of computer-related occupations leading into 2013. In order to get a better real time analysis of this growth trend we will look to Burning Glass Labor/Insight data for current demand data and trends.

Current Demand Trends

Burning Glass Labor/Insight found that in 2013, there were a total of 18,258 computer-related job postings statewide, 8,937 of which were located in the Indianapolis-Carmel MSA. That is a decline of two percent statewide and a growth of seven percent in the Indianapolis-Carmel MSA when looking at the year-to-year comparison with computer-related job postings from 2012.

Figure 9: Computer-Related Job Postings, Indiana and Indianapolis-Carmel MSA, 2010-2013



Burning Glass - Labor/Insight, 2014

Figure 10 illustrates the trends in demand for computer-related job postings from 2010-2013. There was a 27 percent increase in number of postings statewide from 2010 to 2011, then a slight decrease before leveling off of demand from 2011 to 2013. In the Indianapolis-Carmel MSA

there was a 25 percent increase from 2010 to 2011, an eight percent decrease from 2011 to 2012, and a seven percent increase from 2012 to 2013. This data suggests that despite the slight (two percent) dip statewide that there is positive growth trajectory in the Indianapolis-Carmel MSA.

To quantify this demand Burning Glass Labor/Insight can, in some cases, identify the educational background required in job postings. Of those postings where Burning Glass Labor/Insight could identify education requirements, 85 percent statewide and 88 percent in the Indianapolis-Carmel MSA required a bachelor's or master's degree.

Figure 10: Job Postings Requiring at Least a Four-Year Degree, Indiana and Indianapolis-Carmel MSA, 2013

	Total 2013 Job Postings	Total 2013 Postings with Education Background Identified	Total 2013 Postings Requiring at Least a Bachelor's Degree	% of 2013 Postings with Education Backrounds of at Least a Bachelor's Degree
Indiana	18,258	9,480	8,041	85%
Indianapolis-Carmel MSA	8,937	4,625	4,062	88%

Burning Glass - Labor/Insight, 2014

When looking at demand in total, computer-related occupations made up six percent of the total job postings in the state and eight percent of total postings in the Indianapolis-Carmel MSA. Looking at individual occupations most in demand across all industries, software developers (applications) were sixth in the Indianapolis-Carmel MSA, and eleventh in the state, only behind sales, customer service representatives, and truck drivers. Among the six occupations with the most job postings in the Indianapolis-Carmel MSA, software developers (applications) earn the highest median salary.

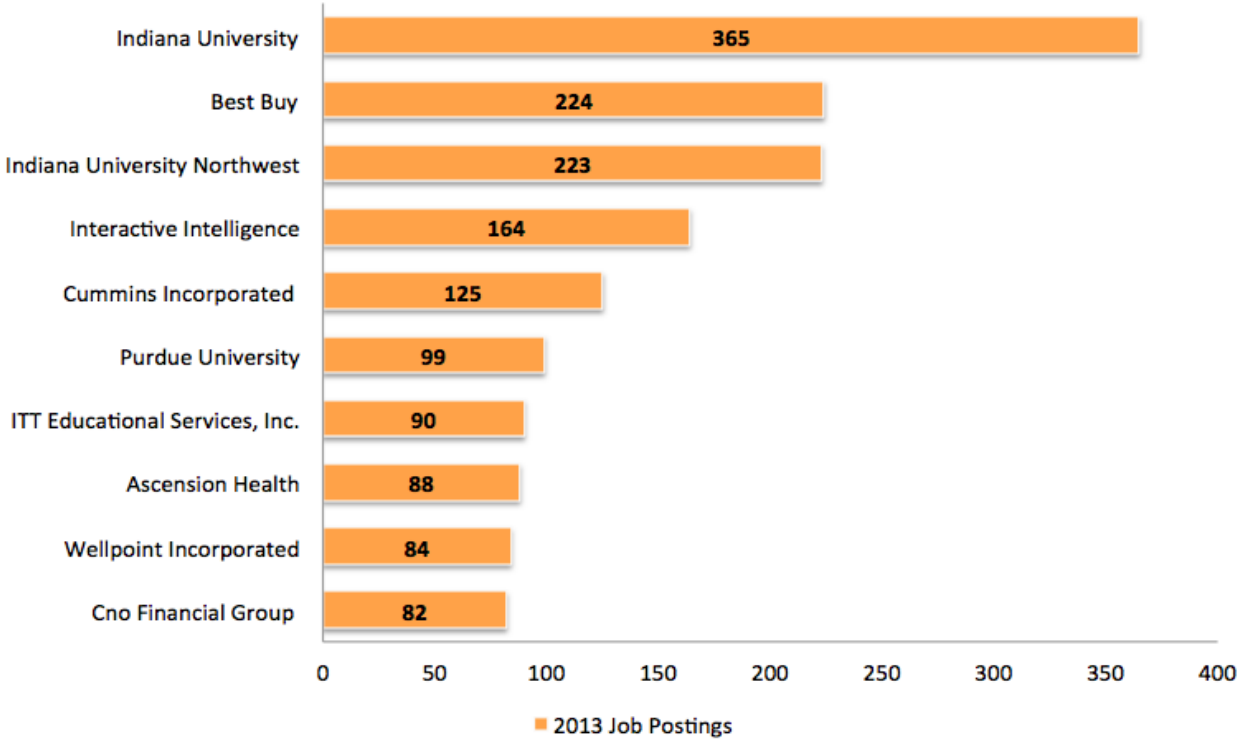
Figure 11: Occupations with the Most Job Postings, Indianapolis-Carmel MSA, 2013

Occupation Title	2013 Job Postings	2012 Median Salary
Retail Salesperson	4,314	$ 20,460.00
Sales Representatives, Wholesale And Manufacturing, Except Technical And Scientific Products	4,025	$ 55,880.00
Customer Service Representatives	3,440	$ 32,240.00
Heavy And Tractor-Trailer Truck Drivers	2,811	$ 38,600.00
First-Line Supervisors Of Retail Sales Workers	2,810	$ 36,940.00
Software Developers, Applications	2,562	$ 77,700.00

Burning Glass - Labor/Insight, 2014 & Bureau of Labor Statistics OES

It is important to note that nine of the top ten employers seeking computer-related talent in 2013 were tech-enabled companies, indicating that Indiana's supply of computer-related talent impacts more than just traditionally defined IT/tech product companies.

Figure 12: Companies with the Highest Volume of Computer-Related Job Postings, Indiana, 2013



Burning Glass - Labor/Insight, 2014

Conclusion

Through this analysis we sought to quantify employment trends and the existing demand for computer-related talent in Central Indiana, finding that computer-related jobs are growing rapidly, a trend matched by the increasing number of job postings. These findings, consistent with the 2012 Battelle study, establish technology as a sector positioned to be at the forefront of Indiana's transition to a knowledge-based economy. Computer-related occupations overwhelmingly require a college education with at least a bachelor's degree and pay more than two times the median salary of all occupations both statewide and in the Indianapolis-Carmel MSA. This cluster of high-skilled occupations, when combined with the current market demand, represents enormous opportunity.

In our next report we will look to qualify the demand for computer-related talent in Central Indiana. To do this we will release results from the fall 2013 workforce survey administered by Customer Loyalty Center and TechPoint and completed by 26 Central Indiana technology employers. Eighty-five percent of surveyed companies found there to be a high level of competition for talent in Indiana and 65 percent of companies perceive a skills gap between available tech talent and the talent needed to fill their open positions. The next report will aim to

define the computer-related skills and job functions that are most important to company growth in Central Indiana.

---

[1] Battelle Technology Partnership Practice, "Indiana's Competitive Economic Advantage: The Opportunity to Win the Global Competition for College Educated Talent", Central Indiana Corporate Partnership, 2012, https://mpcms.blob.core.windows.net/e30e30cc-342f-4bd2-9b6e-c5cb1c39f202/docs/1d2a86b8-577b-4cae-8223-a23222396e09/cicp_battelle-college-workforce-study.pdf

[2] Joe Kotkin, "The Surprising Cities Creating the Most Tech Jobs", *Forbes*, November 11, 2013. http://www.forbes.com/sites/joelkotkin/2013/11/20/the-surprising-cities-creating-the-most-tech-jobs/http://www.forbes.com/sites/joelkotkin/2013/11/20/the-surprising-cities-creating-the-most-tech-jobs/

[3] Christine Holley, "Interactive Intelligence Named Among World's Largest Software and Services Providers", Interactive Intelligence Group Inc., September 11, 2013. http://investors.inin.com/releasedetail.cfm?releaseid=790117

Brought to you by

For more information about this report, please contact Sally Reasoner at sally@techpoint.org

111 Monument Circle
Suite 1800
Indianapolis, IN 46204

317.274.2080

techpoint.org