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North Central Indiana Regional Analysis: Demographics, Economy, Entrepreneurship and Innovation

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Prepared for:
JUMPSTART COMMUNITY ADVISORS

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Revised February 2011

NORTH CENTRAL INDIANA REGIONAL ANALYSIS:

DEMOGRAPHICS, ECONOMY, ENTREPRENEURSHIP AND INNOVATION

CENTER FOR ECONOMIC DEVELOPMENT

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EXECUTIVE SUMMARY

This report has been prepared for JumpStart Community Advisors by the Center for Economic Development at Cleveland State University. The objective of this study is to provide background analysis of the North Central Indiana[1] area for JumpStart Community Advisors as they conduct interviews and research to create a Regional Entrepreneurial Action Plan Initiative in the North Central Indiana area.

This report is organized into three chapters: Demographics, Economy and Industry, and Entrepreneurship and Innovation. Each chapter contains the same structure: a literature review or a review of other studies and an analysis conducted by the Center for Economic Development. In most instances in the Center's analysis, a graphic or table is displayed, followed by bullet points that highlight the observations of data collected and studied. In order to create a benchmarking system, we compared North Central Indiana (and its components) to the state of Indiana and the United States; when data for North Central Indiana was not available, the state of Indiana data was substituted.

DEMOGRAPHICS

The demographic information gathered on North Central Indiana revealed interesting trends and snapshots about the population. Overall, from 2000 to 2009, North Central Indiana has seen an increase in population with an overall increase in the 4-county area of 4.23%. Most of this population growth is in Elkhart County, which recorded 9.69% population growth over this reference period, while St. Joseph County (0.77%), Kosciusko County (3.30%), and Marshall County (3.93%) had much smaller population growth.

The workforce of North Central Indiana is moderately educated and skilled. When comparing educational attainment, the North Central Indiana region is, on average, on par with the state of Indiana but lower than the United States. A closer look at educational attainment by county reveals that the educational achievement of residents of St. Joseph County is significantly higher than the other North Central Indiana counties. Among the population greater than 25 years old, St. Joseph County exceeds all other counties and the state of Indiana for the percentage of bachelor's degrees (15.89%) and master's degrees (9.54%). The achievement gap is glaring when examining Elkhart County, where 18.08% of the population greater than 25 years old (almost 1 in 5) does not have even a high school diploma or GED; St. Joseph County (12.19%) and Kosciusko County (12.31%) have lower rates.

Major indicators of economic prosperity are a high per capita income and a low poverty rate. From 2000 to 2008, per capita income increased by 1.97% in the region. This increase was fueled mostly by per capita income growth in St. Joseph and Kosciusko Counties, both of which grew by roughly 5% over this 8-year period. In addition, poverty rates in 2009 for two North Central Indiana counties, St. Joseph (16.22%) and Elkhart (14.91%), were higher than both the state of Indiana (14.4%) and the United States (14.3%).

It is clear that of the four counties in North Central Indiana, Elkhart County has an exceptionally difficult situation, marked by a growing population, low educational attainment, low per capita income and

[1] North Central Indiana encompasses 4 counties: St. Joseph, Elkhart, Kosciusko, and Marshall

declining per capita income, and an unmatched high poverty rate. Elkhart County accounts for 45% of the population of North Central Indiana.

INDUSTRY AND ECONOMY

Over the last 30 years, the economy of North Central Indiana has outperformed the state of Indiana in measures of economic growth (employment, gross product, and average wage), but not the United States. Examining gross product and average wage shows that there has been a widening gap between the performance of North Central Indiana and the United States, so much so that between 1979 and 2008 the rate of gross product growth in the United States was 48 percentage points higher than in North Central Indiana. This widening gap shows the significant economic issues of the North Central Indiana economy. Recently, there has been a progressive decline in employment from 2006 to 2009 and this accounts for one of the sharpest declines in North Central Indiana's 30-year employment history; over this period, the economy shed 15% of its jobs.

Manufacturing continues to be an important part of the North Central Indiana economy and is concentrated in orthopedic medical device manufacturing in Kosciusko County and Recreational Vehicle and Manufactured Housing manufacturing in Elkhart County. The world's three leading orthopedic device companies began in Kosciusko County (DePuy, Zimmer, and Biomet) and remain there today. The industry cluster of orthopedic medical device manufacturing is an important hub for the North Central Indiana region. Strategically, Kosciusko County has sought to expand this cluster through an orthopedics community initiative-- OrthoWorx—and strategic outreach. Conversely, there has been a downturn in the Recreational Vehicle and Manufactured Housing manufacturing (Elkhart County) because this industry was directly affected by a decrease in consumption associated with the most current recession.

The Center's analysis focused on industries that outperform others and are considered "winning industries." There are nine (Tier I & II) winning industries in North Central Indiana. These industries vary in size and scope, but have in common a focus on gross product growth, regional specialization, and livable wages. Of these nine industries, six are in the Professional, Scientific, and Technical Services sector, three in the Health Care sector, and one in the Information sector.

ENTREPRENEURSHIP AND INNOVATION

Most of the entrepreneurship and innovation literature focuses on expanding the orthopedic medical device industry and fostering innovation and collaboration with heath care industries to facilitate the growth of the orthopedic medical device cluster, but not much literature discusses the fostering of early-stage capital. There is a small amount of venture capital in the state of Indiana and few venture capital firms from outside the state have invested in Indiana start-ups. In North Central Indiana, there are two early-stage investment firms and two venture capital firms compared with statewide totals of 12 early-stage investment firms, 36 venture capital investment firms, four private equity firms, and six management buyout firms. With the lack of early- and late-stage investment, the investment climate needs to be fostered.

Patent data is used as a proxy for innovation. Of the 10,066 patents (those already granted and applications in the state of Indiana from January 2006 to September 2010), 2,036 (20%) were in the

North Central Indiana region. Of those patents identified with North Central Indiana, 48% of patents had an assignee from North Central Indiana, indicating that businesses within North Central Indiana are one of the major drivers of local patents. In addition, the top three largest scientific fields were in medical device technologies indicating that this is a technology strength for the North Central Indiana region.

CONCLUDING COMMENTS

There are significant challenges to overcome—structural and cultural—in the North Central Indiana economy for the region to become a leader in innovation and entrepreneurship. Until 2006, North Central Indiana was doing well by many economic measures in comparison to the state of Indiana, but recently the region has not been able regain its footing. In comparison to the United States, the region also has significant ground to cover to meet national standards. The leadership of the region has had the foresight to address these declining trends by creating a regional economic engine (Michiana Area Council of Governments (MACOG)) and to focus on taking action to better the community. The new initiative to create a Regional Entrepreneurial Action Plan Initiative to accelerate entrepreneurship and innovation may have the potential to reverse the declining trends.

CHAPTER 1: DEMOGRAPHIC ANALYSIS

The analysis, conducted by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs, examines the demographic profile of North Central Indiana. This section describes the socio-demographic characteristics of North Central Indiana. It includes analysis of population, population distribution by race and age, concentration of foreign-born residents, income, poverty, and educational attainment.

North Central Indiana is defined for this study as a 4-county region[2] that includes the Elkhart-Goshen Metropolitan Statistical Area (Elkhart County) as well as the Plymouth (Marshall County) and Warsaw (Kosciusko County) Micropolitan areas; St. Joseph County is in the South Bend-Mishawaka Metropolitan Statistical Area (MSA) [3] but is only displayed in this study at the county level because this MSA includes Cass County, Michigan.

In order to create a benchmarking system, we compared North Central Indiana (and its components) to the state of Indiana and the United States.

[2] North Central Indiana encompasses 4 counties: Elkhart, Kosciusko, Marshall, and St. Joseph counties.
[3] The South Bend-Mishawaka MSA includes 2 counties: St. Joseph County in Indiana, and Cass County in Michigan.

POPULATION & GROWTH

Table 1. Population Change for North Central Indiana Counties, the State of Indiana, and United States, 2000-2009

Area	2000	2009	Difference (2000-2009)	Percent Change (2000-2009)
St. Joseph	265,559	267,613	2,054	0.77%
Elkhart	182,791	200,502	17,711	9.69%
Kosciusko	74,057	76,499	2,442	3.30%
Marshall [A]	45,128	46,903	1,775	3.93%
North Central Indiana (4-County Region)	567,535	591,517	23,982	4.23%
Indiana	6,080,485	6,423,113	342,628	5.63%
United States	281,421,906	307,006,556	25,584,650	9.09%

Sources:
U.S. Census Bureau, 2000 Decennial Census
U.S. Census Bureau, 2009 American Community Survey
[A] U.S. Census Bureau, 2009 Population Estimates Program

- The population of the North Central Indiana region increased from 567,535 residents in 2000 to 591,517 residents in 2009, growing by 4.23% (Table 1).
- Elkhart County had the largest population increase of 9.69%; this rate of growth was significantly higher than any other county in the North Central Indiana region and the state of Indiana.
- St. Joseph County (0.77%), Kosciusko County (3.30%) and Marshall County (3.93%) reported small population increases from 2000 to 2009, and were notably smaller than the state of Indiana (5.63%) and the United States (9.09%).

RACE DISTRIBUTION

Table 2. Race Distribution for North Central Indiana Counties, the State of Indiana, and United States, 2009

		White Alone		Black or African American Alone		Asian Alone		Two or More Races		Some Other Race		American Indian & Alaska Native Alone		Native Hawaiian & Other Pacific Islander Alone	
Area	2009 Total Population	Total	Percent of Total Population	Total	Percent of Total Population	Total	Percent of Total Population	Total	Percent of Total Population	Total	Percent of Total Population	Total	Percent of Total Population	Total	Percent of Total Population
St. Joseph	267,613	216,677	80.97%	32,605	12.18%	4,526	1.69%	7,703	2.88%	5,191	1.94%	620	0.23%	291	0.11%
Elkhart	200,502	167,693	83.64%	10,913	5.44%	2,527	1.26%	2,848	1.42%	14,860	7.41%	1,469	0.73%	192	0.10%
Kosciusko	76,499	71,683	93.70%	227	0.30%	908	1.19%	856	1.12%	2,726	3.56%	0	0.00%	99	0.13%
Marshall [A]	46,903	45,746	97.53%	343	0.73%	234	0.50%	404	0.86%	N/A	N/A	155	0.33%	21	0.04%
North Central Indiana (4-County Region)	591,517	501,799	84.83%	44,088	7.45%	8,195	1.39%	11,811	2.00%	22,777	3.85%	2,244	0.38%	603	0.10%
Indiana	6,423,113	5,502,046	85.66%	566,692	8.82%	90,593	1.41%	117,928	1.84%	131,257	2.04%	13,690	0.21%	1,163	0.02%
United States	307,006,556	229,773,131	74.84%	38,093,725	12.41%	13,774,611	4.49%	7,505,173	2.44%	14,948,363	4.87%	2,457,552	0.80%	454,001	0.15%

Sources:
U.S. Census Bureau, 2009 American Community Survey
[A] U.S. Census Bureau, 2009 Population Estimates Program

- The vast majority of the population in Kosciusko and Marshall Counties is classified as *White*. The shares of the *White* population in Kosciusko County (93.70%) and Marshall County (97.53%) are larger than the shares of the state of Indiana (85.66%) and the United States (74.84%). However, the *White* population of the 4-county region of North Central Indiana (84.83%) is below the state of Indiana.
- St. Joseph County's has the largest non-*White* population within the region (19.03%). The second largest racial category in the county is *Black or African American* (12.18%), which exceeds the state of Indiana (8.82%).
- In Kosciusko and Marshall Counties, less than 1% of the population is *Black or African American*.
- The second largest racial category in Elkhart County and Kosciusko County was *Some Other Race* (7.41% and 3.56% respectively).

AGE DISTRIBUTION

Table 3. Age Distribution for North Central Indiana Counties, the State of Indiana, and United States, 2009

		Under 5		5 to 19		20 to 29		30 to 39		40 to 49		50 to 59		60 & Over	
Area	2009 Total Population	Total	% of Population	Total	% of Population	Total	% of Population	Total	% of Population	Total	% of Population	Total	% of Population	Total	% of Population
St. Joseph	267,613	19,233	7.19%	57,817	21.60%	37,979	14.19%	34,236	12.79%	34,756	12.99%	34,937	13.06%	48,655	18.18%
Elkhart	200,502	17,429	8.69%	44,065	21.98%	27,479	13.71%	29,146	14.54%	25,708	12.82%	25,168	12.55%	31,507	15.71%
Kosciusko	76,499	5,558	7.27%	15,980	20.89%	9,602	12.55%	10,046	13.13%	10,516	13.75%	11,154	14.58%	13,643	17.83%
Marshall [A]	46,903	3,367	7.18%	10,423	22.22%	5,515	11.76%	5,678	12.11%	6,584	14.04%	6,364	13.57%	8,972	19.13%
North Central Indiana (4- County Region)	591,517	45,587	7.71%	128,285	21.69%	80,575	13.62%	79,106	13.37%	77,564	13.11%	77,623	13.12%	102,777	17.38%
Indiana	6,423,113	443,811	6.91%	1,331,135	20.72%	893,124	13.90%	828,113	12.89%	904,996	14.09%	864,271	13.46%	1,157,663	18.02%
United States	307,006,556	21,209,207	6.91%	62,425,270	20.33%	42,944,914	13.99%	40,328,948	13.14%	44,039,759	14.34%	40,532,426	13.20%	55,526,032	18.09%

Sources:
U.S. Census Bureau, 2009 American Community Survey
[A] U.S. Census Bureau, 2009 Population Estimates Program

- Elkhart County has a relatively young population. It had the largest percentage of total population for *Under 5* (8.69%). It also had the largest percentage of ages *30 to 39* (14.54%), as compared to the other regions in Table 3.
- Marshall County has a relatively older population. It had the largest percentage of total population for *60 and Over* (19.13%) compared to the other regions in Table 3.

FOREIGN BORN

Table 4. Population Born Outside the U.S. for North Central Indiana Counties, the State of Indiana, and United States, 2009

	2000			2009		
Area	Population	Total Foreign Born Population	Percent of Total Population	Population	Total Foreign Born Population	Percent of Total Population
St. Joseph	265,559	12,113	4.56%	267,613	N/A	N/A
Elkhart	182,791	12,982	7.10%	200,502	N/A	N/A
Kosciusko	74,057	2,142	2.89%	76,499	N/A	N/A
Marshall	45,128	1,998	4.43%	46,903	N/A	N/A
North Central Indiana (4-County Region)	567,535	29,235	5.15%	591,517	N/A	N/A
Indiana	6,080,485	186,534	3.07%	6,423,113	281,327	4.38%
United States	281,421,906	31,107,889	11.05%	307,006,556	38,517,104	12.55%

Note: Data for Elkhart, Kosciusko and St. Joseph Counties are not displayed because the number of sample cases is too small.
Source: U.S. Census Bureau Decennial Census, 2000; U.S. Census Bureau, 2009 America Community Survey

- The foreign-born population in North Central Indiana is relatively small, but it is higher than the state of Indiana. Both North Central Indiana (5.15%) and the state of Indiana (3.07%) had much lower percentages of foreign born than the United States (11.05%) in 2000 (Table 4).
- Elkhart County had the largest percentage of foreign born (7.10%) in 2000 than the other North Central Indiana counties. As shown in Table 2, Elkhart County had the highest share of people in the "*Some Other Race*" category in 2009.
- Kosciusko County had the smallest percentage of its population that was foreign born (2.89%) in 2000 compared to the other North Central Indiana counties.
- The share of foreign born in Indiana increased between 2000 and 2009 from 3.07% to 4.38%. No comparable data is available for North Central Indiana counties for 2009.

PER CAPITA INCOME

Table 5. Per Capita Personal Income for North Central Indiana Counties, the State of Indiana, and United States, 2000 & 2008

Area	2000	2008	Difference (2000-2008)	Percent Change (2000-2008)
St. Joseph	$33,453	$35,363	$1,910	5.71%
Elkhart	$33,381	$32,263	-$1,118	-3.35%
Kosciusko	$33,279	$34,941	$1,662	4.99%
Marshall	$30,297	$29,679	-$618	-2.04%
North Central Indiana (4-County Region)	$33,157	$33,809	$652	1.97%
Indiana	$34,333	$34,543	$210	0.61%
United States	$37,907	$40,166	$2,259	5.96%

Note: Per capita income adjusted for inflation to 2008 dollars
Source: U.S. Bureau of Economic Analysis

- Two of the four counties in North Central Indiana experienced a decline in their per capita income from 2000 to 2008: Elkhart County (-3.35%) and Marshall County (-2.04%). This indicates that residents of these counties are on average worse off financially than 8 years ago. In contrast, per capita income rose in St. Joseph (5.71%) and Kosciusko (4.99%) Counties.
- The per capita personal income of residents in St. Joseph County in 2000 was $33,453, lower than the state of Indiana's per capita income ($34,333); but, by 2008, St. Joseph County's per capita income increased by $1,910 to $35,363 as compared to the state of Indiana which only increased by $210 to $34,543.
- In 2008, North Central Indiana's per capita income ($33,809) was slightly lower than the state of Indiana ($34,543), but significantly lower than that of the United States ($40,166).
- Marshall County had the lowest per capita income of all North Central Indiana counties in both 2000 ($30,297) and 2008 ($29,679).

POVERTY LEVEL

Table 6. Population and Percentage of Residents below Poverty Level for North Central Indiana, Indiana, and United States, 2009

Area	2009 Total Population Below Poverty Level	Percentage of Total Population Below Poverty Level	Male Population Below Poverty Level	Percentage of Population Below Poverty Level (Male)	Female Population Below Poverty Level	Percentage of Population Below Poverty Level (Female)
St. Joseph	41,526	16.22%	17,606	14.24%	23,920	18.08%
Elkhart	29,439	14.91%	12,806	13.11%	16,633	16.68%
Kosciusko	8,129	10.85%	3,988	10.70%	4,141	11.00%
Marshall	N/A	N/A	N/A	N/A	N/A	N/A
North Central Indiana [A] (4-County Region)	N/A	N/A	N/A	N/A	N/A	N/A
Indiana	896,972	14.40%	397,941	12.99%	499,031	15.76%
United States	42,868,163	14.34%	19,183,762	13.07%	23,684,401	15.55%

Note: [A] Data for Marshall County was not available and therefore data for the North Central Indiana Region (4-County Region) could not be calculated.
Percentage of population below poverty level = Total population below poverty level/population for whom poverty status is determined.
Source: U.S. Census Bureau, 2008 American Community Survey

- Even though St. Joseph County had the highest per capita income in the region (Table 5), it also had the highest poverty rate in 2009 (16.22%) compared to Elkhart County (14.91%) and Kosciusko County (10.85%). St. Joseph County also had a higher poverty rate than the state of Indiana (14.40%) and the United States (14.34%) (Table 6).
- Kosciusko County had the lowest poverty rate of all counties in North Central Indiana for total population (10.85%), male population (10.70%), and female population (11.00%).

EDUCATION MEASURES

Table 7. Educational Attainment for Residents 25 Years and Over for North Central Indiana Counties, the State of Indiana, and the United States, 2009

		Less Than 9th Grade		9th to 12th Grade No Diploma		High School Graduate, GED, or Alternative		Some College, No Degree		Associate's Degree		Bachelor's Degree		Graduate or Professional Degree	
Area	2009 Total Population Over 25 Years Old	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older	Total	% Population 25 Years and Older
St. Joseph	170,341	5,981	3.51%	14,787	8.68%	56,475	33.15%	38,674	22.70%	11,118	6.53%	27,063	15.89%	16,243	9.54%
Elkhart	125,814	9,344	7.43%	13,400	10.65%	44,428	35.31%	24,940	19.82%	9,764	7.76%	15,520	12.34%	8,418	6.69%
Kosciusko	50,382	2,628	5.22%	3,576	7.10%	20,169	40.03%	11,279	22.39%	3,284	6.52%	6,109	12.13%	3,337	6.62%
Marshall	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North Central Indiana [A] (4-County Region)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indiana	4,193,210	184,153	4.39%	376,785	8.99%	1,487,584	35.48%	884,718	21.10%	315,650	7.53%	606,497	14.46%	337,823	8.06%
United States	201,952,383	12,640,961	6.26%	17,144,287	8.49%	57,551,671	28.50%	43,087,484	21.34%	15,192,326	7.52%	35,494,367	17.58%	20,841,287	10.32%

Note: [A] Data for Marshall County was not available and therefore data for the North Central Indiana Region (4-County Region) could not be calculated.
Source: U.S. Census Bureau, 2009 American Community Survey One-Year Estimate

- St. Joseph County has an educated population. For the population greater than 25 years old, St. Joseph County exceeds all other counties and the state of Indiana in the percentage of bachelor's degrees (15.89%) and master's degrees (9.54%).
- In Elkhart County, for the population greater than 25 years old, 18.08% do not have a high school diploma. Among the three counties in North Central Indiana, Elkhart County has the highest percentage of population with an associate's degree. The largest educational attainment category for Elkhart County, as well as for the other two counties is High *School Graduate, GED, or Alternative* (35.31%).

CHAPTER 2: ECONOMY AND INDUSTRY

The analysis conducted by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs examines the economic profile of North Central Indiana. First, it summarizes information from other studies that were conducted about the North Central Indiana economy. Second, it describes major findings from an analysis conducted by the Center for Economic Development.

The analytical section conducted by the Center for Economic Development includes analysis of trends in total employment, gross product, and average wage. It identifies high-performing (winning) industries, top employers, economic inclusion, and economic development organizations.

North Central Indiana is defined in this study as a 4-county region that includes Elkhart County, Kosciusko County, Marshall County, and St. Joseph County. In order to create a benchmarking system, we compared North Central Indiana (and its components) to the state of Indiana and the United States.

REVIEW OF OTHER STUDIES: ECONOMY

ECONOMIC CLIMATE

A study conducted by the Indiana Business Research Center[4] addressed the challenges of the economic climate in the North Central Indiana region:

- The North Central Indiana region faces serious setbacks because of the Great Recession including slowed production, significant job loss, and shrinking real wages.
- Manufacturing is the dominate industry in this region; because of decreased demand and slowed production, gross product has decreased and there has been significant employment losses due to mass layoffs.
- From 2008 to 2009, real wages fell by 4.7% in the region. This finding was skewed by Elkhart County, which had a 9.2% decrease in real wages as compared to South Bend (St. Joseph County) which had a 4.1% decrease. Elkhart had a larger decrease in real wages because the industry composition in this county is heavier in manufacturing.
- The recovery in 2010 will be slow for this region and will be dependent on the United States recovery, the ability to re-employ the labor supply surplus, and the capacity to sustain economic growth in the future.

INDUSTRY CLUSTERS

The Michiana Area Council of Governments[5] created a Comprehensive Economic Development Strategy for 2010 through 2014. This comprehensive document discusses industry clusters workforce development, entrepreneurship and innovation strategies, and leveraging resources to make North Central Indiana a thriving region.

MANUFACTURING

Manufacturing in all industries is a significant portion of the North Central Indiana economy. Manufacturing accounts for one out of every four jobs and 35% of output in the region. Of all manufacturing, three industries play a major role in the industry composition in this region: orthopedic medical device, recreational vehicle, and manufactured housing.

[4] Black, Grant. C. "South Bend and Elkhart Area Forecast 2010" Indiana Business Review, Winter 2009 pp. 38-40
[5] Michiana Area Council of Governments (MACOG) represents Elkhart, Kosciusko, Marshall and St. Joseph Counties www.macog.com

Orthopedic Medical Devices[6]

- Industry literature in North Central Indiana highlights the globally competitive orthopedic medical device cluster in Warsaw, Indiana (Kosciusko County).
- Three of the world's five leading orthopedic device companies began in Warsaw and remain there today (DePuy, Zimmer, and Biomet).
- Medical device manufacturers are supported by many Warsaw-based suppliers and contract manufacturers. This industry accounts for $11 billion in annual revenues, representing more than a 50% market share in the United States, and more than a 33% market share in the world.
- The Warsaw cluster retains a strong competitive advantage in orthopedics because of its concentration of headquartered companies, highly skilled employees, and significant levels of profitability.
- The Warsaw orthopedics cluster is perceived primarily as a strong manufacturing hub, but is actually a growing center of innovation and R&D activity. Patents are a proxy for measuring innovation and the average patenting rate in the United States is 5 per 10,000 people; in Indiana it is 13, while in Warsaw it is 32.
- In recent years, the Warsaw-based orthopedics companies have started to collaborate on workforce education and training to help solve the workforce skills problem of the region.

Recreational Vehicle and Manufactured Housing[7]

- Major producers of recreational vehicles are located in Elkhart County such as Dutchman Manufacturing, Forest River, Gulf Stream Coach, Heartland RV, Jayco, Inc., and Keystone RV.
- The above named and other manufacturers located in Elkhart County produce nearly 50% of all recreational vehicles in the nation.
- The downturn in the recreational vehicle and manufactured housing market was directly related to the Great Recession, especially from 2008 to 2009.
- The recreational vehicle industry is expected to recover and is already seeing signs of improvement.

Other Sectors

Tourism

- A secondary industry in the South Bend area is tourism created by the University of Notre Dame. This industry generates millions of dollars in revenue from visitors and students' families to the university.
- In addition, the drive to remain competitive in tourism has led to an increase in hotel development in the North Central region.

[6] BioCrossroads "Warsaw, Indiana: The Orthopedics Capital of the World" September 2009
[7] Michiana Area Council of Governments "Comprehensive Economic Development Strategy 2010-2014" 2010

Agriculture

- The agriculture industry is still a driver in the North Central region and the industry has become more commercialized and can be more accurately described as "agribusiness."
- Some environmental concerns have been raised by some agricultural processes, but through regional initiatives the North Central region is trying to resolve these issues without harming agricultures' contributions to the economy.

Strengths

Expanding Orthopedic Medical Device Cluster

- In 2009 the Eli Lilly Endowment awarded the Kosciusko County Community Foundation (KCCF) a $7 million grant to establish an orthopedics community initiative, OrthoWorx. This venture in cooperation with BioCrossroads has been given the task to advance and support growth and innovation within the orthopedics device sector in Kosciusko County.
- OrthoWorx Areas of Focus:
    1. Branding and Awareness
    2. Community Enhancement
    3. Education
    4. Talent and Workforce Development
    5. Transportation and Logistics

Leveraging Resources

- Many studies focus on what North Central Indiana can do to best leverage the assets of the region, but do not provide substantive policy recommendations to achieve those goals. Unlike other reports, "Benchmarking South Bend"[8] identified six strategies to facilitate a prosperous North Central Indiana:
    1. Capitalize on the University of Notre Dame by encouraging research collaborations and commercialization of technologies.
    2. Increase the local availability of early-stage capital.
    3. Simulate innovation and entrepreneurial activity and foster the growth of first-stage and second-stage companies.
    4. Create regional linkages among the Michiana region for a regional strategy, strategic investments, and a regional approach to economic development.
    5. Facilitate regional and global connectivity between industry and institutions.
    6. Educate, retrain, and retain a workforce that has skills necessary for 21st century jobs.

Weaknesses

Leveraging Resources

- North Central Indiana has not fully benefited from the synergies of the orthopedics cluster in Warsaw, Indiana, in terms of financial, business services, and residential or commercial real

[8] Karl King and John Roos "Benchmarking South Bend" June 2010

estate. This is partly because of its self containment but also because of its reliance on other regions and urban centers (e.g., Chicago) for such services.[9]

- Since the economy of North Central Indiana is heavily concentrated in manufacturing, when demand decreases for goods, there is a significant economic impact on the community.

Workforce Development and Education[10]

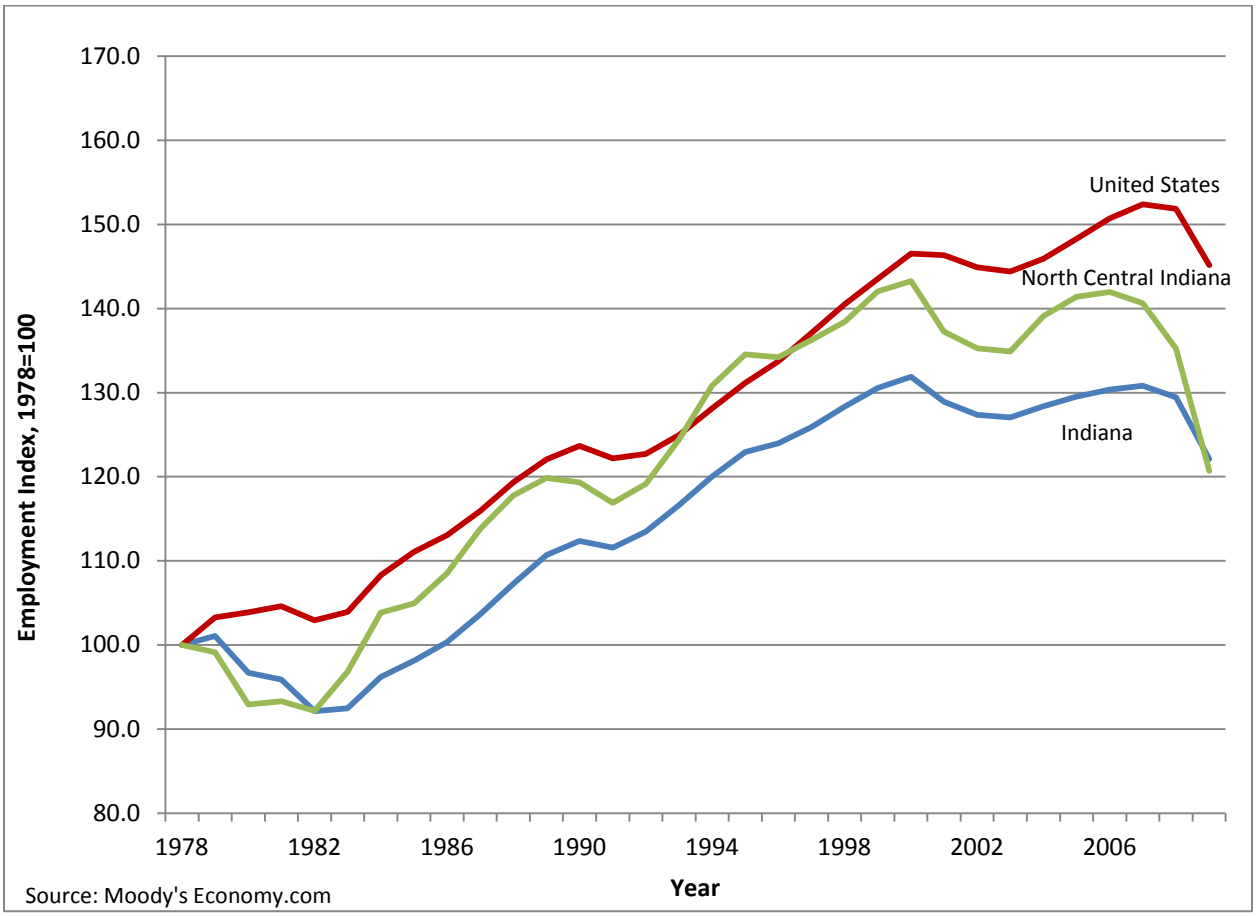
- Many studies from the Workforce Investment Board and medical device cluster analysis cite insufficient educational capacity of residents to fulfill technical occupations for manufacturing and health care.
- The lack of work ethic and soft skills of employees are a significant issue.
- The orthopedics industry is prospering, but there is a local labor shortage for skilled employees and talent recruitment and retention is difficult in Warsaw, Indiana.

[9] Indiana Health Industry Forum "Regional Report North Central Indiana" www.ihif.org
[10] Sources: Indiana Workforce Investment Board "Root Causes" 2005; Orthoworx. Biomedical Manufacturing Workshop Ivy Tech Orthopedic Advanced Manufacturing Training Center Warsaw, IN October 30, 2009

INDUSTRY ANALYSIS

EMPLOYMENT TRENDS

Figure 1. Total Employment for North Central Indiana, Indiana, and the United States, 1978-2009



- Except for a few years in the 1990s, total employment growth in North Central Indiana from 1982 to 2008 has outpaced the growth in the state of Indiana, but not the United States. Excluding the most recent recession, the employment growth rate in North Central Indiana from 1978 to 2006 was 42%, which is larger than the state of Indiana (30%) but smaller than the United States (51%) (Figure 1).
- The largest over-the-year employment decrease in North Central Indiana occurred from 2008 to 2009 when the economy lost 10.8% of its jobs. The progressive decline in employment from 2006 to 2009 accounts for one of the sharpest declines in North Central Indiana's 30-year employment history; over this period, the economy shed 15% of its jobs.

Table 8. Employment Change by Major Industry Sector for North Central Indiana, Indiana, and the United States, 2000-2009

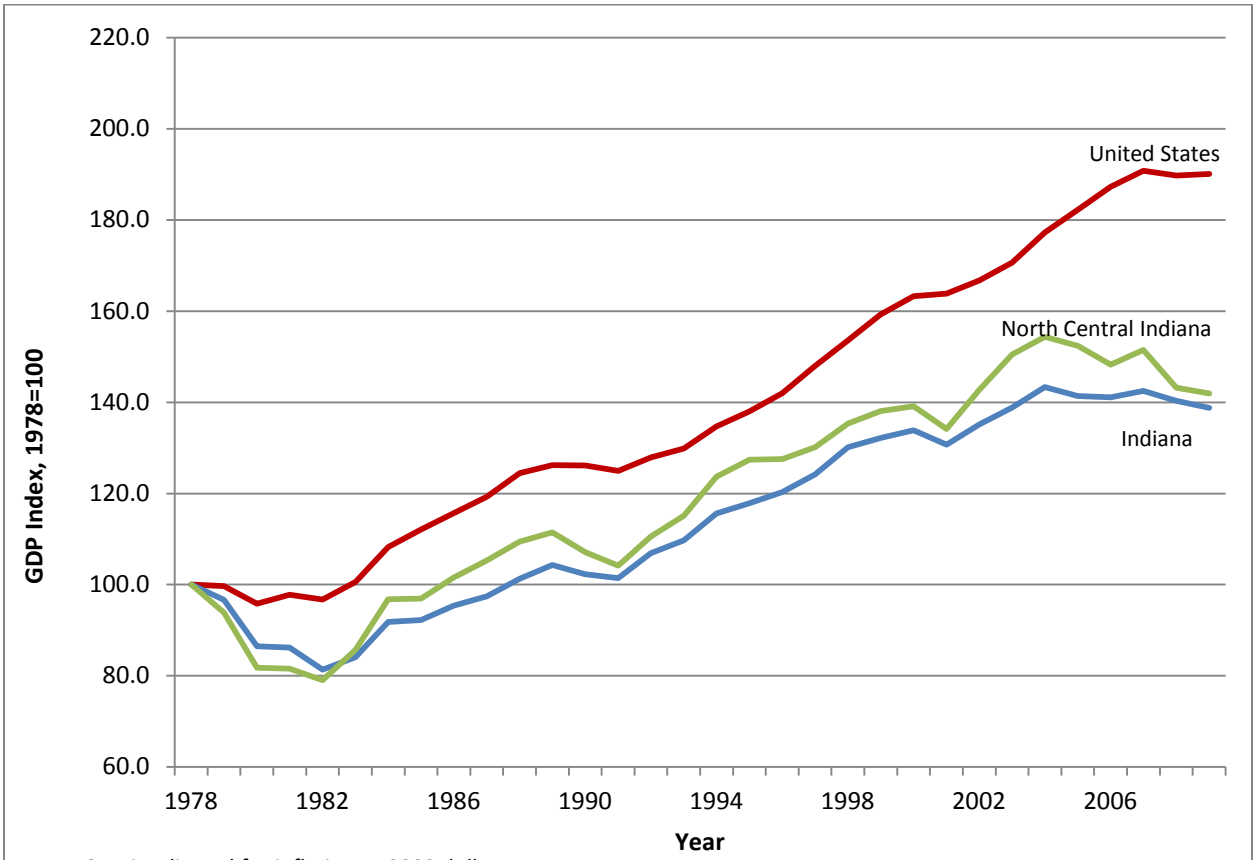
	North Central Indiana		Indiana	U.S.
Industry Sector	2009 Employment	Percent Change, 2000-2009		
Manufacturing	70,536	-34.7%	-33.5%	-31.7%
Health Care and Social Assistance	36,563	17.1%	24.7%	25.6%
Public Administration	30,847	9.0%	8.0%	7.3%
Retail Trade	28,212	-20.6%	-14.2%	-5.2%
Accommodation and Food Services	19,236	-4.3%	3.6%	10.6%
Educational Services	13,466	21.8%	31.1%	29.3%
Wholesale Trade	12,440	-15.1%	-9.1%	-3.6%
Administrative and Support and Waste Management and Remediation Services	10,340	-11.4%	-1.8%	-7.9%
Other Services (except Public Administration)	10,323	-12.9%	-0.8%	4.5%
Construction	9,542	-33.8%	-20.5%	-11.0%
Finance and Insurance	7,546	-14.9%	-9.3%	-0.2%
Professional, Scientific, and Technical Services	7,213	-17.2%	5.5%	9.9%
Transportation and Warehousing	6,457	-8.3%	-6.3%	-4.8%
Agriculture, Forestry, Fishing and Hunting	4,537	-24.7%	-20.7%	-14.7%
Information	3,078	-29.8%	-18.3%	-22.0%
Real Estate and Rental and Leasing	3,051	-12.2%	-10.2%	-1.3%
Management of Companies and Enterprises	2,770	5.6%	2.2%	5.9%
Arts, Entertainment, and Recreation	2,037	-4.7%	4.9%	7.2%
Utilities	533	-17.0%	4.8%	-7.1%
Mining, Quarrying, and Oil and Gas Extraction	188	-42.9%	-1.4%	25.6%
TOTAL	**278,915**	**-15.8%**	**-7.4%**	**-1.1%**

Source: Moody's Economy.com

- Manufacturing is the largest industry sector in North Central Indiana with 70,536 employees, accounting for 25% of all employment. The next largest sector, Health Care and Social Assistance, was significantly smaller than Manufacturing with only 36,563 employees and accounted for 13% of total employment (Table 8).
- Thirteen sectors in North Central Indiana suffered from double-digit rates of decline from 2000 to 2009 in comparison to six sectors in the state of Indiana and four in the United States.
- Employment grew in four of the 20 major industry sectors in North Central Indiana from 2000 to 2009, compared to nine in the state of Indiana and eight in the United States.

Trends in Gross Product

Figure 2. Gross Product for North Central Indiana, Indiana, and the United States, 1978-2009



Note: GDP is adjusted for inflation to 2009 dollars
Source: Moody's Economy.com

- From 1981 to 2009, growth in gross product in North Central Indiana slightly outpaced the state of Indiana; but since 2004 the North Central Indiana region has declined at a higher rate relative to the state of Indiana and has posted significant employment loss since 2006 (Figure 1 & 2).
- The largest over-the-year gross product decrease in North Central Indiana occurred from 1979 to 1980 where gross product declined by 12.9%.
- The difference in gross product growth between the United States and North Central Indiana has grown wider over the last 30 years. Between 1978 and 1979, the difference in growth rates between the United States (a decline of 0.3%, or index of 99.7) and North Central Indiana (a decline of 6.1%, or index of 93.9) was 5.9 percentage points. By 2009, the difference in the 30-year growth rates increased to 48.2 percentage points; gross product in North Central Indiana grew by 41.9% between 1979 and 2009, but gross product grew by 90.1% in the United States. This widening gap shows the significant structural economic issues of the North Central Indiana economy.

Table 9. Gross Product Change by Major Industry Sector for North Central Indiana, Indiana, and the United States, 2000-2009

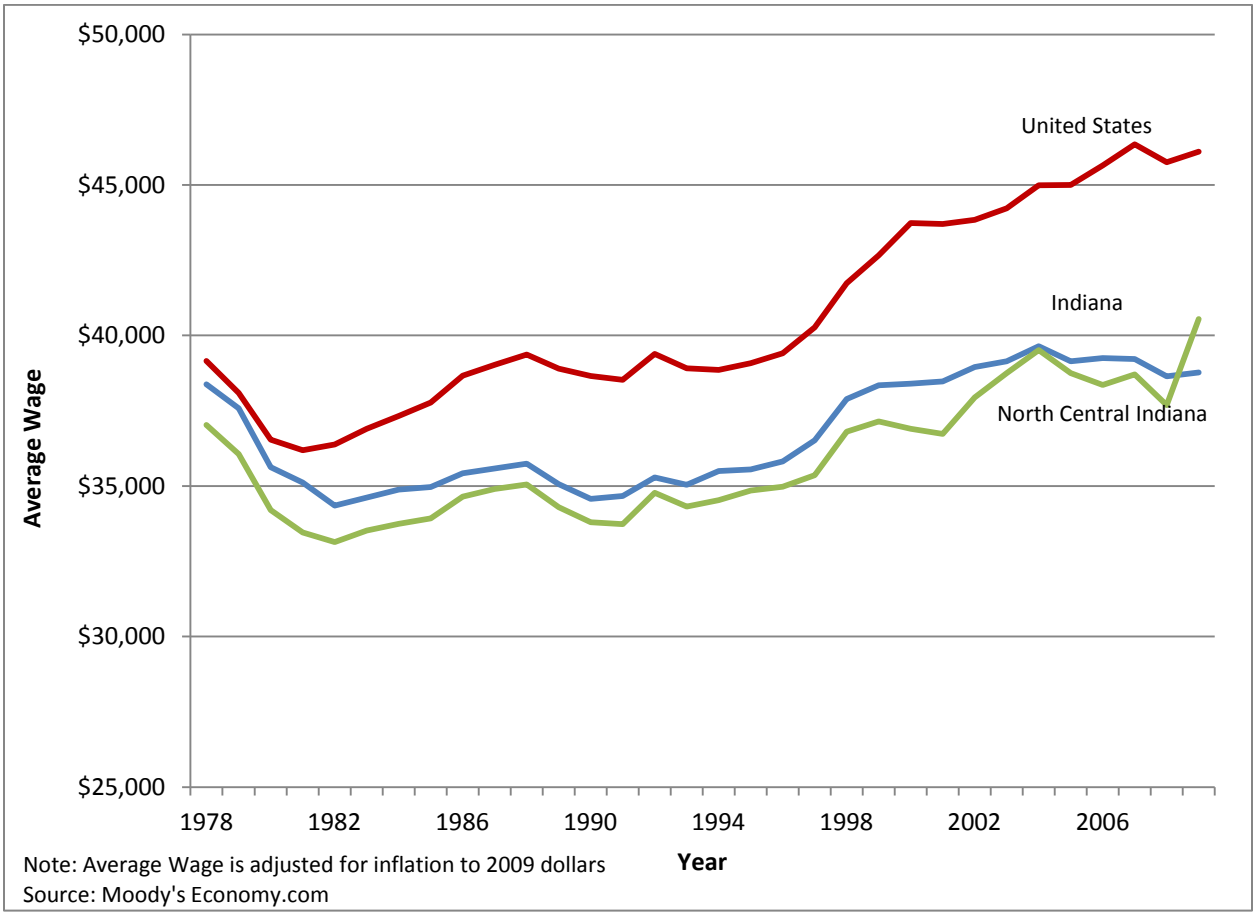
	North Central Indiana		Indiana	U.S.
Industry Sector	2009 Gross Product ($Mil)	Percent Change, 2000-2009		
Manufacturing	$7,923.0	-18.0%	-16.1%	-12.5%
Health Care and Social Assistance	$1,940.8	24.3%	36.4%	46.2%
Real Estate and Rental and Leasing	$1,916.4	4.6%	-0.7%	19.8%
Public Administration	$1,697.6	15.4%	18.5%	35.7%
Wholesale Trade	$1,485.8	-2.0%	5.7%	8.0%
Retail Trade	$1,357.2	-7.3%	-1.5%	5.2%
Finance and Insurance	$1,053.9	12.7%	0.6%	11.5%
Professional, Scientific, and Technical Services	$883.1	37.1%	34.1%	32.9%
Educational Services	$654.9	39.8%	54.2%	51.5%
Construction	$644.2	-37.8%	-22.1%	-8.6%
Other Services (except Public Administration)	$566.0	-0.6%	12.9%	17.7%
Transportation and Warehousing	$498.1	3.4%	6.6%	4.7%
Accommodation and Food Services	$458.0	5.8%	14.9%	23.9%
Administrative and Support and Waste Management and Remediation Services	$437.3	-2.9%	13.7%	15.2%
Information	$422.0	4.3%	9.8%	9.3%
Management of Companies and Enterprises	$328.8	7.1%	1.6%	21.2%
Agriculture, Forestry, Fishing and Hunting	$260.1	145.3%	153.8%	27.4%
Utilities	$252.8	12.1%	41.8%	40.6%
Arts, Entertainment, and Recreation	$95.1	8.2%	22.4%	25.9%
Mining, Quarrying, and Oil and Gas Extraction	$21.9	-27.2%	10.4%	83.9%
TOTAL	**$22,896.9**	**-3.3%**	**3.6%**	**16.4%**

Source: Moody's Economy.com

- The Manufacturing sector is very important to the North Central Indiana economy. It was the largest contributor to gross product in 2009 in North Central Indiana ($7.9 billion), accounting for 35% of total gross product (Table 9).
- The second largest contributor to gross product was Health Care and Social Assistance ($1.9 billion), but its impact was dwarfed when compared to the Manufacturing sector. The Health Care sector accounted for 8.5% of North Central Indiana gross product.
- Real Estate and Rental and Leasing was the third largest sector with a gross product similar to that of the Health Care sector and slightly more than 3,000 employees.

Trends in Average Wage

Figure 3. Average Wage for North Central Indiana, Indiana, and the United States, 1978-2009



- Wages in North Central Indiana have historically been slightly lower than the state of Indiana and significantly lower than in the United States. Over the last 30 years, the wage gap between North Central Indiana and the United States has widened (Figure 3).
- In 1979, the average wage gap between the United States ($38,096) and North Central Indiana ($36,060) was $2,036, but the gap expanded to $8,069 in 2008 ($45,759 in the United States versus $37,690 in North Central Indiana). The gap declined in 2009 to $5,562 because of a recent increase in the average wage in North Central Indiana.

Table 10. Average Wage Change by Major Industry Sector for North Central Indiana, Indiana, and the United States, 2000-2009

	North Central Indiana		Indiana	U.S.
Industry Sector	2009 Average Wage	Percent Change, 2000-2009		
Management of Companies and Enterprises	$77,498	-4.8%	-6.7%	8.2%
Utilities	$76,957	12.1%	13.1%	11.2%
Professional, Scientific, and Technical Services	$58,089	47.5%	13.4%	5.7%
Wholesale Trade	$53,857	4.1%	5.2%	3.2%
Finance and Insurance	$53,325	24.7%	2.2%	9.4%
Construction	$48,485	5.9%	10.9%	10.2%
Information	$46,656	17.7%	5.4%	-1.2%
Manufacturing	$46,146	0.8%	2.1%	3.5%
Mining, Quarrying, and Oil and Gas Extraction	$42,926	-6.3%	-12.5%	24.6%
Educational Services	$38,753	10.4%	13.3%	13.2%
Transportation and Warehousing	$37,813	-1.5%	-1.7%	-2.3%
Health Care and Social Assistance	$35,451	-1.0%	3.0%	8.9%
Public Administration	$34,127	-1.2%	3.6%	13.9%
Other Services (except Public Administration)	$33,614	5.9%	6.3%	6.9%
Real Estate and Rental and Leasing	$30,939	11.7%	7.2%	2.4%
Administrative and Support and Waste Management and Remediation Services	$25,607	2.5%	8.4%	8.5%
Retail Trade	$22,993	0.1%	-1.6%	-3.6%
Arts, Entertainment, and Recreation	$16,722	-6.7%	-6.1%	6.4%
Accommodation and Food Services	$13,890	-0.2%	0.9%	1.2%
Agriculture, Forestry, Fishing and Hunting	$5,111	21.1%	18.8%	18.5%
TOTAL	**$37,325**	**1.2%**	**0.9%**	**5.5%**

Source: Moody's Economy.com

- The sectors with the highest average wage in North Central Indiana were Management of Companies and Enterprises ($77,498); Utilities ($76,957); and Professional, Scientific, and Technical Services ($58,089) (Table 10).
- Between 2000 and 2009, average wages grew in 13 of the 20 industry sectors in North Central Indiana as compared to 15 in Indiana and 17 in the United States.

HIGH PERFORMANCE INDUSTRIES

To identify which industries in North Central Indiana are outperforming others in the region and nationally, we analyzed data at a finer detail level of industry (4-digit). This analysis explores four sectors in finer detail: Manufacturing; Information; Professional, Scientific, and Technical Services; and Health Care and Social Assistance.

"WINNING" INDUSTRIES – TIER I

To examine these high performance industries we selected industries that meet all of the following criteria:

- **Percent Employment Change (2000-2009) > 1%** – to show employment growth
- **Average Wage (2009) > $46,656.25**[11]– to find industries that have livable wages
- **Percent Change in Gross Product (2000-2009) > 0.1%** – to show positive growth in output
- **Gross Product Location Quotient**[12] **(2009) > 1.2**[13] - to find industries that are more concentrated in North Central Indiana compared to the United States.

- Table 11 shows the three industries that met the above criteria for Tier I "winning" industries in North Central Indiana, two of which were in the Professional, Scientific, and Technical Services sector and one in the Information sector.

- These three Tier I industries have a gross product location quotient greater than 1.2 indicating these industries are specialists in their field in the nation, have livable wages, and have experienced growth in both employment and output. These industries, however, are very small, employing only about 1,270 people.

[11] This calculation was taken as 25% above the average wage in Table 3.

[12] Location Quotient measures the specialization of an industry in a region by comparing it to data in a larger region. For our analysis: where = North Central Indiana Gross Product in industry = Total in North Central Indiana Gross Product; = US Gross Product in industry ; = Total US Gross Product

[13] A location quotient >1.2 indicates specialization in an industry.

Table 11. Industry Winners (Tier I) in North Central Indiana for Employment, Gross Product, and Average Wage

		Employment					GDP					Average Wage				
NAICS	NAICS Description	2000	2009	Difference (2000-2009)	% Change (2000-2009)	LQ 2009	2000	2009	Difference (2000-2009) ($Mil)	% Change (2000-2009)	LQ 2009	2000	2009	Difference (2000-2009)	% Change (2000-2009)	LQ 2009
5171	Wired Telecommunications Carriers	455	458	3	0.7%	0.4	$138.7	$147.1	$8.4	6.1%	2.3	$103,164	$86,307	-$16,856	-16.3%	1.3
5416	Management, Scientific, and Technical Consulting Services	618	659	41	6.6%	0.3	61.4	113.3	52.0	84.7%	2.2	$53,019	$84,527	$31,508	59.4%	1.1
5417	Scientific Research and Development Services	144	151	7	4.9%	0.1	11.3	18.5	7.3	64.2%	10.1	$41,889	$59,913	$18,025	43.0%	0.7

Source: Moody's Economy.com

"Winning" Industries – Tier II

The main reason for the small number of Tier I "winning" industries was employment change. Only 28 out of the 125 industries (22%) selected for this finer detailed industry analysis had positive employment growth from 2000 to 2009.

Because there were only three Tier I "winning" industries in North Central Indiana, we looked to find industries that are surviving the economic storm, which we will call Tier II "winning" industries. For Tier II "winning" industries, we selected industries that met three of the four criteria (all those in Tier I except employment growth):

1. **Average Wage (2009) > $46,656.25** – to find industries that have livable wages
2. **Percent Change in Gross Product (2000-2009) > 0.1%** – to show positive growth in output
3. **Gross Product Location Quotient (LQ) (2009) > 1.2** - to find industries that are more concentrated in North Central Indiana compared to the United States.

- Table 12 lists the six industries that are Tier II "winning" industries in North Central Indiana. Of those six, one is in Manufacturing; one in the Information sector; and four in Professional, Scientific, and Technical Services.

- Four of the Tier II industries are within the sector of Professional, Scientific, and Technical Services. These four industries (Legal Services; Architectural, Engineering, and Related Services; Computer Systems Design and Related Services; and Advertising, Public Relations, and Related Services) are in hi-tech, high-wage industries but account for only 1.1% of all employment in North Central Indiana.

- The three highest wage Tier II industries are: Wireless Telecommunications Carriers (except Satellite) ($92,247); Computer Systems Design and Related Services ($83,358); Communications Equipment Manufacturing ($78,421). All three industries lost employment from 2000 to 2009, but by far the largest percentage decrease (67.2%) was in Wireless Telecommunications Carriers (except Satellite).

- While all Tier II industries had an increase in gross product from 2000 to 2009 (see criterion #2), most had significant employment loss over this period. This indicates that even though employers were shedding workers their output increased, demonstrating productivity increases in these sectors.

Table 12. Industry Winners (Tier II) in North Central Indiana for Employment, Gross Product, and Average Wage

		Employment					GDP					Average Wage				
NAICS	NAICS Description	2000	2009	Difference (2000-2009)	% Change (2000-2009)	LQ 2009	2000	2009	Difference (2000-2009) ($Mil)	% Change (2000-2009)	LQ 2009	2000	2009	Difference (2000-2009)	% Change (2000-2009)	LQ 2009
3342	Communications Equipment Manufacturing	92	43	-49	-53.3%	0.2	$2.8	$5.2	$2.4	87.8%	3.8	$33,709	$78,421	$44,712	132.6%	1.2
5172	Wireless Telecommunications Carriers (except Satellite)	351	115	-236	-67.2%	0.3	$29.1	$38.3	$9.1	31.3%	2.6	$27,987	$92,247	$64,260	229.6%	8.6
5411	Legal Services	1400	1035	-365	-26.1%	0.4	$115.1	$146.7	$31.6	27.5%	2.0	$43,814	$67,625	$23,811	54.3%	0.9
5413	Architectural, Engineering, and Related Services	1464	1081	-383	-26.2%	0.4	$113.7	$157.1	$43.4	38.1%	2.1	$41,325	$66,274	$24,949	60.4%	1.0
5415	Computer Systems Design and Related Services	865	630	-235	-27.2%	0.2	$97.1	$107.0	$9.9	10.2%	3.7	$59,955	$83,358	$23,403	39.0%	1.0
5418	Advertising, Public Relations, and Related Services	653	384	-269	-41.2%	0.4	$46.4	$51.3	$4.9	10.6%	1.9	$37,860	$60,283	$22,424	59.2%	1.0

Moody's Economy.com

Average Wage by Employment Change, and Employment Level

- One industry—Management, Scientific, and Technical Consulting Services—from Tier I (Table 11) experienced growth in employment between 2000 and 2009 and is paying relatively high wages (Figure 4).

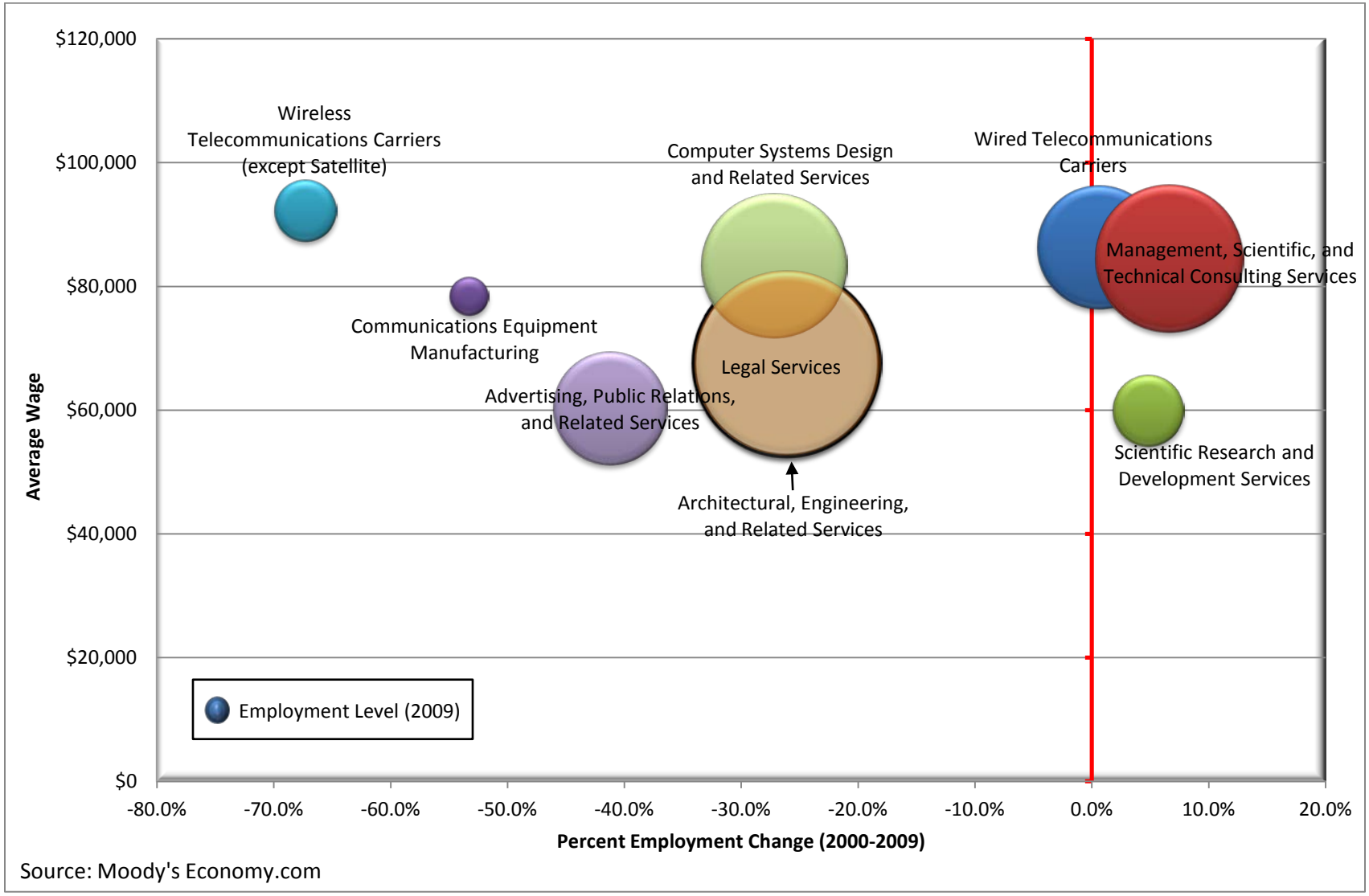
- In Tier I & II, industries with the largest employment include Architectural, Engineering, and Related Services; Legal Services; Management, Scientific, and Technical Consulting Services; and Computer Systems Design and Related Services (Figure 4). Of these, only the Management sector gained in the area of employment.

Average Wage by Location Quotient and Total Gross Product

- One Tier I industry that stands out when examining average wage, gross product location quotient, and total gross product is Scientific Research and Development Services. This industry has a gross product location quotient (LQ) greater than 10 indicating that this industry is an extreme specialist in this field in the nation. In addition, this industry has high wages and large employment (Figure 5).

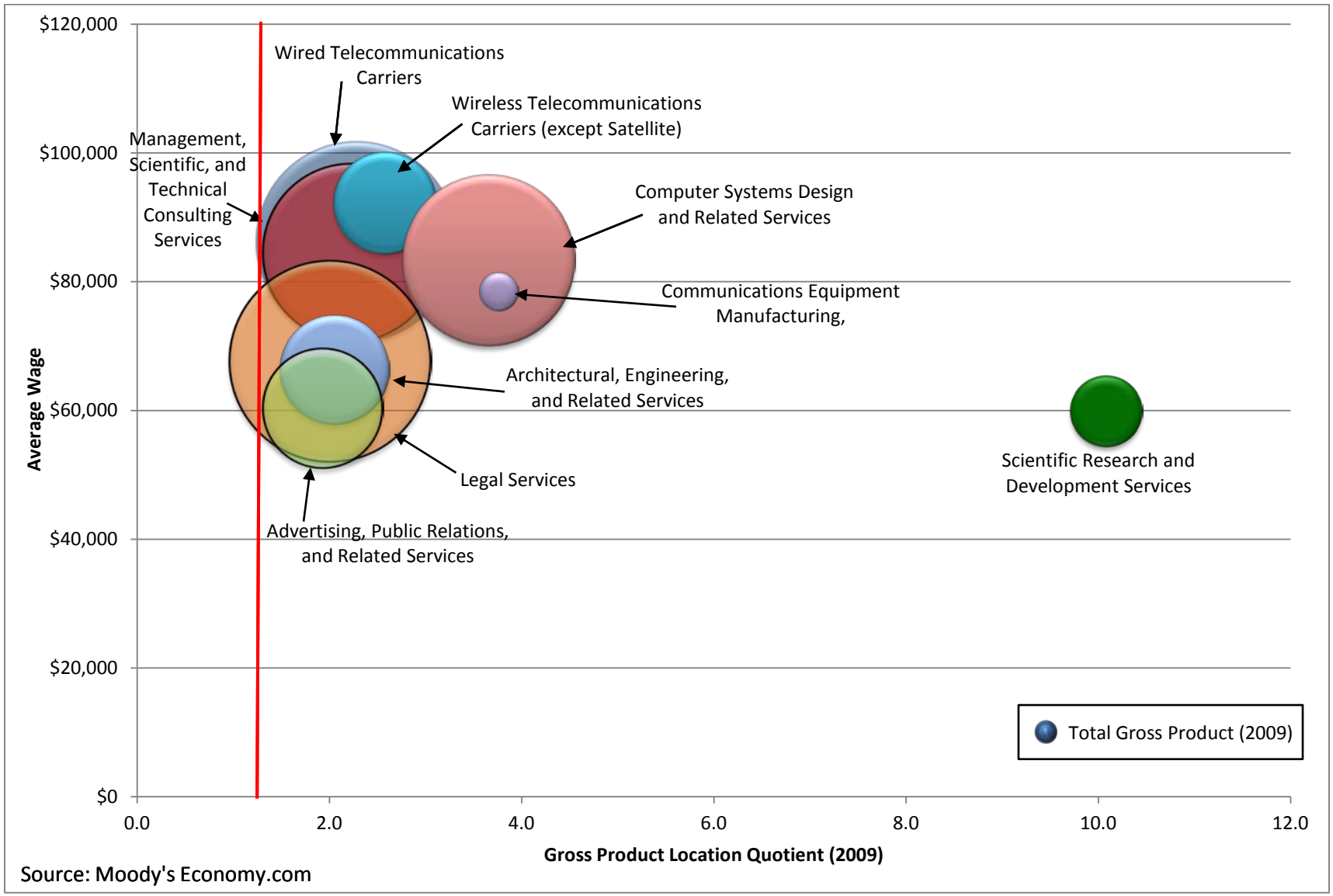
- The two--industries of Communications Equipment Manufacturing and Computer Systems Design and Related Services-- have a gross product location quotient (LQ) greater than 3 indicating these industries are specialists in this field in the nation and have livable wages. However, the two industries are significantly different in size. The Communications Equipment Manufacturing industry has a much smaller gross product ($5.2 million) than the Computer Related Design industry ($97.1 million).

Figure 4. Industry Winners (Tier I & II): Average Wage by Employment Change, and Employment Level



Source: Moody's Economy.com

Figure 5. Industry Winners (Tier I & II): Average Wage by Location Quotient, and Total Gross Product



Source: Moody's Economy.com

Employment Location Quotient

Table 13. Industry Sectors in which Employment Location Quotient was Greater than 5

		Employment				
NAICS	NAICS Description	2000	2009	Difference (2000-2009)	% Change (2000-2009)	LQ 2009
3219	Other Wood Product Manufacturing	8,493	2,835	-5,658	-66.6%	7.1
3261	Plastics Product Manufacturing	9,244	5,465	-3,779	-40.9%	5.3
3343	Audio and Video Equipment Manufacturing	445	442	-3	-0.7%	6.1
3362	Motor Vehicle Body and Trailer Manufacturing	20,975	15,330	-5,645	-26.9%	71.1
3363	Motor Vehicle Parts Manufacturing	6,389	4,705	-1,684	-26.4%	5.6
3391	Medical Equipment and Supplies Manufacturing	4,297	6,754	2,457	57.2%	11.0

Source: Moody's Economy.com

- Excluding all other criteria, the six industries above represent the industries with an employment LQ greater than 5. With such a high LQ, these industries are national specialists in their field (Table 13).
- All of the above industries are in the Manufacturing sector and represent 12.7% of all employment in North Central Indiana in 2009.
- Five of the six industries lost employment from 2000 to 2009 and four of these industries lost over 1,000 employees over the reference period.
- One industry experienced significant employment growth. Medical Equipment and Supplies Manufacturing increased employment by 57% between 2000 and 2009 and had a very high employment LQ.
- Interestingly, none of these industries appears on the Tier I or Tier II "winning" industry list (Table 11 & 12) because the industries listed in Table 13 had a negative change in output or lower wages.

Gross Product Location Quotient

Table 14. Industry Sectors in which Gross Product Location Quotient was Greater than 3 and Gross Product was Greater than $1 Million

		Gross Product				
NAICS	NAICS Description	2000 ($Mil)	2009 ($Mil)	Difference (2000-2009) ($Mil)	% Change (2000-2009)	LQ 2009
3132	Tobacco Manufacturing	$0.3	$1.7	$1.4	443.7%	3.4
3221	Pulp, Paper, and Paperboard Mills	$14.9	$8.6	-$6.3	-42.2%	3.2
3241	Petroleum and Coal Products Manufacturing	$22.9	$35.2	$12.3	53.6%	3.4
3341	Computer and Peripheral Equipment Manufacturing	$0.1	$2.7	$2.6	2107.5%	16.7
3342	Communications Equipment Manufacturing	$2.8	$5.2	$2.4	87.8%	3.8
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	$38.7	$19.3	-$19.4	-50.2%	3.5
5112	Software Publishers	$11.3	$11.3	$0.0	-0.3%	9.1
5121	Motion Picture and Video Industries	$5.0	$6.9	$1.9	37.8%	10.9
5174	Satellite Telecommunications	$0.1	$1.2	$1.2	1767.3%	6.9
5191	Other Information Services	$1.6	$4.0	$2.4	152.5%	7.7
5415	Computer Systems Design and Related Services	$97.1	$107.0	$9.9	10.2%	3.7
5417	Scientific Research and Development Services	$11.3	$18.5	$7.3	64.2%	10.1

Source: Moody's Economy.com

- Excluding all other criteria, the 12 industries above represent the industries with a gross product LQ greater than 3 and 2009 gross product greater than $1 million. The additional output restriction (gross product > $1 million) was added because many small industries have LQs greater than 3, but do not contribute to the overall output of the region. Industries with such a high LQ are national specialists in their field (Table 14).
- Six of the 12 industries in Table 14 are in the manufacturing sector and represent 2.2% of all Manufacturing gross product in North Central Indiana in 2009.
- Computer and Peripheral Equipment Manufacturing has an extremely high gross product location quotient of 16.7, demonstrating that this sector is an extreme specialist in the North Central Indiana economy in comparison to the United States. This industry significantly increased its gross product from $0.1 million in 2000 to $2.7 million in 2009.
- Only two of the 12 industries listed experienced a decline in gross product from 2000 to 2009.
- Only one of the 12 industries appears on the Tier I "winning" industry list (Table 11): Scientific Research and Development Services (NAICS 5417); another is a Tier II "winning" industry (Table 12): Scientific Research and Development Services (NAICS 5415).

Industry Occupations

Table 15. Occupational Shares and Wages for North Central Indiana, Indiana, and the United States, 2009

	North Central Indiana [A]			Indiana		United States	
Occupations	Employment	Share	Average Wage	Share	Average Wage	Share	Average Wage
Production	28,120	28.2%	$34,040	15.5%	$30,590	17.1%	$32,990
Office and Administrative Support	14,070	14.1%	$30,710	11.4%	$34,490	6.8%	$33,290
Sales and Related	8,880	8.9%	$37,800	10.4%	$33,110	10.5%	$36,020
Transportation and Material Moving	8,020	8.1%	$29,590	9.3%	$19,200	8.6%	$20,880
Food Preparation and Serving Related	6,650	6.7%	$18,870	8.8%	$31,640	6.8%	$32,180
Construction and Extraction	4,760	4.8%	$42,750	6.0%	$63,390	5.5%	$69,690
Education, Training, and Library	4,680	4.7%	$40,710	5.9%	$42,750	6.5%	$49,530
Health Care Practitioner and Technical	4,470	4.5%	$64,990	4.4%	$41,560	3.9%	$42,210
Installation, Maintenance, and Repair	3,990	4.0%	$39,240	4.3%	$44,080	4.4%	$43,350
Management	3,220	3.2%	$92,760	2.9%	$25,790	3.0%	$26,710
Business and Financial Operations	2,170	2.2%	$55,410	3.7%	$90,110	4.7%	$102,900
Building and Grounds Cleaning and Maintenance	2,170	2.2%	$25,130	3.2%	$58,540	4.6%	$65,900
Healthcare Support	1,710	1.7%	$25,030	3.1%	$23,700	3.3%	$24,970
Architecture and Engineering	1,310	1.3%	$53,160	1.6%	$62,700	2.5%	$76,290
Personal Care and Service	1,280	1.3%	$22,850	2.3%	$23,230	2.6%	$24,680
Protective Service	1,150	1.2%	$33,620	2.0%	$35,560	2.4%	$41,740
Arts, Design, Entertainment, Sports, and Media	780	0.8%	$38,320	1.6%	$64,260	1.8%	$73,590
Community and Social Services	750	0.8%	$36,650	1.1%	$39,100	1.4%	$42,750
Computer and Mathematical Science	640	0.6%	$52,520	1.1%	$38,690	1.3%	$51,720
Legal	340	0.3%	$47,850	0.5%	$69,380	0.8%	$95,820
Life, Physical, and Social Science	280	0.3%	$60,740	0.7%	$51,850	1.0%	$65,660
Farming, Fishing, and Forestry	90	0.1%	$27,080	0.1%	$27,860	0.3%	$23,990
All Occupations	**99,540**	**100.0%**	**$37,250**	**100.0%**	**$38,330**	**100.0%**	**$43,460**

Note: [A] North Central Indiana includes the 4-county region: Elkhart, Fulton, Kosciusko, Marshall and St. Joseph
Source: Indiana Department of Workforce Development; U.S. Bureau of Labor Statistics

- Two occupational categories in North Central Indiana had higher occupational shares (those with a difference greater than one percentage point) than the United States: Production, and Office and Administrative Support. These are relatively low-wage industries; both Production ($34,040) and Office and Administrative Support ($30,710), had a lower average wage than the average wage for All Occupations in North Central Indiana ($37,250)(Table 15). Moreover, these two occupational categories accounted for 42% of all occupations in North Central Indiana.

- Nine occupational groups in North Central Indiana had lower occupational shares (those with a difference greater than one percentage point) than the United States: Sales and Related; Education, Training, and Library; Personal Care and Service; Business and Financial Operations; Building and Grounds, Cleaning and Maintenance; Health Care Support; Architecture and Engineering; Protective Service; and Arts, Design, Entertainment, Sports, and Media. Of these nine occupational groups, five had a higher average wage in North Central Indiana than the average wage for All Occupations in North Central Indiana ($37,250): Sales and Related ($37,800); Education, Training and Library ($40,710); Business Financial Operations ($55,410); Architecture and Engineering ($53,160); and Arts, Design, Entertainment, Sports, and Media occupations ($38,320).

Fastest Growing Firms

Table 16. Fastest Growing Private Firms in North Central Indiana, by National Rank and Revenue Growth (2004-2007)

National Rank	Company Name	City	North Central Indiana County	Revenue ($Mil)	Revenue Growth (2004-2007)	Founded	Employees
351	Platinum Builders	New Carlisle	St. Joseph	$2.4	839.6%	2003	28
444	Working Person's Store	Lakeville	St. Joseph	$15.2	717.3%	1995	70
2985	St. Clair Apparel	South Bend	St. Joseph	$8.8	119.5%	1998	15
3204	Inter Technologies	South Bend	St. Joseph	$2.8	107.2%	2000	8
3751	ECI	Elkhart	Elkhart	$9.5	82.8%	1996	80
4879	Bennington Marine	Elkhart	Elkhart	$152.0	44.5%	1997	0

Note: Rank out of 5,000
Source: www.inc.com

- Of the 5,000 fastest growing firms in the United States, 70 are located within Indiana, and of those 70, six are located within North Central Indiana (Table 16).
- All of the companies listed in Table 16 experienced at least double-digit growth from 2004 to 2007; four of the six firms posted triple-digit growth.
- Bennington Marine had by far the highest amount of revenues ($152 million). Only one other company had revenues over $10 million dollars in 2008: Working Person's Store.
- For a comprehensive listing of the Fastest Growing Firms in the state of Indiana see Appendix A.1.

Top Employers

Top 50 Employers

Table 17. Top 50 Employers by Number of Employees in North Central Indiana, 2010

Rank	Company Name	City	Employment	Sales ($ Millions)
1	University of Notre Dame	Notre Dame	4000	----
2	Memorial Hospital-South Bend	South Bend	3200	$339.2
3	R R Donnelley	Warsaw	1700	$351.9
4	Jayco Inc	Middlebury	1600	$250.0
5	Zimmer Holdings Inc	Warsaw	1600	----
6	Elkhart General Healthcare	Elkhart	1500	$457.5
7	Henkels & Mc Coy	Elkhart	1500	$315.0
8	Biomet Manufacturing Corp	Warsaw	1300	----
9	CTB Inc	Milford	1300	----
10	Goshen General Hospital	Goshen	1200	$127.2
11	Supreme Industries Inc	Goshen	1200	----
12	Conn-Selmer Inc	Elkhart	1100	----
13	St Joseph County Of Insurance	South Bend	1064	----
14	Heartland Recreational Vehicle	Elkhart	1000	$1,850.0
15	Honeywell Aerospace	South Bend	1000	$273.0
16	Madison Center & Hospital	South Bend	1000	$81.0
17	Utilimaster Corp	Wakarusa	1000	----
18	KIK Custom Products	Elkhart	900	$215.1
19	Newmar Corp	Nappanee	900	$150.0
20	St Joseph Regional Medical Ctr	Mishawaka	900	$95.4
21	Biomet Inc	Warsaw	850	----
22	De Puy Inc	Warsaw	837	----
23	Supreme Corp	Goshen	833	----
24	AM General LLC	Mishawaka	800	$1,285.6
25	Chore-Time Equipment	Milford	800	$398.4

Note: Data extracted on February 18, 2011
Source: Reference USA

Table 17. Top 50 Employers by Number of Employees in North Central Indiana, 2010 (Continued)

Rank	Company Name	City	Employment	Sales ($ Millions)
26	Creation Windows-Indiana Inc	Elkhart	800	$184
27	Home Crest Cabinetry	Goshen	800	$136
28	Kosciusko Community Hospital	Warsaw	800	$84.8
29	Norfolk Southern	Elkhart	780	$175.5
30	Four Winds Intl	Elkhart	700	----
31	Gulf Stream Coach Inc	Nappanee	700	----
32	Thor Motor Coach	Elkhart	700	$170.8
33	Liberty Mutual	Mishawaka	682	$149.358
34	CTS Electronics Components	Elkhart	650	$132.6
35	KIK Custom Products	Elkhart	650	$209.3
36	Coleman Cable Inc	Bremen	600	$684
37	Dalton Corp	Warsaw	600	----
38	Greencroft Retirement Communities	Goshen	600	$39.6
39	Syndicate Systems	Middlebury	600	----
40	Tribune Business Weekly	South Bend	600	$104.4
41	Dutchmen Manufacturing Inc	Goshen	570	----
42	Keystone RV Inc	Goshen	550	----
43	Robert Bosch Braking Systems	South Bend	550	$266.2
44	Highway Dept Toll Road Div	Granger	516	----
45	Atwood Mobile Products LLC	Elkhart	500	----
46	Cequent Towing Products	Goshen	500	$97.5
47	Das Dutchman Essenhaus	Middlebury	500	$49
48	Diversified Machine Inc	Bristol	500	$103.5
49	Goshen College	Goshen	500	----
50	Greencroft Retirement	Goshen	500	$33

Note: Data extracted on February 18, 2011
Source: Reference USA

- Table 17 displays the Top 50 Employers in North Central Indiana in 2010. These employers had a total employment of 48,532.

- Total employment of the Top 5 Employers (University of Notre Dame, Memorial Hospital-South Bend, R R Donnelley, Jayco Inc, and Zimmer Holdings Inc) (12,100) account for 25% of employment of the companies in Table 17.

- Five of the companies listed in Table 17 are within the medical device industry (Zimmer Holdings, Inc. (#5), Biomet Inc. (#8), Biomet Manufacturing, Inc. (#21), Depuy Orthopedics, Inc. (#22), and KIK Custom Products (#35)); these companies combined employ 5,237 individuals (11% of employment in Table 17).

- The eight healthcare institutions (Memorial Hospital-South Bend (#2), Elkhart General Healthcare (#6), Goshen General Hospital (#10), Madison Center & Hospital (#16), St Joseph Regional Medical Center (#13), Kosciusko Community Hospital (#28), Greencroft Retirement Communities (#38), and Greencroft Retirement (#50)) in Table 17 accounted for 10,200 employees, which represent 21% of the Top Employers.

- 11 of the companies listed in Table 17 are in the recreational vehicle industry. Companies such as Jayco Inc. (#4), Supreme Industries Inc (#11), Heartland Recreational Vehicle (#14), Utilimaster Corp (#17), Newmar Corp (#19), Four Winds Intl (#30), Gulf Stream Coach Inc (#31), Thor Motor Coach (#32), Dutchmen Manufacturing Inc (#41), Keystone RV Inc (#42), and Atwood Mobile Products LLC (#45), which accounted for 19% (9,420) of employment in Table 17.

- For a comprehensive listing of the Top 50 Employers in North Central Indiana see Appendix A.2

Foreign Direct Investment

Table 18. Foreign Direct Investment in North Central Indiana, 2010

Country	Rank by Investment	Company	Industry	County	Employment	Investment ($Mil)
France	13	Louis Dreyfus Agricultural Industries, LLC	Manufacturing - Agriculture	Kosciusko	85	$135
Germany	24	Zentis Food Solutions North America, LLC	Manufacturing	Marshall	154	$42.5
Germany	81	Heraeus Kulzer, Inc.	Life Sciences	St. Joseph	45	$2.4
Germany	41	Benteler Automotive Corp.	Manufacturing - Auto	Elkhart	290	$13.9
Japan	6	I/N Kote LP	Manufacturing - Steel/Metals	St. Joseph	100	$240

Note: Rank out of 97 within the state of Indiana.
Source: Indiana Economic Development Corporation "Foreign Direct Investment in Indiana" 2009

- A total of three different countries have invested in five companies within North Central Indiana (Table 18): France, Germany, and Japan. Japan is the largest investor.
- Four of the five companies are involved in manufacturing as their primary industry.
- The total foreign direct investment for all five companies is almost $434 million with more than half of this money invested in I/N Kote LP ($240 million).

Economic Inclusion (Minority- and Women-Owned Businesses)

Minority Inclusion

Table 19. Black/African Americans, Asians, and Hispanics as a Percentage of Business Owners and Percentage of the Population for Indiana and the United States, 2007

	BLACK/AFRICAN AMERICAN			ASIAN			HISPANIC		
Area	% of Business Owners	% of Population	Share of Shares	% of Business Owners	% of Population	Share of Shares	% of Business Owners	% of Population	Share of Shares
Indiana	4.60%	8.70%	0.53	1.80%	1.30%	1.39	1.80%	4.90%	0.36
United States	7.10%	12.30%	0.58	5.70%	4.40%	1.31	8.30%	15.10%	0.55

Source: U.S. Census Bureau, Survey of Business Owners; U.S. Census Bureau, American Community Survey

The demographic profile of North Central Indiana shows that minority groups account for small shares of the regional population. Table 19 presents minority business ownership in Indiana and the United States (data are not available at the metropolitan area or county level):

- Percentage of business owners by minority group[14]
- Percentage of the minority group to the total population[15]
- Share of shares - compares the percentage of business owners to the percentage of the minority group in the total population. If this percentage =1, the share of business owners in a minority group is equal to the proportion of that group in the total population.
- The share of shares for Black/African American business ownership in Indiana is slightly lower (0.53) than the United States (0.58) (Table 19).
- The Asian community has the highest participation (in relation to their size of population) in business ownership of the other minority categories (1.31 in the United States and 1.39 in Indiana). Also, the share of shares of Asian business ownership in Indiana is higher than that of the United States.
- In comparison to other minority groups, Hispanics have the lowest participation (in relation to their size of population) in business ownership: Indiana (0.36) and the United States (0.55).

[14] U.S. Census Bureau, Survey of Business Owners (2007)
[15] U.S. Census Bureau, American Community Survey (2007)

Women-Owned Businesses

Table 20. Percentage of Women-Owned Businesses for Indiana and the United States, 2007

Area	Women-Owned Firms	Total Firms	% Women-Owned Firms
Indiana	129,523	483,242	26.8%
United States	7,793,425	27,110,362	28.7%

Source: U.S. Census Bureau, Survey of Business Owners;

- Women-owned firms in the state of Indiana accounted for more than one quarter of firms (26.8%) (Table 20).

- The percentage of women-owned firms in Indiana was slightly lower than in the United States (28.7%).

Economic Development Organizations

County Level

- Table 21 lists **local** economic development organizations in each of the four counties in North Central Indiana with contact information.

Table 21. North Central Indiana Economic Development Organizations, 2010

County	Local Economic Development Corporation	Contact	Phone	Website
Elkhart	Economic Development Corporation of Elkhart County	Dorinda Heiden-Guss	(574) 535-1002	http://elkhartcountybiz.com/
Elkhart	City of Elkhart	Barkley Garrett	(574) 294-5471	http://elkhartindiana.org/
Kosciusko	Kosciusko Economic Development Corporation	George Robertson	(574) 267-6311	http://kdi-in.com/
Marshall	Marshall County Economic Development Corp.	Jennifer Laurent	(574) 935-8499	http://marshallcountyedc.org/
St. Joseph	Project Future	Pat McMahon	(574) 234-6590	http://projectfuture.org/
Elkhart	North Central Indiana Business Assistance Center (NCI)	J. Walsh	(574) 293-3209	http://www.michianatech.org/
Elkhart	Technology Council		(574) 293-1531	http://www.elkhart.org/
St. Joseph	St. Joseph County Government	Ann Thornton	(574) 235-9534	http://www.stjosephcountyindiana.com/
St. Joseph	St. Joseph Chamber of Commerce	Paul Laskowski	(574) 234-0051	http://www.sjchamber.org/
Elkhart	Nappanee Chamber of Commerce	Larry Andrews	(574) 773-7812	http://www.nappaneechamber.com/
Kosciusko	Kosciusko County Chamber of Commerce	Mark Dobson	(574) 267-6311	http://www.wkchamber.com/
St. Joseph	City of South Bend	John Voorde	(574) 235-9216	http://www.southbendin.gov/index.asp
Marshall	Plymouth Chamber of Commerce		(574) 936-2323	http://www.plychamber.org/
St. Joseph	Greater Elkhart Chamber		(574) 293-1531	http://www.elkhart.org/links.php
Elkhart	Goshen Chamber of Commerce	Nick Kieffer	(574) 533-2102	http://www.goshen.org/

Regional Level

- Table 22 lists the two **regional** economic development organizations within North Central Indiana with contact information.

Table 22. North Central Indiana Regional Economic Development Organization, 2010

Counties Served	Regional Economic Development Corporation	Contact	Phone	Website
Elkhart, Kosciusko, Marshall, St. Joseph	Michiana Regional Economic Development Corporation	William Wilson	(574) 234-6590	
Elkhart, Kosciusko, Marshall, St. Joseph	Michiana Area Council of Governments		(574) 287-1829	http://www.macog.com/

CHAPTER 3: ENTREPRENEURSHIP AND INNOVATION

The analysis conducted by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs examines the entrepreneurship and innovation profile of North Central Indiana. First, it summarizes information from other studies that were conducted on entrepreneurship and innovation in the North Central Indiana area. Second, it describes major findings from an analysis conducted by the Center for Economic Development.

North Central Indiana is defined as a 4-county region that includes: Elkhart, Kosciusko, Marshall and St. Joseph Counties. In order to create a benchmarking system, we compare North Central Indiana (and its components) to the state of Indiana and the United States. When regional data are not available, the state of Indiana data is substituted.

REVIEW OF OTHER STUDIES: SUMMARY OF FINDINGS

STRENGTHS

STATE ASSISTANCE

The Indiana Economic Development Corporation (IEDC)

The Indiana Economic Development Corporation (IEDC) supports entrepreneurs and businesses. IEDC has set in place innovation and entrepreneurship tax credits such as:

1. *Venture Capital Investment Tax Credit* - The total amount of tax credits certified by the IEDC for any calendar year may not exceed $12.5 million.
2. *Research and Development (R&D) Tax Credit* - equals 15% of qualified research expenses on the first $1 million of investment.
3. *Patent Income Exemption*- 50% of patent income for each of the first 5 years.

Michiana Area Council of Governments (MACOG)

The Michiana Area Council of Governments (MACOG) is a regional intergovernmental agency established to facilitate the collaboration of Elkhart, Kosciusko, Marshall and St. Joseph Counties. MACOG helps provide transportation planning, transit planning, environmental justice, bicycle and pedestrian planning, freight planning, economic development, public participation opportunities, and community education programs.

MACOG provides financing assistance using the following incentives and programs:

1. Tax Increment Finance Districts
2. Enterprise Zones
3. Foreign Trade Zones
4. Brownfield Reuse and Smart Growth initiatives

The Indiana 21st Century Research and Technology Fund[16]

The Indiana 21st Century Research and Technology Fund was created by the Indiana General Assembly in 1999. The 21st Century Fund's goal was to enhance university capacity for commercialization, stimulate research and development efforts in Indiana, and help diversify Indiana's economy. Over the past 8 years, from 2000 to 2008, the 21st Century Fund has invested in 188 projects across Indiana, with total awards of over $238 million.

UNIVERSITY PRESENCE

Thirteen Universities are located within North Central Indiana:

1. Indiana University South Bend
2. Ivy Tech Elkhart
3. Ivy Tech South Bend
4. Goshen College

[16] Center for Business and Economic Research, Ball State University "Comprehensive Examination of the Performance of the Indiana 21st Century Research and Technology Funds" September 2010

5. Bethel College
6. Holy Cross College
7. University of Notre Dame
8. Saint Mary's College
9. Ancilla Domini College
10. Ivy Tech Warsaw
11. Grace College
12. Purdue University – College of Technology at South Bend
13. Harrison College, Elkhart County

Business Accelerators[17]

1. Innovation Park Notre Dame
    - Aims to connect innovators, experts and capital providers to help turn ideas into marketable venture
    - Has eight companies in their portfolio.
    - Provides services including advisory support, networking, and contact with early-stage capital
    - Located on 12 acres near the University of Notre Dame's campus with 55,000 square feet of greenhouse, laboratory, and office space.
2. Lexington Business Center
    - Offers affordable space in a prime location
    - Has a fully equipped training room facility
    - Provides services to assist entrepreneurs and start-up firms
3. Gigot Center Business Incubator
    - Pairs aspiring entrepreneurs in the community with undergraduate and MBA student mentors.
    - Launches high-tech businesses by using business incubator.
4. The Meridian Institute
    - Seeks to innovate, connect and create prosperity through a social network of engaged leaders and entrepreneurs.
5. Michiana Tech
    - A virtual technology park run by the Technology Council of Elkhart in coordination with the Greater Elkhart Chamber of Commerce.
    - Provides entrepreneurs and businesses with information on resources and networking events through a virtual space.
6. North Central Indiana Small Business Development Center (ISBDC)
    - ISBDC provides many resources for entrepreneurs such as strategic planning, market research, financial reports, and county resources.
    - ISBDC also holds local and state workshops and networking events for entrepreneurs.

[17] For a complete listing of North Central Indiana Incubators with full contact information see Appendix A.3.

ORTHOPEDIC MEDICAL DEVICE CLUSTER[18]

EXPANDING THE CLUSTER

1. The region's renewed focus on entrepreneurial growth will provide North Central Indiana with a positive environment for research start-ups.
2. Capitalizing on the orthopedic hub of Warsaw (Kosciusko County), the entrepreneurial communities of St. Joseph, Marshall and Elkhart Counties have tremendous opportunity.

The Indiana Health Industry Forum has identified industry areas to foster and increase entrepreneurship and innovation in the region:

1. *Attraction and growth industries:*
    - Medical Devices – to expand upon synergies occurring in Kosciusko County and the orthopedic companies
    - Electronic medical, research laboratory and testing equipment – based upon research at the University of Notre Dame's College of Engineering and the emerging biotech industry.
    - In-vitro diagnostics and diagnostic substances
2. *Entrepreneurial Growth: Business Incubation*
    - Build upon the creation of Orthoworx and Biocrossroads LINX (pharmaceutical development)
    - Draw upon clinical trials and regional health care cluster
3. *Entrepreneurial Growth: Hospitals*
    - Hospitals as idea generators – develop working relationships with institutions to help foster clinical trials and listen to the hospitals' ideas on what new products would be useful.
    - Technology transfer and innovation
    - Attracting talent

ORTHOWORX AND IN-ORTHONET

- In 2009 the Eli Lilly Endowment awarded the Kosciusko County Community Foundation (KCCF) a $7 million grant to establish orthopedics and community initiative, OrthoWorx. This venture, in cooperation with BioCrossroads, has accepted the task to advance and support growth and innovation within the orthopedics device sector in Kosciusko County.
- OrthoWorx Areas of Focus:
    - Branding and awareness
    - Community enhancement
    - Education
    - Talent and workforce development
    - Transportation and logistics

[18]Sources: BioCrossroads "Warsaw, Indiana: The Orthopedics Capital of the World" September 2009; Regional Report North Central Indiana (Indiana Health Industry Forum) www.ihif.org

- The proposed Indiana Orthopedics Innovation Network (IN-OrthoNet) Orthopedics Research Institute is conceived as an effective means to stimulate new discoveries and translating it into promising areas of new technology.
    - IN-OrthoNet could complement or be incorporated into the initiatives of OrthoWorx
    - Within the mission of IN-OrthNet there is no mention of early-stage funding initiatives

WEAKNESSES[19]

- The availability of early-stage funding in the North Central Indiana region is very limited.
    - When considering the innovation hub of the University of Notre Dame and the orthopedic medical device cluster there should be more interest in providing funding through early-stage networks than currently exists.
- According to the Indiana Health Industry Forum, North Central Indiana has not fully benefited from the synergies of the orthopedics cluster in Warsaw, Indiana, in terms of financial, business services, and residential or commercial real estate, partly because of its self-containment, but also because of its reliance on other regions and urban centers (Chicago) for such services.
- The region has difficulty attracting people to the area because difficulty to travel to the region.
    - The region is not considered desirable and reports cited that Warsaw workers, especially those in leadership roles, do not live in the area. Rather, they live in South Bend or Fort Wayne, due to school choices, child care availability, and university-related programs.
    - One of the local companies holds its Board of Directors meetings in Chicago in order to avoid the expensive and cumbersome travel to North Central Indiana.

INNOVATION

The Indiana Business Research Center[20], in conjunction with the U.S. Economic Development Administration and Purdue University conducted research into the empirical measure of innovation in Indiana's Metro Regions. They created an Innovation Index by combining measures on human capital, economic dynamics, productivity and employment, and economic well-being.

Innovation Index:

- North Central Indiana (4-County Region) = 85.6
- Indiana = 90.0
- United States = 100.0
- Boston-Cambridge-Quincy, MA (MSA) = 126.7 (National leader in Innovation)

[19] Regional Report North Central Indiana (Indiana Health Industry Forum) www.ihif.org
[20] Slaper, Timothy, F and Rachel Justis. "How Innovative Are Indiana's Metro Areas?" InContext. April 2010. www.incontext.indiana.edu

ENTREPRENEURSHIP AND INNOVATION ANALYSIS

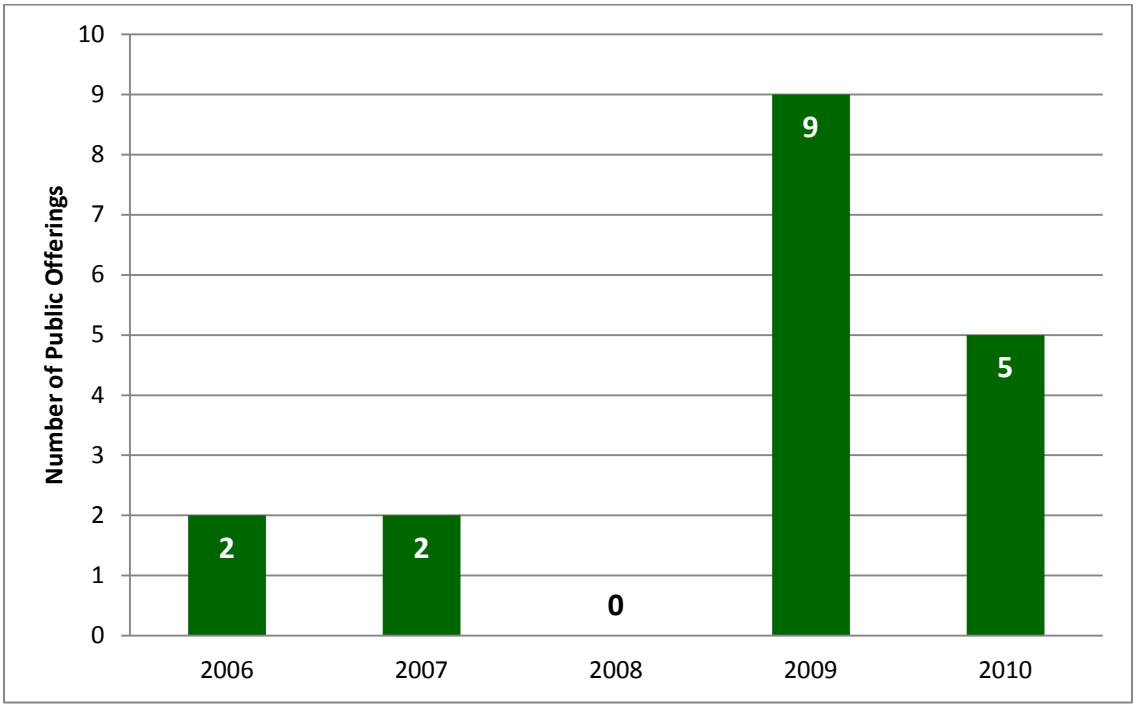
This analysis, conducted by the Center for Economic Development, examines variables that measure entrepreneurship and innovation. Entrepreneurship analysis takes into account public offerings[21], births/deaths, and business churning. Innovation trends are marked by public offerings, university research and development, industry research and development, and patents.

[21] Public offerings are the sale of shares of a company on a public market (i.e. NASDAQ). An Initial public offering (IPO) is the first time sale of stock for a private company going public. A secondary offering is the offering of new stock from an existing public company.

ENTREPRENEURSHIP TRENDS

PUBLIC OFFERINGS

Figure 6. Public Offerings in the State of Indiana, January 2006 - October 2010



- 18 companies had public offerings in Indiana between January 2006 and October 2010; ***one*** of these companies was located in North Central Indiana: Lakeland Financial Corp. (LKFN) listed as an initial public offering on November 13, 2009 (Figure 6).

- For a complete listing of public offerings in Indiana see Appendix A.4.

Birth/Death Ratio and Business Churning

Table 23. Birth/Death Ratio and Business Churning for North Central Indiana, the State of Indiana and the United States, 2007

Area	Birth/Death Ratio	Business Churning
North Central Indiana	1.01	0.19
Indiana	1.06	0.20
United States	1.13	0.20

Note: Birth/Death = Single Unit Births/Single Unit Deaths;
Business Churning = (Total Births + Total Deaths)/Total Establishments
Source: U.S. Census Bureau, Longitudinal Establishment and Enterprise Microdata

- The North Central Indiana region had a lower birth/death ratio (1.01) than the state of Indiana (1.06) and the United States (1.13) in 2007. In business churning, the region (0.19) was slightly below the state of Indiana (0.20) and the United States (0.20) (Table 23). These data indicate that the North Central Indiana region has a weaker business climate and the region has about the same number of business closings as business openings.

CAPITAL MARKETS

Angel and Early-Stage Investment Firms

- Of the 12 angel and early-stage investment firms in Indiana, ***two*** are located in North Central Indiana (Table 24). For a complete listing of angel and early-stage investment firms in Indiana see Appendix A.5.

Table 24. Angel and Early-Stage Investment Firms in North Central Indiana, 2010

Organization	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
Fish Taco Development Fund	South Bend	www.fishtacoventures.com	Angel Group	Invests up to $20,000 per Firm	Notre Dame Family	
Irish Angels	Notre Dame	www.business.nd.edu/IA/	Angel Group		Notre Dame Students and Alumni	Healthcare, Manufacturing, Technology, Finance & more

Source: Angelsoft

Venture Capital Investments

- St. Joseph County had ***one*** start-up firm that received ***$4 million*** from venture capital in 2008[22].
- Of the 36 venture capital investment firms in Indiana, ***two*** are located in North Central Indiana (Table 25). For a complete listing of venture capital investment firms in Indiana see Appendix A.6.

Table 25. Venture Capital Investment Firms in North Central Indiana, 2010

Organization	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
Innovation Park Notre Dame	South Bend	www.innovationparknd.com	Venture Capital			
1st Source Capital Corporation	South Bend	http://www.1stsource.com	Venture Capital	Invests between $250 k to $750 k	Headquartered in Northern Indiana	Companies with a pretax profit of at least $250 k and history of rising profitability

Source: Angelsoft

[22] Source: Thomson Reuters, 2008

Private Equity Investment Firms

- Of the four private equity firms in Indiana, ***none*** are located in North Central Indiana. For a complete listing of private equity firms in Indiana see Appendix A.7.

Management Buyout/Takeover Firms

- Of the six management buyout/takeover firms in Indiana, ***none*** are located in North Central Indiana. For a complete listing of private equity firms in Indiana see Appendix A.8.

21st Century Fund

- The Indiana 21st Century Research and Technology Fund was created by the Indiana General Assembly in 1999. This fund's goal was to enhance university capacity for commercialization, stimulate research and development efforts in Indiana, and help diversify the state's economy.

- Over the past 8 years the 21st Century Fund has invested in 188 projects across Indiana, with a total award amount of over $238 million.

- Of these 188 projects, 17 were in North Central Indiana totaling over $22 million. St. Joseph County accounted for 15 of these awards ($18.54 million) and the other two projects were in Kosciusko County ($3.84 million) (Table 26).

- Table 27 displays the number of venture capital deals and dollars invested compared to the number of venture deals conducted by the 21st Century Fund, as tracked by the 21st Century Fund. The number of deals the 21st Century Fund (21) has conducted supersedes the amount of venture capital deals (16) in the state of Indiana in 2008.

Table 26. 21st Century Fund Activity, by Indiana County, Number of Projects Funded and Award Amount, 2000-2008

County	Funded Projects	Award Amount ($Mil)
Allen	8	$11.30
Bartholomew	1	$1.72
Boone	2	$1.16
Clay	1	$0.35
Dearborn	1	$2.00
Delaware	3	$1.79
Floyd	2	$3.83
Hamilton	9	$12.24
Hancock	1	$0.73
Howard	3	$1.89
Johnson	2	$3.15
Kosciusko	**2**	**$3.84**
Lake	8	$7.90
Madison	5	$6.64
Marion	52	$69.54
Monroe	8	$11.51
Morgan	1	$0.09
Porter	1	$2.00
Shelby	1	$0.26
St. Joseph	**15**	**$18.54**
Tippecanoe	58	$72.97
Vigo	1	$0.87
Whitley	3	$4.00
Total	**188**	**$238.34**

Note: North Central Indiana Counties in bold.
Source: Comprehensive Examination of the Performance of the Indiana 21st Century Research and Technology Funds

Table 27. Venture Capital Investments in the State of Indiana, and Number of 21st Century Funded Projects, 1995-2008

Year	Venture Capital ($Mil)	Number of Venture Capital Deals	Number of 21st Century Funded Projects
1995	$9.10	7	-
1996	$22.77	8	-
1997	$25.17	12	-
1998	$38.96	8	-
1999	$46.70	11	-
2000	$268.97	26	12
2001	$53.75	6	20
2002	$39.40	10	14
2003	$24.50	8	18
2004	$67.25	9	21
2005	$103.63	11	18
2006	$70.30	14	21
2007	$82.59	16	17
2008	$123.60	16	21

Source: Comprehensive Examination of the Performance of the Indiana 21st Century Research and Technology Funds; State Science and Technology Institute

INNOVATION TRENDS

UNIVERSITY RESEARCH AND DEVELOPMENT

Table 28. Research and Development Expenditures at Universities and Colleges ($Mil) in Indiana and All Institutions in the United States, by Science Field and Rank, 2008

Area	All R&D Expenditures ($Mil)	Rank	Environmental Sciences ($Mil)	Rank	Life Sciences ($Mil)	Rank	Math and Computer Sciences ($Mil)	Rank	Physical Sciences ($Mil)	Rank	Psychology ($Mil)	Rank	Social Sciences ($Mil)	Rank	Other Sciences ($Mil)	Rank	Engineering ($Mil)	Rank
Indiana	$954.2	17	$12.5	38	$497.4	21	$38.1	14	$89.9	13	$27.2	9	$64.9	12	$25.3	14	$198.9	13
All Institutions	**$51,908.7**	**-**	**$2,800.3**	**-**	**$31,215.2**	**-**	**$2,089.1**	**-**	**$3,933.0**	**-**	**$928.5**	**-**	**$1,940.5**	**-**	**$1,045.5**	**-**	**$7,956.7**	**-**

Note: Position and Rank based on a total of 51
Source: National Science Foundation, Survey of Research and Development Expenditures at Universities and Colleges

- The highest rank (#9) of university R&D by science field in Indiana occurs in Psychology. Although this field has the highest rank, it accounts for only 3% of university R&D expenditures in Indiana (Table 28).

- The largest share of university R&D expenditures in Indiana occurs in Life Sciences, which accounts for 52% of all R&D expenditures in the state.

Table 29. Research and Development at Universities and Colleges in Indiana, 2004-2008

Institution	FY 2004 ($Mil)	Rank	FY 2005 ($Mil)	Rank	FY 2006 ($Mil)	Rank	FY 2007 ($Mil)	Rank	FY 2008 ($Mil)	Rank
IN U. all campuses	$437.9	32	$338.6	51	$379.1	43	$401.5	38	$411.9	39
Notre Dame	$84.6	138	$78.6	144	$83.9	138	$80.4	142	$97.2	133

Note: Position and Rank based on a total of 679; Expenditures adjusted for inflation to 2008 dollars
SOURCE: National Science Foundation, Survey of Research and Development Expenditures at Universities and Colleges

- Indiana University was selected for analysis because that institution has a satellite campus in North Central Indiana located in the city of South Bend in St. Joseph County. In addition, the University of Notre Dame is located in St. Joseph County.

- Table 29 shows that the University of Indiana (all campuses) is among the top universities in R&D expenditures among universities and colleges reported by the National Science Foundation. Out of 679 academic institutions, the University of Indiana ranged in rank from #32 to #51. The University of Notre Dame ranged from #133 to #144 between 2004 and 2008.

- R&D expenditures at the University of Indiana, from 2004 to 2008, were consistently around $400 million each year. This number, although very large, is below the top 20 universities' average of $750 million each year.

- In 2008, the state of Indiana had a total of $954 million in R&D Expenditures. Indiana University (all campuses) and the University of Notre Dame had total R&D Expenditures of $509 million. This total represents 54% of all R&D expenditures at universities and colleges within the state.

- Although the University of Notre Dame received smaller amounts of funding than the University of Indiana, R&D expenditures at the University of Notre Dame rose by 15% ($12.6 million) between 2004 and 2008.

Industry Research and Development

Table 30. Industry Research and Development Expenditures and Industry R&D Expenditures per R&D Employee, in Indiana and the United States, 2007

Area	Industry R&D Expenditures ($Bil)	Industry R&D/ R&D Employees ($Mil)
Indiana	$4.94	$1.10
United States	**$269.27**	**$0.43**

Note: Industry R&D Expenditures per R&D Employee = Industry R&D Expenditures/ NAICS 5417 Employment;
Source: National Science Foundation, Survey of Industrial Research and Development; Moody's Economy.com

- Industry R&D expenditures for the state of Indiana in 2007 were $4.94 billion (Table 30).
- The expenditures per employee in Indiana ($1.10 million) were well above those for the United States ($0.43 million).
- An explanation for the difference in Indiana's ranking between R&D dollar amount and R&D per employee is that the size of the labor force in the R&D industry in Indiana is relatively smaller than that of the United States.

PATENTS

Patents are an alternative measure for regional innovative activities and are often used as a proxy for innovation. Each patent includes the name of at least one individual inventor (many have multiple inventors). Ownership is assigned to an individual inventor or to a corporation, university, or another research institution (assignee).

Data on patents were downloaded (those already granted and applications) in the state of Indiana between January 2006 and September 2010. To be included in the data for the North Central Indiana region, the patent had to include at least one inventor or an assignee from North Central Indiana. An inventor or an assignee can be from outside North Central Indiana (referred to as "Outside").

Patent Counts

Table 31. North Central Indiana Patent Frequency Counts, January 2006 - September 2010

Year	Number of Patents	Percent of Total
2006	544	26.7%
2007	582	28.6%
2008	505	24.8%
2009	329	16.2%
2010	76	3.7%
Total	**2,036**	**100.0%**

Source: Delphion.com

Table 32. Patents: North Central Indiana, January 2006 – September 2010

Designation	All Patents: Granted and Applications
North Central Indiana Inventor without Assignee	628
North Central Indiana Inventor and North Central Indiana Assignee	489
North Central Indiana Inventor and Outside Assignee	421
Outside Inventor and North Central Indiana Assignee	498
Total Patent Applications from North Central Indiana Inventors and/or Assignees	**2,036**

Source: Delphion.com

- In the state of Indiana there were was a total of 10,066 patents (granted and applied for) between January 2006 and September 2010. Of these, 2,036 patents are from North Central Indiana (20%) (Table 31).

- From 2006 to 2009 there was a significant decrease in the number of patents. In North Central Indiana in 2006 there were 544 patents, and in 2009 that number declined to 329 (-39.5%). This is an indication of the recessionary trends in patent data.

- Of the 2,036 patents, 489 were from a North Central Indiana inventor with a North Central Indiana assignee (24%) (Table 32).

- 48% of patents had an assignee from North Central Indiana; showing that businesses within North Central Indiana are one of the major drivers of local patents.

- The largest aggregation of patents is inventors of individual patents (North Central Indiana Inventor with no Assignee). Individually owned patents accounted for 30.8% of total patents (628).

Patent Counts by Assignee

Table 33. Top 25 Patent Assignee Companies in North Central Indiana, January 2006 - September 2010

Assignee Name	Number of Patents	Percentage of Total Patents	Rank
Warsaw Orthopedic, Inc.	333	16.4%	1
Zimmer, Inc.	250	12.3%	2
Zimmer Technology, Inc.	191	9.4%	3
Biomet Manufacturing Corp.	111	5.5%	4
Depuy Products, Inc.	82	4.0%	5
Whirlpool Corp.	75	3.7%	6
Biomet Sports Medicine, Inc.	26	1.3%	7
Honeywell International, Inc.	23	1.1%	8
Arthrotek, Inc.	16	0.8%	9
University of Notre Dame	16	0.8%	10
Elkhart Brass Manufacturing Co., Inc.	14	0.7%	11
Polygon Co.	14	0.7%	12
Warsaw Orthopedics, Inc.	12	0.6%	13
Tellabs Operations, Inc.	11	0.5%	14
Biomet Biologics, LLC.	9	0.4%	15
Hubbell Inc.	8	0.4%	16
Logi-Stick, Inc.	8	0.4%	17
Symmetry Medical, Inc.	8	0.4%	18
Warsaw Orthopedic, Inc.	8	0.4%	19
Innovative Instruments, Inc.	6	0.3%	20
Lippert Components, Inc.	6	0.3%	21
Nibco, Inc.	6	0.3%	22
Siemens Healthcare Diagnostics, Inc.	6	0.3%	23
Norco Industries, Inc.	5	0.2%	24
Bennington Marine, Inc.	4	0.2%	25

Note: Total Patents = 2,036; Position and Rank based on 129
Source: Delphion.com

- The top five companies (Warsaw Orthopedic, Inc.; Zimmer, Inc.; Zimmer Technology, Inc.; Biomet Manufacturing, Corp.; and Depuy Products, Inc.) accounted for 47.5% (967) of patents in the North Central Indiana area (Table 33).

Patent Counts by Industry Classification

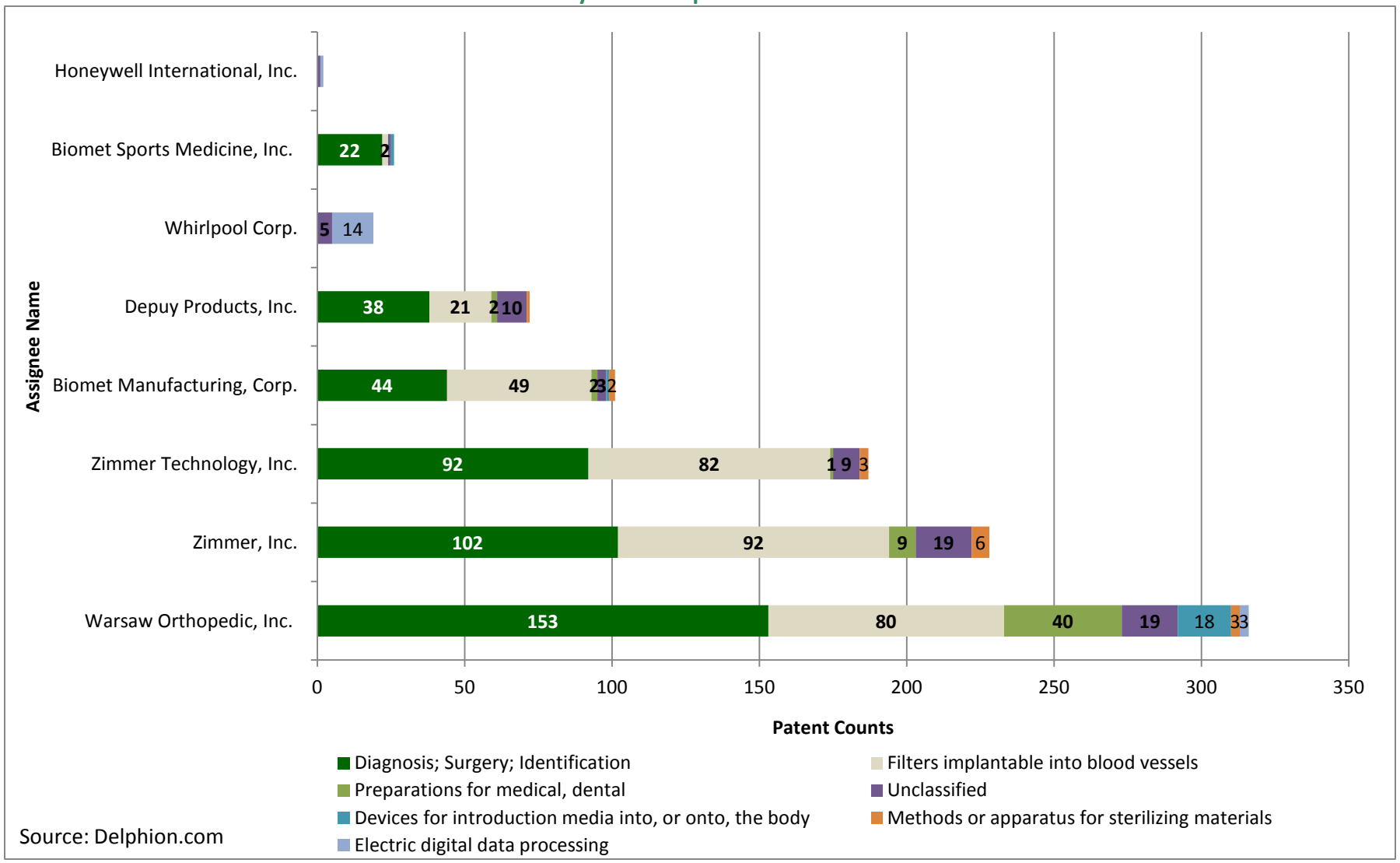
Table 34. Top 15 International Patent Classifications in North Central Indiana by Number of Patents, January 2006 – September 2010

International Patent Classifications	Number of Patents	Percentage of Total	Rank
Diagnosis; Surgery; Identification	638	31.3%	1
Filters implantable into blood vessels; Prostheses; Devices providing patency to, or preventing collapsing of, tubular structures of the body; Orthopedic, nursing or contraceptive devices; Formentation; Treatment or protection of eyes or ears; Bandages, dressings or absorbent pads; First-aid kits	434	21.3%	2
Preparations for medical, dental or toilet purposes	87	4.3%	3
Electric digital data processing	34	1.7%	4
Investigating or analyzing materials by determining their chemical or physical properties	26	1.3%	5
Methods or apparatus for sterilizing materials or objects in general; disinfection, sterilization or deodorization of air; chemical aspects of bandages, dressings, absorbent pads, or surgical articles; materials for bandages, dressings, absorbent pads or surgical articles.	25	1.2%	6
Devices for introduction media into, or onto, the body; devices for transducing body media or for taking media from the body; devices for producing or ending sleep or stupor	25	1.2%	7
Motor vehicles; trailers	23	1.1%	8
Vehicles adapted for load transport or to transport, to carry, or to comprise special loads or objects	18	0.9%	9
Process for applying liquids or other fluent materials to surfaces, in general	17	0.8%	10
Animal husbandry; care of birds, fishes, insects; fishing; rearing or breeding animals, not otherwise provided for; new breeds of animals	16	0.8%	11
Tables; desks; office furniture; cabinets; drawers; general details of furniture	15	0.7%	12
Laundering, drying, ironing, pressing or folding textile articles	15	0.7%	13
Shaping or joining of plastics; shaping of substances in a plastic state, in general; after- treatment of the shaped products, i.e. repairing.	14	0.7%	14
Layer products, i.e. Products built-up of strata of flat or non-flat, e.g. cellular or honeycomb form	14	0.7%	15

Source: Delphion.com

- Table 34 displays the Top 15 patent counts by the International Patent Classification name (IPC) and shows that the Top 15 account for almost 69% of patents (1,401) in the North Central Indiana region.
- Theses scientific fields identify the technology strengths in the North Central Indiana region.

Figure 7. North Central Indiana Patents: Top 8 Assignees by International Patent Classification Code, January 2006 – September 2010



Source: Delphion.com

Patent Assignee by Industry Classification

- Figure 7 displays North Central Indiana patent counts by Assignee and International Patent Classification. Based upon the companies and patents, the medical device cluster has the largest quantity of patents.

- The largest number of patents held by an individual company within a single International Patent Classification was Warsaw Orthopedic, holding 153 patents in the category Diagnosis, Surgery, Identification. Warsaw Orthopedics' patents accounted for 24% of all patents in this category.

SBIR/STTR Awards

Table 35. SBIR/STTR Awards by Year and Total Dollars in the North Central Indiana Region, 2005 – 2010

Year	Number of Awards	Total Awards ($)
2005	7	$1,718,704
2006	6	$2,494,299
2007	2	$444,938
2008	2	$199,875
2009	3	$239,434
2010	1	$749,819
Total	**21**	**$5,847,069**

Note: SBIR/STTR Awards totaled from the following government agencies: DHS, DOC, DOD, DOE, DOI, DOT, ED, EPA, HHS, HUD, NASA, NIH, NIST, NRC, NSF, and USDA
Source: Small Business Administration Tech-Net; National Institute of Health

- 21 SBIR/STTR awards were distributed between 2005 and 2010 in North Central Indiana to 7 different firms totaling $5.8 million. All but one of these companies was located in St. Joseph County.
- Over these six years, the largest number of awards (7) occurred in 2005, while in 2006 the largest overall amount allocated was almost $2.5 million.

Table 36. SBIR/STTR Awards by Firm in the North Central Indiana Region, 2005 - 2010

Firm Name	City	County	Agency	Year	Dollars	Purpose
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOD, MDA	2005	$749,898.00	ABL Smart Piping System
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOD, AF	2005	$99,944.00	Structurally Integrated Hybrid Battery
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOD, MDA	2005	$99,946.00	Thin Film Thermal Battery Igniters
Scientific Methods, Inc.	Granger	St. Joseph	USDA	2005	$79,917.00	Quantitative Kit to Test for Fecal Matter
Scientific Methods, Inc.	Granger	St. Joseph	EPA	2005	$69,930.00	Novel Virus Capture System, Silica Matrix
Yinnel Tech, Inc.	South Bend	St. Joseph	NIH	2005	$519,125.00	Optimization of Low-cost CZT for Nuclear Imaging Devices
Tracera, LLC	Elkhart	Elkhart	NIH	2005	$99,944.00	Fluorine-18 Radiosynthesis Module SBIR Topic 207 Fast Track
Granger Eng	Granger	St. Joseph	NSF	2006	$499,849.00	Variable Diameter Fiber Reinforced Biopolymers
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOD, MDA	2006	$749,968.00	Thin Film Thermal Battery Igniters
Scientific Methods, Inc.	Granger	St. Joseph	USDA	2006	$296,000.00	Quantitative Kit to Test for Fecal Matter
Scientific Methods, Inc.	Granger	St. Joseph	EPA	2006	$343,486.00	Novel Virus Capture System, Silica Matrix
Scientific Methods, Inc.	Granger	St. Joseph	EPA	2006	$69,999.00	Automated Sample Collection and Concentration System
Yinnel Tech, Inc.	South Bend	St. Joseph	NIH	2006	$534,997.00	Optimization of Low-cost CZT for Nuclear Imaging Devices
Scientific Methods, Inc.	Granger	St. Joseph	EPA	2007	$344,938.00	Automated Sample Collection and Concentration System
Yinnel Tech, Inc.	South Bend	St. Joseph	DOE	2007	$100,000.00	Neutron Scintillators Based on Nanomaterials
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOD, DARP	2008	$99,998.00	Hybrid Intelligent Power Systems
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOT	2008	$99,877.00	New In-field Composite Repair Techniques
Remense, Inc.	South Bend	St. Joseph	DOD, AF	2009	$99,434.00	Radio Frequency Tomography
Rfare LLC	South Bend	St. Joseph	DOD, Navy	2009	$70,000.00	Software Radio Tools
Scientific Methods, Inc.	Granger	St. Joseph	EPA	2009	$70,000.00	Rapid Concentration of Viruses from Water
Odyssian Technology, LLC	Mishawaka	St. Joseph	DOD, DARP	2010	$749,819.00	Hybrid Intelligent Power Systems

Note: SBIR/STTR Awards totaled from the following government agencies: DHS, DOC, DOD, DOE, DOI, DOT, ED, EPA, HHS, HUD, NASA, NIH, NIST, NRC, NSF, and USDA
Source: Small Business Administration Tech-Net; National Institute of Health

- Odyssian Technology, LLC and Scientific Methods, Inc. tied for the largest number of SBIR/STTR awards (7 each) from 2005 to 2010. Odyssian Technology, LLC received over $2.6 million over this period. Although Scientific Methods, Inc. received the same number of awards as Odyssian Technology, LLC the total award dollar amount was half (almost $1.3 million). These two companies accounted for 67% of all award dollars for the North Central Indiana region.
- Companies that receive multiple awards over several years may indicate progress towards commercialization.

APPENDIX

A.1. Fastest Growing Private Firms in Indiana, by National Rank and Revenue Growth (2004-2007)

National Rank	Company Name	City	Revenue ($Mil)	Revenue Growth (2004-2007)	Year Founded	Employee Count
53	Trace Communications	Indianapolis	$9.00	2896.20%	2003	16
277	CMR Construction & Roofing	Indianapolis	$19.00	985.50%	2002	30
304	National Trade Supply	Indianapolis	$13.60	916.40%	2002	14
351	**Platinum Builders**	**New Carlisle**	**$2.40**	**839.60%**	**2003**	**28**
387	Defender Direct	Indianapolis	$77.00	785.00%	1998	1000
421	iGoDigital	Indianapolis	$2.10	738.50%	1999	22
444	**Working Person's Store**	**Lakeville**	**$15.20**	**717.30%**	**1995**	**70**
452	Bluefish Wireless Management	Indianapolis	$10.30	698.30%	2001	75
453	Passageways	West Lafayette	$2.20	697.10%	2003	26
638	Bone Dry Roofing	Indianapolis	$25.10	520.80%	1987	110
668	LGC Associates	Indianapolis	$8.00	505.70%	2001	25
761	Jenmarco	McCordsville	$3.00	460.70%	1997	2
782	US Trades	Indianapolis	$21.90	452.20%	2000	240
1129	Consona	Indianapolis	$130.50	331.60%	1986	700
1145	Novae	Markle	$12.30	326.90%	1995	120
1175	lasta.com	Carmel	$3.60	319.90%	2000	35
1204	ExactTarget	Indianapolis	$48.00	314.40%	2001	340
1377	Venture Logistics	Indianapolis	$83.30	275.70%	1992	400
1422	Riverside Manufacturing	Fort Wayne	$49.70	264.30%	1992	490
1466	AIT Laboratories	Indianapolis	$16.30	258.40%	1990	200
1488	Premiere Credit of North America	Indianapolis	$15.10	254.10%	1999	206
1493	Angie's List	Indianapolis	$23.60	252.90%	1995	350
1502	CNC Industries	Fort Wayne	$6.70	252.00%	1995	48
1519	Elwood Staffing	Columbus	$159.50	248.50%	1980	195
1727	Home Reserve	Fort Wayne	$3.00	218.30%	2000	23
1735	Ebit Information Systems	Jeffersonville	$4.20	217.40%	2003	42
1948	Trai-Cor Processing	East Chicago	$4.80	190.70%	2001	35
1973	Endangered Species Chocolate	Indianapolis	$13.20	188.70%	1993	52
2015	Employment Plus	Bloomington	$67.60	184.20%	1993	94

Note: Position and Rank based on a total of 5,000; North Central Indiana companies in bold
Source: www.inc.com

A.1. Fastest Growing Private Firms in Indiana, by National Rank and Revenue Growth (2004-2007) (Continued)

National Rank	Company Name	City	Revenue ($Mil)	Revenue Growth (2004-2007)	Year Founded	Employee Count
2044	Jackson Systems	Indianapolis	$8.20	180.70%	1997	25
2125	ESW	Crown Point	$5.00	173.90%	1987	60
2132	Enviroforensics	Indianapolis	$5.60	173.30%	2002	25
2146	nFocus Technologies	Indianapolis	$5.60	171.80%	2001	50
2201	Tri-Auto Enterprises	Indianapolis	$26.90	167.80%	2001	85
2212	American Sentry Guard	Greenwood	$7.70	166.60%	1999	43
2223	Girtz Industries	Monticello	$14.30	165.80%	1981	128
2227	Premier Ag	Columbus	$92.00	165.60%	1927	105
2579	Meyer Distributing	Jasper	$90.10	141.60%	1982	400
2925	Productive Resources	Columbus	$7.70	122.40%	1999	120
2985	**St. Clair Apparel**	**South Bend**	**$8.80**	**119.50%**	**1998**	**15**
3011	Healthx	Indianapolis	$7.90	118.00%	1994	45
3142	Option Six	Bloomington	$4.40	110.30%	2001	30
3151	Polymer Technology Systems	Indianapolis	$18.60	109.90%	1992	105
3204	**Inter Technologies**	**South Bend**	**$2.80**	**107.20%**	**2000**	**8**
3223	Thompson Thrift	Terre Haute	$45.00	106.00%	1996	125
3276	Kountry Wood Products	Nappanee	$25.40	103.10%	1998	128
3397	Unique Window & Door	Indianapolis	$16.10	98.00%	1983	115
3595	Accent Marketing Services	Jeffersonville	$113.00	89.30%	1993	4000
3687	Trilithic	Indianapolis	$39.90	85.30%	1987	180
3720	That's Good HR	Indianapolis	$10.00	84.00%	1998	24
3751	**ECI**	**Elkhart**	**$9.50**	**82.80%**	**1996**	**80**
4017	ProTrans International	Indianapolis	$129.50	72.40%	1993	600
4068	Safety Management Group of Indiana	Indianapolis	$13.20	70.40%	1994	105
4108	Integrity Metals	Connersville	$35.80	68.80%	1979	30
4128	Dry Dock Marine Center	Angola	$3.90	68.10%	1987	12
4199	Aerodyn Engineering	Indianapolis	$5.00	65.80%	2002	30
4220	Strategic Staffing Solutions	Indianapolis	$3.90	65.10%	2002	7
4252	Circle B	Indianapolis	$32.40	64.20%	1959	175

Note: Position and Rank based on a total of 5,000; North Central Indiana companies in bold
Source: www.inc.com

A.1. Fastest Growing Private Firms in Indiana, by National Rank and Revenue Growth (2004-2007) (Continued)

National Rank	Company Name	City	Revenue ($Mil)	Revenue Growth (2004-2007)	Year Founded	Employee Count
4347	Stardust Transportation	Indianapolis	$5.00	61.3%	2000	42
4440	GasAmerica Services	Greenfield	$535.20	57.5%	1984	830
4457	Apex Precision Technologies	Camby	$20.90	56.9%	1994	70
4466	Dekker Vacuum Technologies	Michigan City	$12.10	56.3%	1998	54
4474	Haggard & Stocking	Indianapolis	$32.10	56.2%	1972	80
4578	T2 Systems	Indianapolis	$12.40	52.9%	1994	120
4622	HR Solutions	Evansville	$2.80	51.6%	1994	20
4764	Kruse Worldwide Courier	Fort Wayne	$5.00	47.7%	2001	55
4786	Desktop Resources	Indianapolis	$2.50	47.0%	1995	18
4839	Aquatic Control	Seymour	$10.10	45.6%	1966	22
4853	Weddle Bros. Construction Companies	Bloomington	$103.70	45.1%	1952	250
4879	**Bennington Marine**	**Elkhart**	**$152.00**	**44.5%**	**1997**	**0**

Note: Position and Rank based on a total of 5,000; North Central Indiana companies in bold
Source: www.inc.com

A.2. Top 50 Employers by Number of Employees in North Central Indiana, 2010

Rank	Company Name	City	Employment	Sales ($ Millions)	Type of Business	Ticker Symbol	Stock Exchange
1	University Of Notre Dame	Notre Dame	4000	----	Private		
2	Memorial Hospital-South Bend	South Bend	3200	$339.2	Private		
3	R R Donnelley	Warsaw	1700	$351.9	Public	RRD	NASDAQ
4	Jayco Inc	Middlebury	1600	$250.0	Private		
5	Zimmer Holdings Inc	Warsaw	1600	----	Public	ZMH	NYSE
6	Elkhart General Healthcare	Elkhart	1500	$457.5	Private		
7	Henkels & Mc Coy	Elkhart	1500	$315.0	Private		
8	Biomet Manufacturing Corp	Warsaw	1300	----	Private		
9	CTB Inc	Milford	1300	----	Public	CTB	NASDAQ
10	Goshen General Hospital	Goshen	1200	$127.2	Private		
11	Supreme Industries Inc	Goshen	1200	----	Public	STS	NYSE Amex
12	Conn-Selmer Inc	Elkhart	1100	----	Public	LVB	NYSE
13	St Joseph County Of Insurance	South Bend	1064	----	Private		
14	Heartland Recreational Vehicle	Elkhart	1000	$1,850.0	Private		
15	Honeywell Aerospace	South Bend	1000	$273.0	Public	HON	NYSE
16	Madison Center & Hospital	South Bend	1000	$81.0	Private		
17	Utilimaster Corp	Wakarusa	1000	----	Public	SPAR	NASDAQ
18	KIK Custom Products	Elkhart	900	$215.1	Private		
19	Newmar Corp	Nappanee	900	$150.0	Private		
20	St Joseph Regional Medical Ctr	Mishawaka	900	$95.4	Private		
21	Biomet Inc	Warsaw	850	----	Private		
22	DePuy Inc	Warsaw	837	----	Public	JNJ	NYSE
23	Supreme Corp	Goshen	833	----	Public	STS	NYSE Amex
24	AM General LLC	Mishawaka	800	$1,285.6	Private		
25	Chore-Time Equipment	Milford	800	$398.4	Public	CTB	NASDAQ

Note: Data extracted on February 18, 2011
Source: Reference USA

A.2. Top 50 Employers by Number of Employees in North Central Indiana, 2010 (Continued)

Rank	Company Name	City	Employment	Sales ($ Millions)	Type of Business	Ticker Symbol	Stock Exchange
26	Creation Windows-Indiana Inc	Elkhart	800	$184	Private		
27	Home Crest Cabinetry	Goshen	800	$136	Public	FO	NYSE
28	Kosciusko Community Hospital	Warsaw	800	$84.8	Private		
29	Norfolk Southern	Elkhart	780	$175.5	Public	NSC	NYSE
30	Four Winds Intl	Elkhart	700	----	Public	THO	NYSE
31	Gulf Stream Coach Inc	Nappanee	700	----	Private		
32	Thor Motor Coach	Elkhart	700	$170.8	Public	THO	NYSE
33	Liberty Mutual	Mishawaka	682	$149.358	Private		
34	CTS Electronics Components	Elkhart	650	$132.6	Public	CTS	NYSE
35	KIK Custom Products	Elkhart	650	$209.3	Private		
36	Coleman Cable Inc	Bremen	600	$684	Public	CCIX	NASDAQ
37	Dalton Corp	Warsaw	600	----	Public	7432	Nikkei
38	Greencroft Retirement Communities	Goshen	600	$39.6	Private		
39	Syndicate Systems	Middlebury	600	----	Public		
40	Tribune Business Weekly	South Bend	600	$104.4	Private		
41	Dutchmen Manufacturing Inc	Goshen	570	----	Public	THO	NYSE
42	Keystone RV Inc	Goshen	550	----	Public	THO	NYSE
43	Robert Bosch Braking Systems	South Bend	550	$266.2	Private		
44	Highway Dept Toll Road Div	Granger	516	----	Private		
45	Atwood Mobile Products LLC	Elkhart	500	----	Private		
46	Cequent Towing Products	Goshen	500	$97.5	Public		
47	Das Dutchman Essenhaus	Middlebury	500	$49	Private		
48	Diversified Machine Inc	Bristol	500	$103.5	Private		
49	Goshen College	Goshen	500	$0	Private		
50	Greencroft Retirement	Goshen	500	$33,000,000	Private		

Note: Data extracted on February 18, 2011
Source: Reference USA

A.3. Business Incubators and Research Parks in North Central Indiana, October 2010

Organization	Address	City	State	Zip	Phone	Website
North Central ISBDC	401 East Colfax Avenue, Suite 120	South Bend	IN	46617	(574) 282-4350	http://www.southbendbcg.com
Innovation Park at Notre Dame	1400 E. Angela Blvd.	South Bend	IN	46617	(574) 631-8825	http://www.innovationparknd.com
Lexington Business Center	421 South Second Street	Elkhart	IN	46516	(574) 522-0390	http://www.lexingtonbizctr.com
Gigot Center Business Incubator	204 Mendoza College of Business	Notre Dame	IN	46556	(574) 631-9853	http://www.nd.edu/~entrep/businessIncubator.html
Meridian Institute	1427 West 86th Street, Suite 195	Indianapolis	IN	46260	(317) 644-0162	http://www.themeridianinstitute.org/
Michiana Tech	418 S. Main St.	Elkhart	IN	46515	(574) 293-1531	http://www.michianatech.org

Source: Indiana Venture Resource Guide (2005); Individual Business Incubator Websites

A.4. Public Offerings in Indiana, January 2006 - October 2010

Company Name	Public Offering	Date	Symbol	Exchange	Sector	Industry
Windrose Medical Properties Trust	Secondary	6/16/2006	WRS	NYSE	Health Care	Medical Equipment & Supplies
WellPoint Inc.	Secondary	9/19/2006	WLP	NYSE	Financial	Insurance
Vectren Corp.	Secondary	2/23/2007	VVC	NYSE	Utilities	Natural Gas Utilities
Haynes International Inc.	Initial	3/20/2007	HAYN	Nasdaq NM	Capital Goods	Metal Mining
Mead Johnson Nutrition Co.	Initial	2/11/2009	MJN	NYSE	Healthcare	Healthcare Services
Kite Realty Group Trust	Secondary	5/13/2009	KRG	NYSE	Services	Real Estate Operations
hhgregg Inc.	Secondary	7/2/2009	HGG	NYSE	Basic Materials	Retail (Technology)
Brightpoint Inc.	Secondary	7/13/2009	CELL	Nasdaq NM	Technology	Communications Equipment
Old National Bancorp (ONB)	Secondary	9/23/2009	ONB	NYSE	Financial	Regional Banks
Lakeland Financial Corp.	Secondary	11/13/2009	LKFN	Nasdaq NM	Financial	Regional Banks
Calumet Specialty Products Partners LP	Secondary	12/9/2009	CLMT	N/A	Energy	Oil & Gas - Integrated
KAR Auction Services Inc.	Initial	12/11/2009	KAR	NYSE	Services	Auto & Truck Parts
CNO Financial Group Inc.	Secondary	12/16/2009	CNO	NYSE	Services	Insurance
First Merchants Corp.	Secondary	3/30/2010	FRME	Nasdaq NM	Financial	Regional Banks
Duke Realty Corp.	Secondary	6/17/2010	DRE	NYSE	Services	Real Estate Operations
Simon Property Group Inc.	Secondary	8/6/2010	SPG	NYSE	Services	Real Estate Operations
Wabash National Corp.	Secondary	8/19/2010	WNC	NYSE	Transportation	Trucking
Vera Bradley	Initial	10/21/2010	VRA	Nasdaq NM	Consumer Goods	Textile - Apparel Footwear & Accessories

Source: IPO Monitor; Yahoo Finance

A.5. Angel and Early-Stage Investment Firms in Indiana, October 2010

Organization	Contact	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
Northeast Indiana Angel Network	Dr. Daryl Yost	Fort Wayne	www.niic.net/application.aspx	Angel Group	Half Million	Northeast Indiana	Innovation, Technology, Corporate R&D, Emerging Growth Companies
Halo Capital Group		Indianapolis	www.halocapitalgroup.com	Angel Group	$13.6 Million in investments	Central Indiana	Innovation Economy
StepStone Angels	Oscar Moralez	Indianapolis	www.stepstonebusinesspartners.com	Angel Group		Greater Indianapolis Area	Medical Products Orthopediatrics, SonarMed and Health Care IT
Barnard Associates		Indianapolis	http://www.barnardassociates.com/psvf.htm	Angel Group			
Irish Angels	**Laura Hollis**	**South Bend**	**www.business.nd.edu/IA/**	**Angel Group**		**Notre Dame Students and Alumni**	**Health Care, Manufacturing, Technology, Finance**
Fish Taco Development Fund		**South Bend**	**www.fishtacoventures.com**	**Angel Group**	**Invests up to $20,000**	**Notre Dame Family**	
P3 Alliance		West Lafayette	www.purdueresearchpark.com	Angel Group		West Lafayette, Indianapolis, Merrillville and New Albany	Technology-based Companies
Clarian Health Ventures		Indianapolis	http://www.clarianhealthventures.com/contactus/contact.htm	Early Stage Venture	Invests up to $3 Million	Indiana	Business or clinical need in the market
Gazelle TechVentures		Carmel	http://www.gazellevc.com/overview/overview.htm	Early, Mid and Late Stage Venture		Primarily Indiana	
StartUp Indiana		Muncie	www.StartUpIndiana.com	Entrepreneur Conference	Invests between $25k and $100k	Eastern Indiana	
Inception LLC	Mike Fitzgerald	Indianapolis	http://www.inceptionllc.com/	Seed and Early Stage Venture	Invests between $50,000 and $500 k	Indiana	
Indiana Venture Capital Investment Tax Credit		Indianapolis	http://www.iedc.in.gov	Angel and Seed Funding	Provides Tax Credit	Indiana	Fast growing Indiana companies

Note: North Central Indiana Companies in bold
Source: Indiana Health Industry Forum; Ball State University; Northeast Indiana Regional Partnership; Angelsoft; Pratt's Guide to Private Equity and Venture Capital Sources; Indiana Venture Resource Guide (2005)

A.6. Venture Capital Investment Firms in Indiana, October 2010

Organization	Contact	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
1st Source Capital Corporation		**South Bend**	**http://www.1stsource.com**	**Venture Capital**	**Invests between $250 k to $750 k**	**Headquartered in Northern Indiana**	**Invests in companies that have a pretax profit of at least $250k and history of rising profitability**
AGS Capital, LLC		Indianapolis	www.ags-capital.com	Venture Capital			
Ambassador Enterprises		Fort Wayne	http://ambassador-enterprises.com/investments.php	Venture Capital			
Arboretum Ventures		Indianapolis	http://arboretumvc.com	Venture Capital		Principally Midwest	Invests in early stage life science companies; focus on medical devices, pharmaceuticals, biotechnologies
BioCrossroads - Indiana Future Fund		Indianapolis	http://www.biocrossroads.com/content.aspx?Key=22#1	Venture Capital	$73 Million	Indiana	Life Sciences Companies
BioCrossroads - Indiana Inext Fund		Indianapolis	http://www.biocrossroads.com/content.aspx?Key=41	Venture Capital	$58 Million	Indiana	Life Sciences Companies
BioCrossroads - Seed Fund		Indianapolis	http://www.biocrossroads.com/content.aspx?Key=17#2	Venture Capital	$6 Million	Indiana	Life Sciences Companies
Blue Chip Venture Co.		Carmel	http://www.bcvc.com/contact/index.lasso	Venture Capital	Invests up to $6 Million per Company		Software and Services, Media and Marketing, Health Care
Cambridge Ventures LP (Lynx Capital Corporation)		Indianapolis	www.cambridgecapitalmgmt.com	Venture Capital	Invests up to $1 Million		
CID Capital		Indianapolis	http://www.cidequity1.com/	Venture Capital			
Command Equity Group LLC		Bloomington	www.commandequity.com	Venture Capital			
EOS Asia Investments, Ltd.	Scott Durlacher	Indianapolis	http://www.eosfunds.com/	Venture Capital	Initial investments should be at least $15 Million		Eos makes private investments in companies where management agrees to execute a plan leading to higher liquidity and valuation

Note: North Central Indiana Companies in bold
Source: Indiana Venture Resource Guide (2005); Indiana Health Industry Forum; Ball State University; Northeast Indiana Regional Partnership; Angelsoft; Pratt's Guide to Private Equity and Venture Capital Sources; National Venture Capital Association

A.6. Venture Capital Investment Firms in Indiana, October 2010 (Continued)

Organization	Contact	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
Equity Investment Group	George Huber	Fort Wayne		Venture Capital			
Guidant Corporation		Spencer	http://www.guidant.com	Venture Capital	Over $1 Billion a year between 2006 and 2009	Global	Committed to investing in external, or acquired, R&D through acquisitions and investments in new businesses
Hammond, Kennedy, Whitney & Co., Inc.		Indianapolis	www.hkwinc.com	Venture Capital		North American-based Companies	
Heron Capital Venture Fund	Greg Maurer	Indianapolis	http://www.heroncap.com/index.html	Venture Capital			Life Sciences, Therapeutic Medical Devices
Indiana 21st Century Research and Technology Fund		Indianapolis	http://www.21fund.org/	Venture Capital	Awarded $49 Million between 2007 and 2009	Indiana	Venture Start-up
Indiana Investment Fund	Curt Rossman	Indianapolis	http://www.indianainvestmentfund.com	Venture Capital			
Innovate Indiana Fund	Bill Stephan	Indianapolis	innovate.indiana.edu	Venture Capital	$10 Million		Technology-based Companies
Innovation Park Notre Dame	**Dave Brenner**	**South Bend**	**www.innovationparknd.com**	**Venture Capital**			
Irwin Ventures LLC		Columbus		Venture Capital			
Lilly BioVentures		Indianapolis	http://www.lillybioventures.com/	Venture Capital			Targets Investment Opportunities in Biotech Start-Up Companies
Lilly Ventures		Indianapolis	www.lillyventures.com	Venture Capital	$200 Million under Management	North America and Europe	Biotechnology, Medical Technology and Healthcare IT
Main street Venture Fund	Karen Goldner	Fort Wayne	www.mainstreetventurefund.com	Venture Capital	Invests up to $500,000		Healthcare, Technology Services, Devices and Services Companies

Note: North Central Indiana Companies in bold
Source: Indiana Venture Resource Guide (2005); Indiana Health Industry Forum; Ball State University; Northeast Indiana Regional Partnership; Angelsoft; Pratt's Guide to Private Equity and Venture Capital Sources; National Venture Capital Association

A.6. Venture Capital Investment Firms in Indiana, October 2010 (Continued)

Organization	Contact	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
Midpoint Food and Agriculture Fund LP		Carmel	http://www.midpointvc.com/index.htm	Venture Capital	Up to $3 Million per Portfolio		Food and Agriculture, Bioprocessing and Renewables, Production Technologies
Monument Advisors		Indianapolis	www.monumentadv.com	Venture Capital	Invests in firms requiring less than $5 Million in capital	Indiana and Midwest	
North River Capital		Fort Wayne	http://www.northrivercapital.net/	Venture Capital			
Obsidian Enterprises, Inc.		Indianapolis	www.obsidianenterprises.com	Venture Capital			
Pearl Street Venture Funds		Indianapolis	www.psvf.com	Venture Capital			Life Sciences Companies
Purdue University Trask Venture Fund		West Lafayette	www.otc.purdue.edu	Venture Capital			
Rose-Hulman Ventures (REI Ventures)		Terre Haute	www.rhventures.org	Venture Capital			
Spring Mill Venture Partners		Carmel	www.springmillvp.com	Venture Capital		Indiana and Surrounding Midwest	High Growth IT and Life Sciences
The Ellis Company	Tom Ellis	Fort Wayne	http://www.elliscompany.com	Venture Capital			
Triathlon Medical Venture		Indianapolis	www.tmvp.com	Venture Capital	Will invest up to $7 Million per Company		Biopharmaceutical, Medical Devices,
Venture Club of Indiana		Indianapolis	http://www.ventureclub.org/default.asp	Venture Capital			Dedicated to helping entrepreneurs, investors and the professional community convene to network
Village Ventures		Bloomington	www.villageventures.com	Venture Capital		North America	Business Financial Services, Media/Consumer and Healthcare/Medical

Source: Indiana Venture Resource Guide (2005); Indiana Health Industry Forum; Ball State University; Northeast Indiana Regional Partnership; Angelsoft; Pratt's Guide to Private Equity and Venture Capital Sources; National Venture Capital Association

A.7. Late-Stage Investment Firms in Indiana, October 2010

Organization	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
Bindley Capital Partners	Indianapolis	http://www.bindleycapitalpartners.com/	Private Investment			Healthcare Services, Financial Services and Distribution/Logistics
Cardinal Equity Partners	Indianapolis	http://www.cardvent.com/address.html	Private Investment	Up to $7 Million	Located in the Midwest	Niche Manufacturers, Value-added Distributors, Service Business
Centerfield Capital Partners	Indianapolis	http://www.centerfieldcapital.com/contact_us.html	Private Investment	Invests up to $15 Million	Midwest preference	Manufacturing, Business Services, Consumer Products, Healthcare Services and Transportation
Bright Path Capital, Inc.	Indianapolis	www.brightpathcapital.com	Private Investment	Equity investments of $1 to $5 Million	United States / Midwest Preference	Provide capital for organic growth, acquisitions, management buyouts or recapitalizations

Source: Indiana Health Industry Forum; Pratt's Guide to Private Equity and Venture Capital Sources

A.8. Management Buyout/Takeover Firms in Indiana, October 2010

Organization	City	Website	Service	Fund Size	Geographic Investment	Investment Specialization
E & A Industries, LLC	Indianapolis	http://www.eaindustries.com	Buyout	Business Acquisitions		Improves performance of underutilized assets, seeks long term capital through strategic business acquisitions
Ellis Capital Group	Fort Wayne	http://www.elliscompany.com	Buyout	Principal activity is business acquisition	Midwest	Acquires well established, midsized, profitable companies
Fortune Diversified Industries	Indianapolis	http://www.fdvi.net	Buyout	Committed to acquisition of profitable businesses		Focus on companies in the fields of wireless infrastructure and human resource solutions
Johnson Ventures Inc.	Columbus	http://www.johnsonventures.com	Buyout		Midwest	Invests in companies with leading positions in niche markets
Ruffolo Benson LLC	Fort Wayne	http://www.ruffolobenson.com	Buyout	Management Buyouts		Invest in transactions
Schwarz Partners LLC	Indianapolis	http://www.schwarzpartnerslp.com	Buyout	Seeks out companies for purchase or investment	Midwest and Southeastern U.S.	Seeks most creative companies , driven by innovative and determined entrepreneurs and managers

Source: Indiana Venture Resource Guide (2005)