

East Central Florida Regional Planning Council

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Orange County and the Creative Economy

*An Analysis of the Impacts of the Creative Class on
the County's Economy*

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East Central Florida

**REGIONAL
PLANNING
COUNCIL**

Economic Impact of the Creative Class

Regional Economic Analysis Program

Chapter 1 - Introduction

This report describes the theory of the creative class developed by Dr. Richard Florida, and profiles the creative class in Orange County, Florida. Dr. Florida, the author of *The Rise of the Creative Class* (2002), argues that place is the key economic and social organizing unit of our time and that creativity is the ultimate economic resource. He developed a mix of indices to use as indicators of creative ecosystems, and explains how regions and nations that have such ecosystems are likely to be the most successful in creating a competitive advantage in the future. There is no one-size-fits all strategy – there are unique assets in any location that can be optimized to create competitive advantage. Creativity has to be constantly cultivated. The solution lies in the hands of each region – in the knowledge, intelligence and creative capabilities of its people.

In this report the creative class theory is applied to Orange County. The report provides an overview of the economic classes as defined by Dr. Florida and their overall percentages in Orange County, metro Orlando, Florida and the Nation. This report describes a specific demographic segment of the population – young adults, people ages 25 to 34, who are considered the most mobile and hardworking segment of the creative class. The report shows the percentage of total County population in this group, how that percentage changed between 1990 and 2000, and how many people from this group will enter the labor force in the coming years. The report also describes the change in economic migration for this age group.

A creativity index developed by Dr. Florida will be applied to the state's largest metropolitan areas to compare to metro Orlando. This creativity index uses indicators that measure factors such as patent activity, creative occupations, and demographic diversity. Throughout this report, many aspects of the creative class will be discussed as presented by Dr. Florida.

Finally, a description is provided for the industries that employ the highest percentages of creative class workers. The report will show the employment and wage impacts these industries have on the local economy, as well as the ways in which these industries are interrelated and why that is important to Orange County.

Data sources include the 1990 and 2000 US Census of Population and Housing for demographic data, the Bureau of Labor Statistics, as well as the REMI Policy Insight model. The REMI model is a comprehensive economic analysis tool that provided most of the baseline economic data. The model also provided information about the interrelations among the industries examined in this report.

What is the creative class? According to Dr. Florida's theory, the creative class comprises people with jobs that draw on their intellect and ingenuity. The creative class encompasses a wide range of workers, including artists, writers, computer programmers, scientists, teachers, architects, musicians and more. The defining basis of this new class is economic. The creative class is connected by what they do and what they look for in a community. This class of workers increasingly is affecting the overall character of the nation's economy, and creativity is a new driving force behind economic growth.

Why is the creative class important? Old economies thrived by attracting big firms that were concerned primarily with the cost of doing business. Consequently, the key to gaining competitive advantage was to lower the cost of doing business in the local region. According to Florida's theory of the creative class, more consideration should be given to attracting talent. Attracting talent is a vital step toward building a creative economy, an economy that depends on factors Florida calls the three Ts: *technology*, *talent*, and *tolerance*. As the economies of advanced nations become increasingly information-based and knowledge-driven, the key to success is in the ability to attract and quickly mobilize talent and the resources it requires for creation.

Today, creative jobs comprise a higher percentage of total employment than ever before. This workgroup is becoming a major force behind economic growth in many regions. They are defining the creative economy, which flourishes not only by building stadiums, factories or huge retail chains, but also by establishing the proper environment and necessary technology for a talented workforce to take advantage of opportunities when they arise. This is how Dr. Florida defines the benchmarks for local areas to succeed in the creative age. The winners will be melting pots of talent and technology. They will be open and welcoming places where individuals can be themselves and where diversity and difference is not judged but welcomed. Such places will be able to retain their own creative individuals and attract more from elsewhere. By doing so, they will gain the economic advantage and edge necessary to compete in today's economy, according to Dr. Florida's theory.

According to Florida, the nation is undergoing a great economic shift, just as the one that took it from an agriculture-based to an industry-based economy. Today, the transformation is from an industrial-based economy into an information, knowledge, and creative-based one. Those who do not recognize the change will lag behind and witness their economies losing the edge they once may have had. Dr. Florida argues that while economic growth can come in many different forms, it is the quality of that growth that should be of paramount concern. Quality can be measured by examining wage and income growth as well as growth in employment numbers.

It is important to determine if jobs follow talent, or whether talent will follow the jobs. Is it true that the place with more firm headquarters and industries will be the one that sees the most regional growth, and ultimately will attract the most talent and create the highest numbers of jobs? Or is it the place that is able to attract and retain a talented workforce by providing an environment where diversity is encouraged and where creativity and innovation find the tools they need to produce, that attracts businesses which create quality jobs?

New ideas generally are subject to controversy, and the creative class theory is no exception. Although no one denies the importance of human capital for the success of companies and regions, many areas still focus solely on attracting firms to the region, while little attention is paid towards attracting talent and thus human capital. While numerous studies have been done about how companies decide where to locate, few have looked at the reasons that drive individuals to move from one place to another. However, a 2002 survey of four thousand recent college graduates published in the Wall Street Journal found that when selecting a place to live, seventy five percent of them identified location as more important than availability of a job. This means that they decided first to select where they wanted to live, and then looked for jobs in that location.

Dr. Florida's argument is that the agglomeration of talented human capital is as important a force for attracting businesses and regional development as reducing the cost of doing business. It is important to recognize that companies are attracted to places with larger concentrations of talent. This is one of the reasons that firms tend to cluster together. Clustering captures efficiencies generated by tight linkages between firms that benefit from spillovers. It also gives these firms the ability to draw from a concentration of talented human capital who are always looking for the next challenge and opportunity for innovation. Talent is increasingly moving more rapidly and horizontally across the labor market in order to accomplish these goals.

What is the goal of this analysis? This report analyzes the state of the creative economy in Orange County. It defines the occupations that make up the Creative Group, and shows the status of the young adult population (age 25 to 34) that represents the core of this group. It outlines the industries that employ the highest percentage of these occupations in Orange County and describes some of the characteristics of these industries using baseline data provided in the REMI model. Using the indices developed by Dr. Florida to rank cities, this report shows how Orange County scores.

By identifying the importance of the human capital factor in the equation of regional growth, the County can make better informed decisions about economic development strategies that will grow the County's economy most effectively.

Chapter 2 – Methodology

Dr. Florida identifies groups of occupations and separates them accordingly based on the creativity factor; that is, how much creativity they allow in the job. The first group is the *Super Creative Core*, which includes occupations that produce ideas and products that can be widely transferred and used. Second is the *Creative Professionals Group*, which includes occupations where people are engaged primarily in problem-solving, and who depend on their extensive knowledge base to achieve their goals. These two groups belong to the creative class. Florida divides the remainder of the economy into the *Service Class*, the *Working Class*, and *Agriculture*. This will be applied to Orange County in 2005, and will be compared to the economies in the Orlando MSA, State of Florida, and the nation. After that, the change in the creative class's size between 2002 and 2015 will be estimated and compared among these areas.

This report will reveal specific characteristics of the young adult group (25 to 34) that comprises the core of the creative class. This group is highly mobile and productive, so tracking their movement into and out of the county will be essential in estimating the status of the creative economy. Their percentage of the total population, and how many will be entering the labor market over time, in addition to their migration specifically due to economic reasons will be key to understanding how the creative class will grow in Orange County. Since young adults look for a specific type of living environment, indices used by Dr. Florida to measure the creative capabilities of different regions will be calculated for Orange County.

To see where these occupations mainly exist in the market, the National Industry Occupation Input-Output (I-O) Matrix (from the Bureau of Labor Statistics) will help us link the creative occupations to the industries that mostly comprise of them. Using a weighted average based on the creative occupations within each industry in the I/O matrix, all industries with an above average percentage are selected.

Once these industries are identified, the REMI policy insight was used to derive the employment and wage impacts of these industries in addition to the interrelations between them.

Chapter 3 – Analysis

What are the creative class occupations? Using the definitions outlined in the methodology section, creative occupations were defined for Orange County. Table 1 shows the occupations identified by Richard Florida as those that allow and encourage creativity the most in the workplace. They are divided into two groups – the *Super Creative Core* and the *Creative Professionals* – according to how they use their creativity and talent in order to get the job done. People who do this kind of work are

required to think and act on their own, whether it is to develop or invent a new idea or product, or to come up with a solution to a problem.

Table 1 – Creative Class Occupations	
Super Creative Core	Creative Professionals
Computer and mathematical occupations Architecture and engineering occupations Life, physical and social science occupations Education, training, and library occupations Arts, design, entertainment, sports, and media occupations	Management occupations Business and financial operations occupations Legal occupations Healthcare practitioners and technical occupations High end sales and sales management
Source: <i>The Rise of the Creative Class</i> , 2002.	

In 1999 these two groups included some 38.3 million Americans nationwide, which was approximately thirty percent of the U.S. workforce. This is not to say that these are the only creative people. What differentiates these jobs is the fact that they allow – or even require – more creativity and innovation. While virtually all human beings are creative, these people generally are paid to be creative.

According to the creative class theory, one characteristic shared by members of these groups is their high mobility. They are always looking for the next challenge. The places they prefer offer a system where all forms of creativity – cultural, technological, and economic – flourish. For places to become creative centers, they must nurture and grow the three Ts: Technology, Talent, and Tolerance. The creative capital theory says that regional growth comes from the three T's of economic development, and for a region to grow it must offer all three.

Defining the groups: Dr. Florida defines five groups of occupations in the economy:

- Creative class, which comprises
 - Super Creative Core and
 - Creative Professionals
- Service Class
- Working Class
- Agriculture

To estimate the sizes of these groups in our region, REMI baseline data was used. These data provided employment numbers by occupation through the year 2050.

According to the REMI forecast, the number of private non-farm jobs in Orange County that fall into the creative group (according to the definition developed in Chapter 2) is estimated to be 178,877 in 2005. These creative group occupations are spread among all industries.

Figure 1 Class Structure in Orange County (private non-farm jobs)

Super Creative Core	49,316
Creative Professionals	129,560
Service Group	359,376
Working Group	150,929
Agriculture	1,934

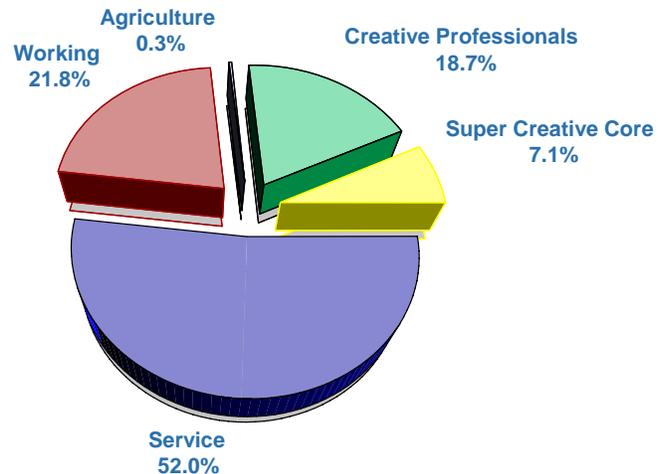


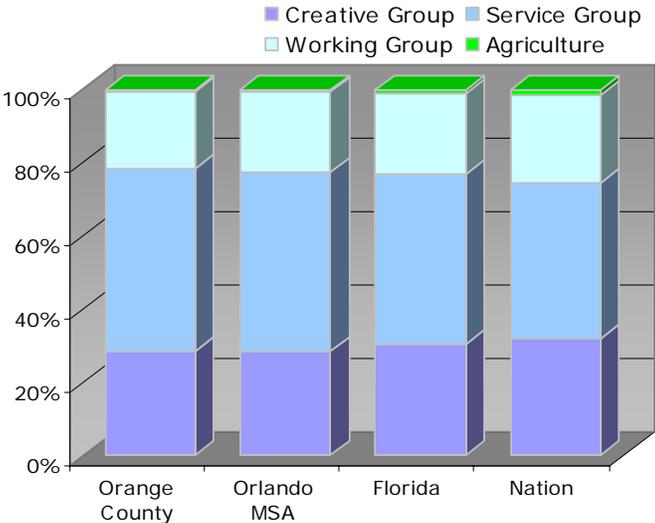
Figure 1 shows the distribution of the different sectors in Orange County in 2005. The Service Group is the largest – 52 percent of the County's jobs fall into this category. The creative class (which includes the Super Creative Core and the Creative Professionals) is second with 25.8 percent of the jobs, followed by the Working Group with 21.8 percent, and Agriculture with 0.3 percent.

Adding in the public sector and comparing the results for Orange County, the Orlando MSA, the state of Florida and the U.S. shows the following:

- Orange County matches the Orlando MSA in the creative class, while it lags the state and the nation by one and two percentage points respectively.
- Fifty percent of the jobs in Orange County qualify as Service Group, compared to approximately 43 percent in the nation.
- The Working Class Group is highest in the nation with approximately 24 percent, followed by the State of Florida and the Orlando MSA with approximately 22 percent and Orange County with approximately 21 percent.

Figure 2 compares the distribution of the sectors in the U.S., the state of Florida, the Orlando MSA and Orange County.

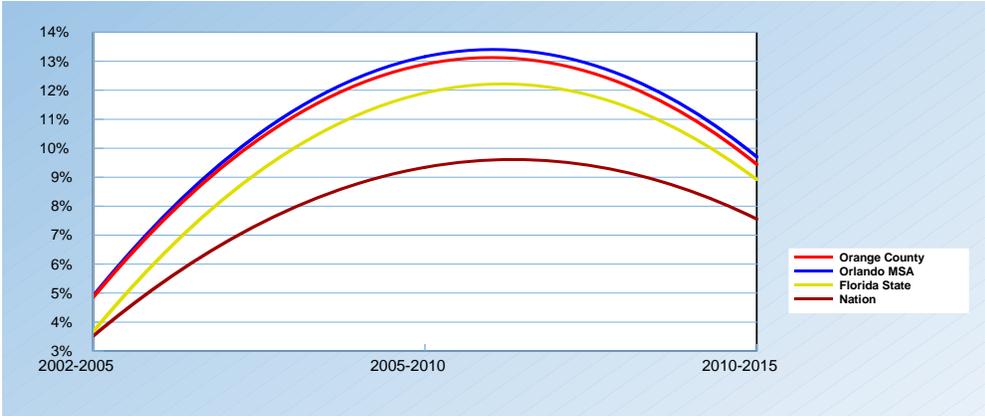
Figure 2 Economic Structure 2005



Source: REMI Policy Insight Model; East Central Florida Regional Planning Council.

The change to a creative economy is the beginning of a stage that will last long into the future, so it is important to ascertain what the County's position currently is and how it is expected to grow in the coming years. This is particularly true with respect to highly creative and knowledge-based occupations. Figure 3 shows estimated and projected growth in the creative class from 2002 to 2015. Based on REMI forecasts, growth of the creative class in Orange County and the Orlando MSA was expected to be approximately 5 percent between 2002 and 2005, while Florida and the U.S. were projected to experience approximately 3.5 percent growth. The growth will be highest between 2005 and 2010, when the Orlando MSA and Orange County will have similar growth of approximately 13 percent, while the State of Florida and the U.S. will experience growth of approximately 12 and 10 percent, respectively. From 2010 to 2015 growth in the creative class is expected to slow down somewhat, but on average metro Orlando still will experience a greater increase than either the state or nation.

Figure 3 Change in Creative Group 2002-2015



Source: REMI Policy Insight, East Central Florida Regional Planning Council.

Young Adult Population: The economic importance of talented people is driving regions to compete to attract them. An important segment of the population with unique characteristics is young adults (people ages 25 to 34). At this age, young adults are at the peak of their mobility and ambition. They can be a major force behind economic growth in any region. Because this group is a major participant in the creative class, their movement to and from a region can indicate how successfully that region is attracting the creative class and how it is poised to compete in the future.

Table 2 shows change in the young adult population between 1990 and 2000 in the four counties of the Orlando MSA, as well as in Florida. The highest percentage increase in this group was in Osceola County, which experienced a 36.6 percent increase. Although Orange County added roughly ten thousand young adults between 1990 and 2000, this represented only 6 percent of its young adult population. The Orlando MSA's young adult population increased by about 8 percent overall. As a percent of total population, however, young adults declined in all four counties as well as the State, as is shown in the last two columns of the table.

County/ MSA/State	Total Population		Total Young Adult Population		% Change in Young Adults 1990 - 2000	Young Adults as % of Total Population	
	1990	2000	1990	2000		1990	2000
Lake	152,104	210,528	18,617	21,414	15.0%	12.2%	10.2%
Orange	677,491	896,344	138,841	147,518	6.2%	20.5%	16.5%
Osceola	107,728	172,493	18,301	25,007	36.6%	17.0%	14.5%
Seminole	287,529	365,196	52,586	52,367	-0.4%	18.3%	14.3%
Orlando MSA	1,224,852	1,644,561	228,345	246,306	7.9%	18.6%	15.0%
Florida	12,937,926	15,982,378	2,117,386	2,063,668	-2.5%	16.4%	12.9%

*In this table, young adults are people ages 25 to 34.
Source: US Census, 1990 and 2000.

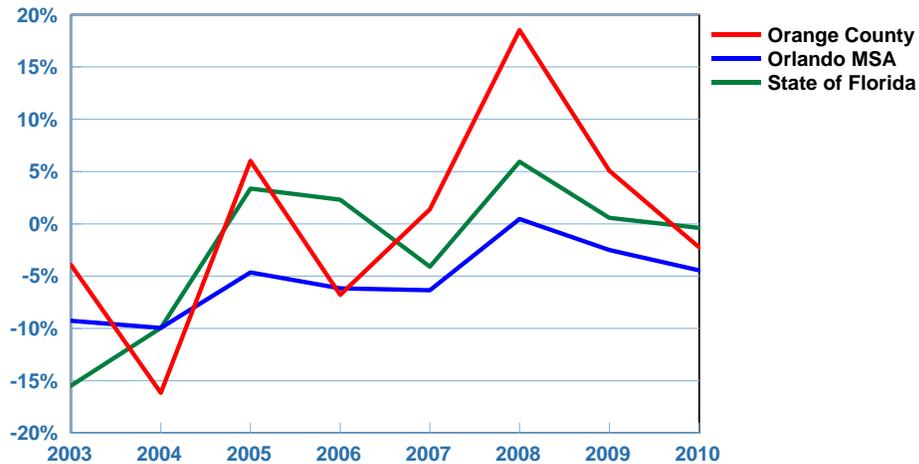
The labor force is calculated from the population according to age, gender and racial cohort, and the participation rate. While Table 2 showed the change in young adult population, Table 3 shows the number of young adults who are part of the labor force. This includes anyone who has a job or is seeking employment. Orange County, the Orlando MSA and the State of Florida are expected to experience a decrease in the number of people of ages 25 to 29 between 2002 and 2005, and a corresponding increase in the number of people between 30 and 35 years of age. In all three areas between 2010 and 2015, the labor force will experience a significant increase in the number of participants who are between 25 and 29 years old.

Table 3 Labor Force by Age Group				
Orange County	2002	2005	2010	2015
Ages 25-29	66,507	61,556	61,160	76,431
		-7.4%	-0.6%	25.0%
Ages 30-34	63,017	67,179	64,301	63,111
		6.6%	-4.3%	-1.9%
Orlando MSA	2002	2005	2010	2015
Ages 25-29	110,660	105,939	118,499	145,563
		-4.3%	11.9%	22.8%
Ages 30-34	105,211	113,657	114,63	124,824
		8.0%	0.9%	8.9%
Florida	2002	2005	2010	2015
Ages 25-29	809,617	755,697	922,326	1,184,400
		-6.7%	22.0%	28.4%
Ages 30-34	804,130	832,514	825,810	982,221
		3.5%	-0.8%	18.9%

Source: US Census, 1990 and 2000.

Economic Migration: Economic migration (movement of people to an area because of perceived economic opportunity) is affected by the overall economic and amenity value of a certain area, such as the relative wage rates and the relative employment opportunity. People between the ages of 25 and 34 tend to move the most, especially when looking for a place that meets their expectations for opportunity and quality of life. Figure 4 shows the change in economic migration for Orange County, the Orlando MSA, and the State of Florida. Based on REMI forecasts, the number of economic migrants will vary significantly in the coming years. The percentage change was expected to decrease by as much as 16 percent in Orange County between 2003 and 2004, and then increase by as much as 18 percent between 2007 and 2008. As the graph shows, the changes are widely volatile across the three areas.

Figure 4 Change in Economic Migration for the Young Adult Population



Source: REMI Policy Insight, East Central Florida Regional Planning Council.

The Creativity Index: The creative class theory posits that young adults and people with creative occupations look for specific features in the place they want to live. As a result, Dr. Florida developed a new measure called the *Creativity Index*, which measures an area's underlying creative capabilities. It is an indicator of where an area stands in the creative economy. This index is a composite of three equally weighted parts: Technology, Talent, and Tolerance. For Technology, the *Tech Pole Index* and the ranking of average annual patent growth from 1990 to 1999 are used. For Talent, the number of creative occupations is used. The Tolerance measure includes indices such as a *Gay Index*, a *Melting Pot Index* (foreign-born population as a percent of total population), a *Bohemian Index*, and a *Racial Integration Index*. Table 4 compares metro Orlando's rankings in these indices with other metro areas in the state of Florida.

Metropolitan Area	Rankings					
	Creativity Index rank	Creativity Index	Technology Rank	Talent Rank	Tolerance Rank	Wage Inequality Rank
West Palm Beach - Boca Raton	43	0.740	72	97	48	16
Tampa- St. Petersburg	51	0.704	73	124	51	26
Miami	72	0.636	119	143	40	48
Orlando	77	0.633	138	138	30	33
Jacksonville	143	0.498	224	107	88	24

Source: *The Rise of the Creative Class*, 2002.

Industries that rely on creative occupations: In this section, industries with above average reliance on creative occupations will be identified, and their employment and wage impacts will be calculated using the REMI model. The REMI baseline forecast will be used to identify whether these sectors satisfy local demand and supply for their goods and services. In addition, using a Location Quotient calculator provided by the Bureau of Labor Statistics, the LQ of each of these industries will be calculated.

Employment: The presence and strength of a certain sector in the economy and its interaction with other industries have both direct and indirect economic impacts. When looking at employment, the direct impact would be the number of people directly employed by that industry. Indirect impacts are the sum of *intermediate* and *induced* impacts. *Intermediate* impacts result from the purchase of intermediate goods needed to produce the final products. *Induced* impacts result from the re-spending of wages.

Because different industries can use the same or similar intermediate goods, manufactured by the same sector, the intermediate and induced employment numbers in columns 2 and 3 in Table 5 can be common to more than one industry. This means the same intermediate job that is supported by the computer manufacturing industry

also can be supported by another industry, such as *Internet Service and Data Processing*. As a result, there can be an overlap in counting these jobs among the different industries that are examined in this report.

The REMI model was used to estimate the indirect employment associated with these industries. Indirect jobs are created as a result of induced and intermediate impacts. They are the jobs created in sectors that are connected to the main industry but not directly a part of it.

In Table 5, the employment number tied to each industry is divided into the three impact categories. The employment number in the first column is the direct number of jobs supported by each industry.

Table 5 Employment Impacts by Industry – Orange County			
Employment Impacts	Impact Category		
	Direct	Intermediate	Induced
Computer and electronic product manufacturing	3,948	7,356	2,887
Publishing, except Internet	3,719	2,639	1,480
Motion picture and sound recording	1,900	1,643	622
Internet svce providers, web search portals, data processing svcs	4,092	2,348	1,428
Broadcasting, except Internet; Telecommunications	8,892	9,171	4,123
Professional, scientific and technical services	13,340	7,051	4,045
Management of companies and enterprises	49,500	20,100	15,150
Educational services	6,731	4,428	2,862
Ambulatory health care services	8,693	1,675	1,248
Hospitals	25,530	8,936	6,831
Nursing; Residential Care Facilities	8,267	1,269	1,161
Performing arts, spectator sports, and related industries	5,819	1,972	903
Source: REMI Policy Insight Model, East Central Florida Regional Planning Council.			

Wages: Table 6 shows the overall average annual wage in Orange County, as well as the average annual wage for the specified industries. Table 7 shows the difference between the average wages for each of the industries and the overall average wage in the County in 3 different years.

As shown in the tables, more than 80 percent of the industries in this study have above-average wages, including seven with average wages that are more than 1.5 times the average annual wage in Orange County.

Table 6 Average Annual Wage			
Industry	2002	2005	2010
Orange County average for all occupations	\$28,567	\$31,182	\$38,061
Computer and electronic product manufacturing	\$61,893	\$67,592	\$82,870
Publishing, except Internet	\$49,575	\$54,140	\$66,378
Motion picture and sound recording	\$29,641	\$32,371	\$39,688
Internet service providers, web search portals, data processing svcs	\$49,258	\$53,794	\$65,953
Broadcasting, except Internet; Telecommunications	\$42,226	\$46,114	\$56,538
Insurance carriers and related activities	\$38,762	\$42,331	\$51,899
Professional, scientific and technical services	\$45,091	\$49,243	\$60,373
Management of companies and enterprises	\$60,641	\$66,225	\$81,194
Educational services	\$26,089	\$28,491	\$34,932
Ambulatory health care services	\$43,221	\$47,201	\$57,870
Hospitals	\$36,988	\$40,394	\$49,524

Source: Florida Agency for Workforce Innovation Labor Market Statistics (LMS): www.labormarketinfo.com.

Table 7 Deviation From County Average			
Industry	2002	2005	2010
Computer and electronic product manufacturing	117%	137%	190%
Publishing, except Internet	74%	90%	132%
Motion picture and sound recording	4%	13%	39%
Internet service providers, web search portals, data processing services	72%	88%	131%
Broadcasting, except Internet; Telecommunications	48%	61%	98%
Insurance carriers and related activities	36%	48%	82%
Professional, scientific and technical services	58%	72%	111%
Management of companies and enterprises	112%	132%	184%
Educational services	-9%	0%	22%
Ambulatory health care services	51%	65%	103%
Hospitals	29%	41%	73%

Source: Florida Agency for Workforce Innovation Labor Market Statistics (LMS): www.labormarketinfo.com, East Central Florida Regional Planning Council.

Labor income has indirect and induced effects just as employment. Table 8 shows the indirect and induced effects of the total wage income of each of the industries.

Industry	2005 Average Annual Wage	Total Employment	In Thousands		
			Direct Wage Impact	Indirect & Induced Wage Impacts	Total Wage Impacts
Computer and electronic product manufacturing	\$67,592	3,948	\$266,853	\$507,547	\$774,400
Publishing, except Internet	\$54,140	3,719	\$201,347	\$194,153	\$395,500
Motion picture and sound recording	\$32,371	2,003	\$64,839	\$86,761	\$151,600
Internet service providers, web search portals, data processing services	\$53,794	4,092	\$220,125	\$145,575	\$365,700
Broadcasting, except Internet; Telecommunications	\$46,114	8,892	\$410,046	\$610,954	\$1,021,000
Insurance carriers and related activities	\$42,331	13,366	\$565,796	\$492,204	\$1,058,000
Professional, scientific and technical services	\$49,243	49,494	\$2,437,233	\$1,350,767	\$3,788,000
Management of companies and enterprises	\$66,225	6,731	\$445,760	\$305,640	\$751,400
Educational services	\$28,491	8,693	\$247,672	\$125,428	\$373,100
Ambulatory health care services	\$47,201	25,532	\$1,205,136	\$635,864	\$1,841,000
Hospitals	\$40,394	21,229	\$857,524	\$480,476	\$1,338,000
Performing arts, spectator sports, and related industries	\$17,868	5,819	\$103,974	\$107,626	\$211,600

Source: REMI Policy Insight Model, East Central Florida Regional Planning Council.

Location Quotient: Location quotients (LQs) can be used as a tool to measure regional specialization and strength in a given sector. They are a measure familiar to regional labor economists as a way to readily compare the industrial activity levels among different areas. LQs are ratios of employment shares by industry. In this case the LQ is equal to the ratio of employment in Industry X in Orange County to the total employment in Orange County, divided by the ratio of employment in Industry X in the nation to the total employment in the nation. A location quotient above 1 usually is an indication that the industry is export-oriented. The new BLS (Bureau of Labor Statistics) location quotient calculator was used in this report. It uses a timely data source that is especially rich in comprehensive industry and area detail – BLS's Quarterly Census of Employment and Wages (QCEW).

For example, suppose a local economy has 5 percent of its workforce in computer manufacturing, and the national economy has only 0.05 percent of its workforce in computer manufacturing. The location quotient technique assumes that the local economy would have that same percentage of its workers in the computer manufacturing industry as the national percentage to serve its local needs for computers. Any employment over and above the expected percentage (in this case 0.05 percent) is therefore assumed to be a basic sector that exports their goods and services to non-local areas. If the percentages had been identical or if the local percentage had

been less than the reference percentage, then the local area is not satisfying its local demand and may need to import the subject goods or services.

Interpreting the Location Quotient is simple. Only three general outcomes are possible when calculating location quotients. These outcomes are as follows:

$LQ < 1.0$ $LQ = 1.0$ $LQ > 1.0$

An LQ that is less than 1 for a given industry suggests that local employment is less than was expected for that industry. Therefore, that industry is not meeting local demand for a given good or service.

An LQ that is equal to one suggests that the local employment is exactly sufficient to meet the local demand for a given good or service.

An LQ that is greater than one provides evidence of extra employment for a given industry. When an $LQ > 1.0$, it means that local employment is greater than expected and it is therefore assumed that this "extra" employment may export their goods and services to non-local areas.

Table 9 compares the location quotients in the Orlando MSA for selected creative industries. Orange County has LQs greater than 1 in certain major technology-related industries such as *telecommunications*, *internet service providers*, *web search portals*, and *data processing services*. These LQs suggest that Orange County provides neighboring counties and regions with some of the services produced by these sectors within the County. For *professional and technical services*, and for *management of companies*, Orange County has the highest LQs among the four metro area counties.

Industry	U.S.	Orange	Lake	Osceola	Seminole
Base Industry: Total, all industries		1	1	1	1
NAICS 334 Computer and electronic product manufacturing		0.43	0.25	0.21	1.18
Percent of Total Industries	1.26%	0.54%	0.31%	0.27%	1.49%
NAICS 511 Publishing industries, except Internet		0.73	0.71	0.18	1.49
Percent of Total Industries	0.87%	0.63%	0.62%	0.16%	1.30%
NAICS 512 Motion picture and sound recording industries		0.99	0.43	0.15	0.45
Percent of Total Industries	0.34%	0.34%	0.15%	0.05%	0.16%
NAICS 515 Broadcasting, except Internet		0.97	ND	ND	0.14
Percent of Total Industries	0.30%	0.29%	ND	ND	0.04%
NAICS 516 Internet publishing and broadcasting		0.22	ND	NC	ND
Percent of Total Industries	0.03%	0.01%	ND	NC	ND
NAICS 517 Telecommunications		1.08	1.36	0.27	2.73
Percent of Total Industries	1.01%	1.09%	1.37%	0.27%	2.75%
NAICS 518 ISPs, search portals, and data processing		1.55	0.02	ND	1.97
Percent of Total Industries	0.38%	0.58%	0.01%	ND	0.74%
NAICS 519 Other information services		0.43	ND	NC	ND
Percent of Total Industries	0.04%	0.02%	ND	NC	ND
NAICS 54 Professional and technical services		1.12	0.72	0.46	0.97
Percent of Total Industries	6.20%	6.97%	4.46%	2.85%	6.01%
NAICS 55 Management of companies and enterprises		1.09	0.53	0.98	0.39
Percent of Total Industries	1.55%	1.69%	0.82%	1.51%	0.61%
NAICS 61 Educational services		0.72	0.63	0.29	0.73
Percent of Total Industries	1.88%	1.36%	1.19%	0.55%	1.37%
NAICS 621 Ambulatory health care services		0.79	1.35	0.82	0.84
Percent of Total Industries	4.47%	3.55%	6.03%	3.65%	3.76%
NAICS 622 Hospitals		0.84	1.4	1.28	0.59
Percent of Total Industries	3.92%	3.29%	5.51%	5.03%	2.33%
NAICS 623 Nursing and residential care facilities		0.6	1.59	1.03	1.15
Percent of Total Industries	2.59%	1.54%	4.13%	2.66%	2.97%
NAICS 711 Performing arts and spectator sports		0.97	ND	2.08	ND
Percent of Total Industries	0.36%	0.35%	ND	0.74%	ND
ND: Not disc losable. NC: Not calculable. Data does not exist or is zero. Source: REMI Policy Insight Model, East Central Florida Regional Planning Council.					

Industry Trade Flows: In the new economic geography it is not enough to look at a city's or county's economy without taking into consideration their surrounding areas. To better understand how the economy is working, it is necessary to examine how

different sectors and industries interact with one another; that is, what each industry demands and supplies to the other industries and where this supply comes from.

Tables 10 and 11 show total demand and output by industry in Orange County, and these numbers show how Orange County interacts with its surroundings to satisfy its demand and market its production from these industries. For example, in the *computer and electronic product manufacturing* industry, Orange County's total demand was approximately \$4.8 billion and total output was approximately \$2.8 billion. The County supplies about \$650,000 of its total demand, while the remainder is provided by the rest of the nation and the world. So although the County produces about \$2.8 billion in that sector and there is enough demand in the county to absorb this production, most of that production is exported to the rest of the nation and the world.

Table 10 Demand by Industry						
(Thousands)	Orange (self-supply)	Rest of Region*	Rest of Florida	Rest of Nation	Rest of World	Total Demand
Computer and electronic product manufacturing	\$651,970	\$468,901	\$221,514	\$1,512,500	\$1,959,500	\$4,814,400
	13.5%	9.7%	4.6%	31.4%	40.7%	
Publishing, except Internet	\$636,950	\$118,953	\$15,419	\$216,780	\$22,988	\$1,011,100
	63.0%	11.8%	1.5%	21.4%	2.3%	
Motion picture and sound recording	\$257,950	\$9,057	\$4,649	\$93,101	\$6,326	\$371,080
	69.5%	2.4%	1.3%	25.1%	1.7%	
Internet service providers, web search portals, data processing services	\$516,960	\$6,735	\$13,625	\$9,181	\$7,250	\$553,750
	93.4%	1.2%	2.5%	1.7%	1.3%	
Broadcasting, except Internet; Telecommunications	\$1,296,400	\$265,159	\$275,827	\$444,450	\$73,609	\$2,355,500
	55.0%	11.3%	11.7%	18.9%	3.1%	
Insurance carriers and related activities	\$853,300	\$113,412	\$190,678	\$328,470	\$14,931	\$1,500,800
	56.9%	7.6%	12.7%	21.9%	1.0%	
Professional, scientific and technical services	\$3,666,900	\$157,445	\$73,790	\$119,790	\$54,506	\$4,072,400
	90.0%	3.9%	1.8%	2.9%	1.3%	
Management of companies and enterprises	\$1,500,900	\$94,858	\$110,720	\$414,180	\$387	\$2,121,000
	70.8%	4.5%	5.2%	19.5%	0.0%	
Educational services	\$221,670	\$35,968	\$21,034	\$121,350	\$855	\$400,870
	55.3%	9.0%	5.2%	30.3%	0.2%	
Ambulatory health care services	\$1,494,500	\$31,204	\$6,986	\$243	\$90	\$1,533,000
	97.5%	2.0%	0.5%	0.0%	0.0%	
Hospitals	\$1,046,600	\$12,968	\$3,143	\$4,321	\$106	\$1,067,100
	98.1%	1.2%	0.3%	0.4%	0.0%	
Performing arts, spectator sports, and related industries	\$215,380	\$30,356	\$21,238	\$3,574	\$2,367	\$272,920
	78.9%	11.1%	7.8%	1.3%	0.9%	
*Region: Pasco, Pinellas, Manatee, Hillsborough, Hernando, Polk, Sarasota, Brevard, Lake, Osceola, Seminole, Volusia.						
Source: REMI Policy Insight Model, East Central Florida Regional Planning Council.						

(Thousands)	Orange	Rest of Region*	Rest of Florida	Rest of Nation	Rest of World	Output
Computer and electronic product manufacturing	\$651,970	\$400,265	\$251,440	\$866,550	\$709,940	\$2,880,200
	22.6%	13.9%	8.7%	30.1%	24.6%	
Publishing, except Internet	\$636,950	\$122,909	\$31,555	\$18,739	\$27,962	\$838,120
	76.0%	14.7%	3.8%	2.2%	3.3%	
Motion picture and sound recording	\$257,950	\$49,164	\$7,390	\$6,211	\$31,281	\$352,000
	73.3%	14.0%	2.1%	1.8%	8.9%	
Internet service providers, web search portals, data processing services	\$516,960	\$116,495	\$10,644	\$11,578	\$7,505	\$663,180
	78.0%	17.6%	1.6%	1.7%	1.1%	
Broadcasting, except Internet; Telecommunications	\$1,296,400	\$461,218	\$193,130	\$548,540	\$36,881	\$2,536,200
	51.1%	18.2%	7.6%	21.6%	1.5%	
Insurance carriers and related activities	\$853,300	\$314,765	\$158,290	\$355,610	\$7,593	\$1,689,600
	50.5%	18.6%	9.4%	21.0%	0.4%	
Professional, scientific and technical services	\$3,666,900	\$958,148	\$238,570	\$266,690	\$146,120	\$5,276,400
	69.5%	18.2%	4.5%	5.1%	2.8%	
Management of companies and enterprises	\$1,500,900	\$283,651	\$39,264	\$36,498	\$751	\$1,861,000
	80.7%	15.2%	2.1%	2.0%	0.0%	
Educational services	\$221,670	\$92,053	\$34,148	\$44,533	\$2,041	\$394,440
	56.2%	23.3%	8.7%	11.3%	0.5%	
Ambulatory health care services	\$1,494,500	\$410,826	\$102,070	\$557,040	\$311	\$2,564,700
	58.3%	16.0%	4.0%	21.7%	0.0%	
Hospitals	\$1,046,600	\$458,555	\$203,830	\$37,428	\$282	\$1,746,600
	59.9%	26.3%	11.7%	2.1%	0.0%	
Performing arts, spectator sports, and related industries	\$215,380	\$22,228	\$3,475	\$13,647	\$2,369	\$257,100
	83.8%	8.6%	1.4%	5.3%	0.9%	
*Region: Pasco, Pinellas, Manatee, Hillsborough, Hernando, Polk, Sarasota, Brevard, Lake, Osceola, Seminole, Volusia.						
Source: REMI Policy Insight Model, East Central Florida Regional Planning Council.						

These global relationships exist for many of Orange County's industries, particularly those in which creative workers can be found. If Dr. Florida is correct, as the boundaries between regions blur, the attraction of workers to a place will be an increasingly important determining factor in its ability to attract companies and succeed economically into the next century.

Chapter 4 - Conclusions

The numbers above are an example of how today's economy operates. Boundaries and space have become less of an obstacle. Everything can be accessed fairly easily. Talent, resources, and capabilities all can be quickly mobilized. This creates many opportunities for markets with limited resources, but at the same time poses a competitive challenge for local industries and businesses. Opportunities can be taken advantage of by anyone

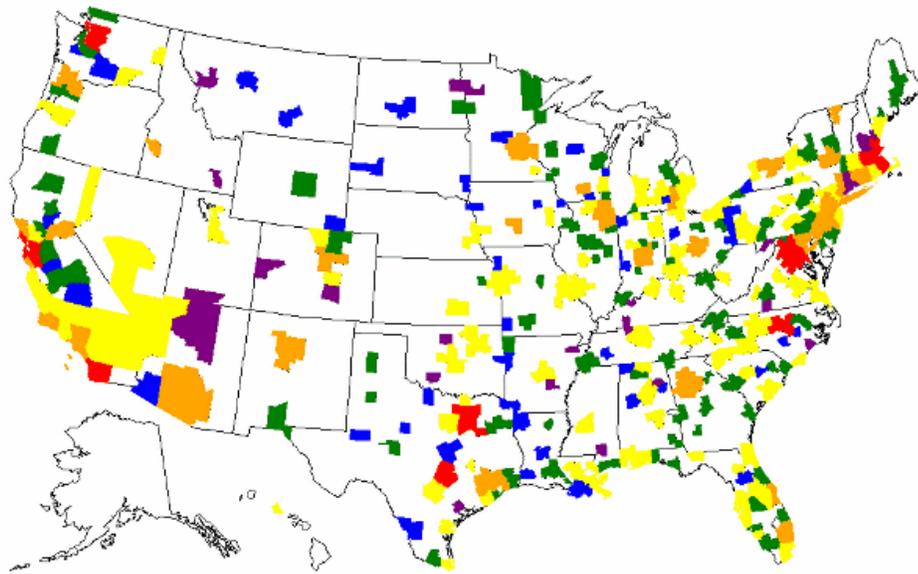
that can create an edge. Today this edge depends greatly on creativity, talent, and knowledge; in other words it depends on human capital.

To attract a creative workforce, a place has to satisfy this workforce's demands. Some theories suggest that places attract people by matching them to jobs and economic opportunities. More recent theories suggest that places attract people by providing a range of lifestyle amenities. The latter is particularly true for the highly educated, talented, and economically powerful individuals who look for these amenities when choosing the location where they want to live. The United States has thrived thus far by acting systematically to become the world's leading Creative Economy. It did that by investing heavily in research and development, and having a strong university system as well as being open to attract the world's best and most creative minds. Our economy is undergoing a stage of restructuring and our attention and investment should be geared towards the creative capital. Development efforts should be directed to support the underlying conditions for creativity, innovation, and entrepreneurship. More investment should go towards improving the quality of life that attracts creative workers. According to Dr. Florida, the key element of global competition is on one hand to harness the creative energy of a country's domestic population, and on the other hand, to attract creative people from around the world.

In accordance with Dr. Florida's theories, the three Ts of economic development are technology, talent and tolerance. The highly productive creative class has demonstrated its horizontal mobility through agglomerating in certain regions. The ability to attract and/or further develop a region into a creative center will depend on the area's ability to satisfy the many attributes valued by the creative class cohort.

Appendix A

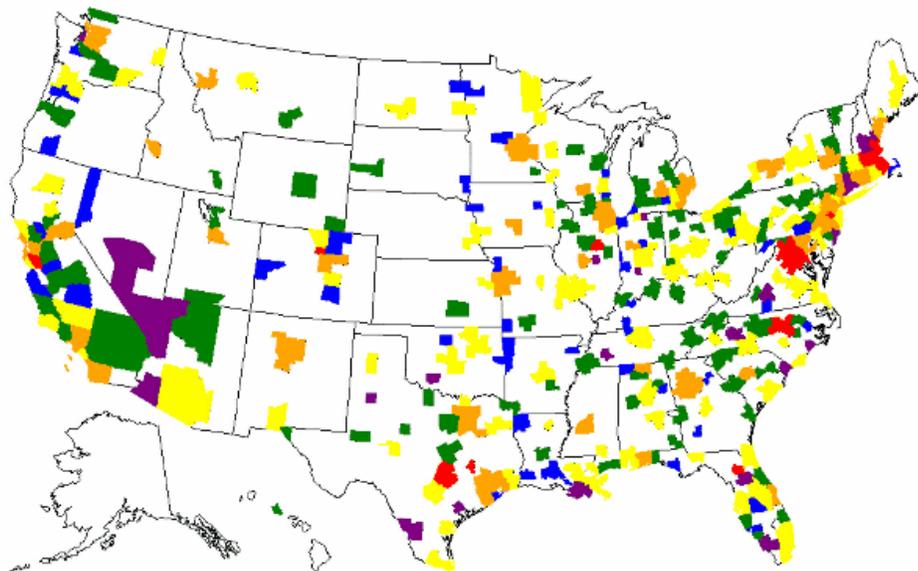
Orange County	2005
Management, business, finance occupations	70,099
Legal occupations	5,597
Healthcare occupations	46,468
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	9,963
Other sales and related workers	11,172
Creative Professionals	143,299
Computer, mathematical, architecture, and engineering occupations	29,082
Life, physical, social scientific occupations	5,054
Education, training, and library occupations	27,858
Arts, design, entertainment, sports, and media occupations	11,468
Super Creative	73,462
Community, and social services occupations	7,978
Protective service occupations	19,326
Food preparation, and food service related occupations	73,382
Building, grounds cleaning and maintenance, personal care, and service occupations	86,303
Supervisors, sales workers	8,934
Retail sales workers	47,266
Sales representatives, services	5,096
Supervisors, office and administrative support occupations	8,111
Communications equipment operators	1,963
Financial clerks	20,125
Information and record clerks	35,967
Material recording, scheduling, and distributing occupations	18,193
Secretaries and administrative assistants	22,137
Other office and administrative sup	27,619
Service	382,400
Construction, extraction occupations	33,083
Install, maintenance, and repair occupations	33,547
Production occupations	36,485
Transportation, material moving occupations	54,473
Working	157,588
Farm, fish, forestry occupations	4,566
Agriculture	4,566
Source: Florida Agency for Workforce Innovation Labor Market Statistics (LMS): www.labormarketinfo.com.	



Rank out of 332 Regions
Based on Creativity Index

■ 1 - 10	■ 51 - 150	■ 251 - 300
■ 11 - 50	■ 151 - 250	■ Below 300

Explanation: Overall measure of creative strength and potential, based on a mix of Creative Class percentage, High-tech Index, Innovation Index and Gay Index.



Rank out of 332 Regions
Based on Percent of Workforce
in Creative Class

■ 1 - 10	■ 51 - 150	■ 251 - 300
■ 11 - 50	■ 151 - 250	■ Below 300

Source: *The Rise of the Creative Class*, 2002.