03

Target Industry Profiles

About the Profiles

The Target Industry Profiles on the following pages provide a detailed description of each target industry and its niche sectors. This information will help Northeast Florida stakeholders better understand the dynamics and business needs of each industry. In turn, regional stakeholders will be better informed to make strategic investments in the region that will encourage industry growth.

Each profile begins with an Industry Overview describing the nature of the industry, including employment trends and the factors that influence location and growth of the industry. The profiles also include:

- concise review of the industry's performance in the region in recent years;
- brief overview of the global forces affecting industry dynamics;
- criptions of each niche sector and the opportunity they present for Northeast Florida;
- ccupational needs of the industry;
- comparison of the target industry's location quotient and growth in Northeast Florida against benchmark regions; and
- cific regional strengths for the industry that can be incorporated into sales and marketing materials.

Each profile concludes with a one-page "game plan" for reference when crafting industry-specific approaches to marketing. The game plans provide a suggested approach to growing the industry (business attraction, existing business expansion, local business startup), sample metrics for monitoring progress, a summary marketing mix illustrating the balance of techniques needed for industry outreach, target geographies for outreach, and suggested activities to enhance the region's competitiveness for the industry.

Profiles are designed to serve as stand-alone mini-reports. An economic developer approaching Advanced Manufacturing companies, for example, could be handed the Advanced Manufacturing profile without the rest of this report and have the insight needed to meet with a prospect in the industry. Similarly, local executives could receive the profile related to their industry and have a complete list of sales messages to use when speaking about the region with their peers.

More detailed marketing and business development recommendations will be provided in Report 4: Marketing and Strategic Plan. In addition, Report 3: Workforce Development Assessment contains more in-depth analysis of target industry skills needs.

Advanced Manufacturing Overview

INDUSTRY OVERVIEW

Advanced Manufacturing is the transformation of raw materials into components and finished products using complex machinery. Advanced Manufacturing is among the country's most heavily recruited industries. It is a major source of capital investment and construction and typically pays above average wages. Advanced Manufacturing also boasts the greatest job multiplier effect of any industry.

Advanced Manufacturing employment contracted during the recession, but the industry has rebounded in the years since. Today, the industry employs nearly 12.5 million workers in the United States and is predicted to increase by 3.5 million over the next seven to eight years, according to a study from Deloitte and the National Association of Manufacturers (NAM). The growing demand for skilled workers among many domestic manufacturers has helped the industry sustain relatively high wages.

Advanced Manufacturing operations have **specific infrastructure and workforce needs**. Locations with a skilled, low-cost workforce that are also accessible to customers, suppliers and raw materials are critical in the face of growing global competition. More specifically, Advanced Manufacturing requires plentiful, affordable energy supplies. Some niche sectors require sizable water and wastewater capacity. Businesses often prefer sites with close proximity to an interstate, seaport, cargo airport, and/or rail line. Logistics infrastructure is often a top site selection factor. Because they are in high-demand, large-scale Advanced Manufacturing operations tend to pursue incentive packages when exploring new locations.

REGIONAL PERFORMANCE

Advanced Manufacturing employment in Northeast Florida totals nearly 17,600 and is approximately half as concentrated regionally relative to the US average. In recent years, the industry has experienced modest growth within Northeast Florida. Between 2012 and 2017, total Advanced Manufacturing employment in the region rose by more than 9% (compared to 12% growth statewide, indicating that the state has a favorable business climate for manufacturing operations). Nationally, Advanced Manufacturing employment increased less than 4% during this period.

GLOBAL FORCES

Beginning in the 1970s, domestic manufacturing employment began to decline in the wake of offshoring to lower cost environments. Recently, however, **US manufacturing employment has enjoyed a resurgence** with domestic production becoming more globally competitive as **increased automation** and the continued **adoption of robotics** have helped make US manufacturers among the world's most productive. Stagnant wages at home and **rising foreign labor costs** have also increased the cost competitiveness of US workers. At the same time, **declining energy prices** have lowered the cost of US production and transportation. US manufacturers also benefit from growing concerns about **lax intellectual property protection overseas**. The growing tide of protectionism and the threat of a global trade war, however, could present obstacles to the export-intensive industry.

Advanced Manufacturing Niche Sectors

Aircraft & Aviation Components – Aircraft & Aviation Components includes activities such as the development and production of aircraft, unmanned aerial vehicles (UAV), space vehicles, and component parts. During the past decade, the overall Aircraft & Aviation Components niche sector has enjoyed employment gains in recent years thanks to the sustained growth of international air travel demand. Additionally, the UAV market is projected to experience continued growth as it matures beyond its military origins into more commercial applications. Similarly, space exploration, once dominated by government involvement, is increasingly driven by private investment.

Maintenance & Repair Operations (MROs) – MROs are centralized, regional facilities that service aircraft fleets. MROs include both airline-operated facilities as well as those performed by independent contractors. With many major airports facing significant congestion, smaller facilities can compete by offering abundant capacity and lower costs. MRO spending is projected to remain healthy in the years ahead. Stable fuel prices have limited plane retirements, a dynamic that sustains spending on older aircrafts. Sustained profitability among domestic airlines has also contributed to increased spending on fleetwide interior renovations such as lie-flat seats, more luxurious premium economy sections, and denser seating arrangements.

Clean Energy Products – The Clean Energy Products niche sector includes firms involved in the research, development, and manufacturing of equipment used to convert, transport, and process renewable and carbon-based energy sources into useable fuels and electricity. An increased emphasis on efficiency has helped fuel innovations in motors and generators. Battery and turbine manufacturing continue to benefit from a diversification in domestic energy production. Solar energy production continues to rise, though recently imposed tariffs have injected uncertainty into the sector.

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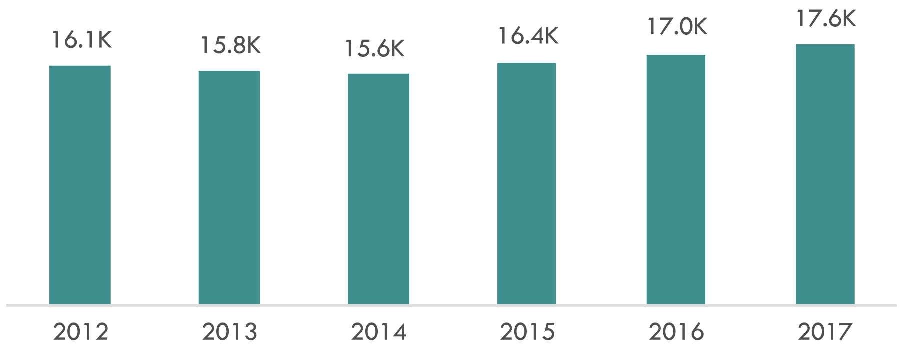
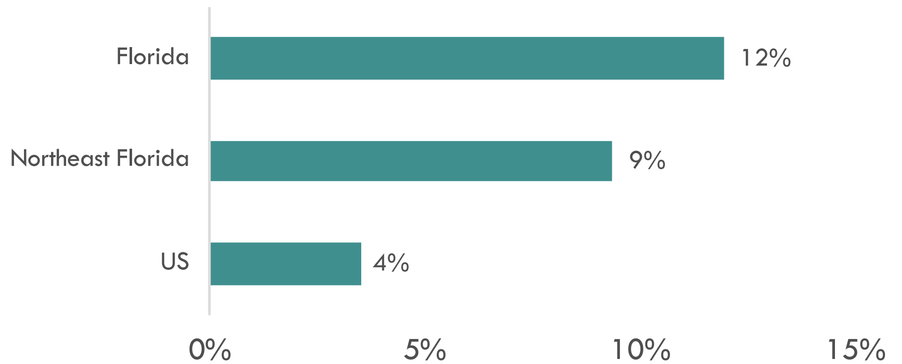
ADVANCED MANUFACTURING
NORTHEAST FLORIDA EMPLOYMENT



SOURCE: EMSI / Avalanche Consulting

ADVANCED MANUFACTURING
EMPLOYMENT GROWTH, 2012 – 2017



SOURCE: EMSI / Avalanche Consulting

Advanced Manufacturing Niche Sectors

(*Clean Energy Products continued*)

Abundant supply, combined with federal policy changes and expanded infrastructure, have contributed to a boon in US liquefied natural gas (LNG) activity. In 2017, LNG exports tripled. Northeast Florida is a hub of LNG production and utilization.

Metal Products & Machinery – Firms in the Metal Products Manufacturing niche sector use processes such as forging, stamping, bending, welding, and assembling to transform manufactured metal into intermediate and end-use products. The sector is a supplier to a diverse array of industries from transportation equipment and machinery to ammunition and cutlery. As these customers have grown since the depths the recession, so too have the fortunes of Metal Products Manufacturing businesses.

The Machinery Manufacturing niche sector involves the production of large-equipment used in many industrial and commercial sectors such as agriculture, metalworking, power transmission, and printing. Due to the complexity of Industrial Machinery products, the industry is highly innovative. Machinery Manufacturing operations often integrate skilled workers with automated assembly methods. Sustained business expenditures on machinery and equipment will boost the economies in which they are located.

Defense Technologies – Defense Technologies involves the development and manufacture of military hardware and equipment, including weapons, munitions, trucks, tanks, aircraft, and other technological equipment. The primary customers for domestic Defense Technologies firms include the US military and the governments of foreign allies. After years of flat Defense spending, expenditures on Defense Technologies are expected to rise thanks to a $94 billion budget increase for the Pentagon as well as increased military investments by US allies such as NATO countries, Japan, and Saudi Arabia.

ADVANCED MANUFACTURING AVERAGE SALARY, 2017

SOURCE: EMSI / Avalanche Consulting

Advanced Manufacturing Workforce

Advanced Manufacturing requires a diverse set of occupations, including production workers, material movers, mechanics, engineers, supervisors, and business support services.

The Advanced Manufacturing industry depends mostly upon unskilled talent, with the expectation that employers provide some level of on-the-job training. Occupations with greater educational attainment requirements include **Industrial Engineers, Purchasing Agents,** and **Managers of Production and Operations.**

A majority of the top 25 occupations in Northeast Florida's Advanced Manufacturing industry have posted employment gains in recent years. The fastest growing occupations include **Electrical and Electronic Equipment Assemblers** (11% growth), **Machinists** (10%), and **Structural Metal Fabricators and Fitters** (10%).

The most concentrated occupations in Northeast Florida's Advanced Manufacturing industry include **Aircraft Mechanics & Service Technicians** (2.8 LQ) and **Structural Metal Fabricators and Fitters** (1.9).

SOC Code	Occupation	% of Cluster Jobs	Typical Entry Level Education	2017 Jobs	2017 LQ	'12-'17 Net New Jobs in Cluster	'12-'17 % Growth
51-2092	Team Assemblers	6%	High school	1,046	0.6	103	3.3%
51-9111	Packaging and Filling Machine Operators	4%	High school	769	1.1	4	0.2%
51-1011	Supervisors of Production and Operating Workers	4%	High school	744	0.7	79	3.7%
51-4121	Welders, Cutters, Solderers, and Brazers	4%	High school	686	0.7	94	7.2%
53-7062	Laborers and Freight, Stock & Material Movers	3%	No formal edu	496	1.1	38	0.3%
51-2041	Structural Metal Fabricators and Fitters	3%	High school	493	1.9	67	9.6%
41-4012	Sales Representatives, Wholesale and Manufacturing	3%	High school	454	1.0	58	0.9%
51-9061	Inspectors, Testers, Sorters, Samplers &Weighers	2%	High school	413	0.6	37	2.7%
51-4041	Machinists	2%	High school	397	0.4	67	10.2%
49-9041	Industrial Machinery Mechanics	2%	High school	376	0.9	54	3.8%
17-2112	Industrial Engineers	2%	Bachelor's	368	0.8	42	4.4%
51-2022	Electrical and Electronic Equipment Assemblers	2%	High school	306	0.4	48	11.1%
49-9071	Maintenance and Repair Workers, General	2%	High school	288	1.0	18	0.3%
43-5071	Shipping, Receiving, and Traffic Clerks	2%	High school	270	0.8	25	0.9%
43-4051	Customer Service Representatives	1%	High school	241	1.6	29	0.1%
53-7051	Industrial Truck and Tractor Operators	1%	No formal edu	236	0.9	13	0.6%
49-3011	Aircraft Mechanics and Service Technicians	1%	Postsecondary	225	2.8	10	0.6%
11-1021	General and Operations Managers	1%	Bachelor's deg	219	0.6	22	0.3%
53-7064	Packers and Packagers, Hand	1%	No formal edu	211	1.0	10	0.3%
43-9061	Office Clerks, General	1%	High school	197	0.9	19	0.2%
43-5081	Stock Clerks and Order Fillers	1%	High school	196	1.1	23	0.2%
11-3051	Industrial Production Managers	1%	Bachelor's	188	0.5	14	3.3%
43-6014	Secretaries and Administrative Assistants	1%	High school	185	1.2	25	0.2%
13-1023	Purchasing Agents	1%	Bachelor's	177	0.9	19	1.5%
43-5061	Production, Planning, and Expediting Clerks	1%	High school	174	0.7	12	1.1%

Higher than average concentration of jobs (LQ) (LQ>1)
Average to slightly lower than average LQ (LQ = 0.5 - 1)
Much lower than average LQ (LQ<0.5)

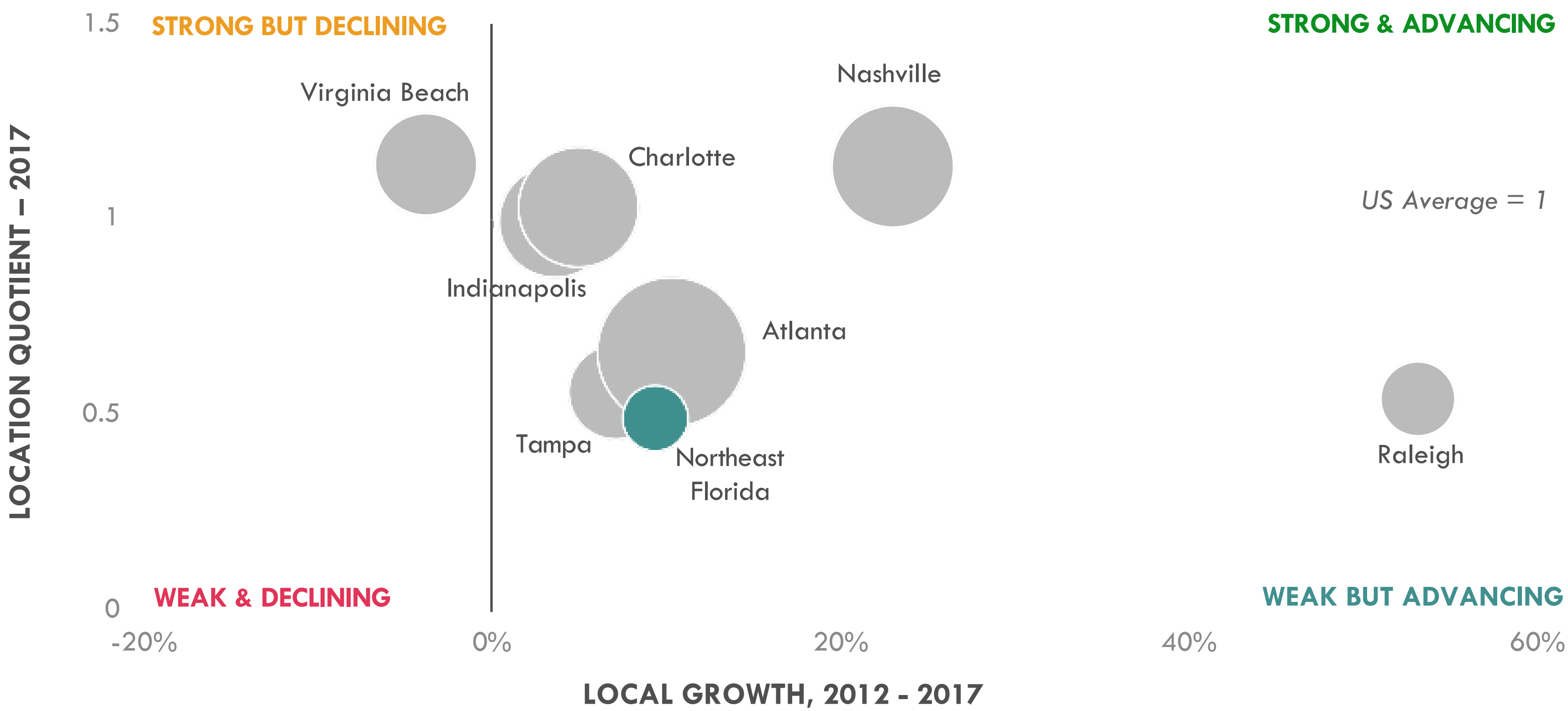
SOURCE: EMSI / Avalanche Consulting

Benchmark Comparison

On a per capita basis, Advanced Manufacturing employment in Northeast Florida is about half as concentrated in the region relative to the US average. Among benchmark regions, only Virginia Beach and Nashville have higher concentrations of Advanced Manufacturing jobs relative to the nation. (Note: For an explanation of Location Quotients (LQ), please see page 51 of the Appendix.)

Between 2012 and 2017, Advanced Manufacturing employment in Northeast Florida increased 9%, more than twice the national rate of growth. Northeast Florida's Advanced Manufacturing job gains also exceeded the rate of growth observed in several benchmark regions, including Tampa, Charlotte, Indianapolis, and Virginia Beach. Still, the local manufacturing industry is relatively small compared to the benchmarks. The lower concentration and healthy, recent growth indicates that this industry is poised for further expansion in the region.

ADVANCED MANUFACTURING EMPLOYMENT



Regional Strengths and Sales Messages

TALENT

- The region's population and workforce growth has exceeded the national average over the past five years. The workforce has grown at a faster pace than jobs. After adding 140,000 new residents since 2010, the region's current population is 1.7 million residents.
- Since 2012, the region's population of 25-44 year-olds increased by 17.5% (compared to 14% nationally), and the percent of population with a Bachelor's degree or higher increased 10.5%.
- The region has a higher percentage of population with an Associate's degree than the US, state of Florida, and benchmark regions.
- The region has a large population of military veterans, and its veteran workforce programs are among the best in the nation. The region is home to four military bases and has the third largest military population in the US.
- More than 55,000 students are currently enrolled in local colleges and universities in Northeast Florida.
- There are more than 130 career academies in the region.
- A new Children's Museum in St. Augustine broke ground in 2018 and will focus on STEAM (Science, Technology, Engineering, Arts and Math)
- At an average annual salary of $61,000, Advanced Manufacturing salaries are $8,000 less than the national average. However locally, Advanced Manufacturing pays nearly 30% more than the average salary for all industries.

INFRASTRUCTURE

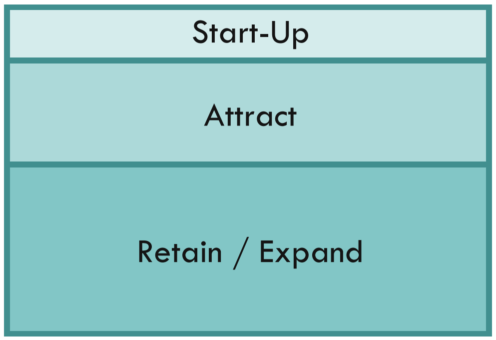
- Served by JAXPORT, the Port of Fernandina, Jacksonville International Airport, Cecil Commerce Center, three major railroads, and three interstates, Advanced Manufacturers can easily ship their products and supplies out of and into the region to any place in the world. The region is also home to the East Coast's only horizonal launch commercial spaceport.
- Northeast Florida offers a wide diversity of locations for Advanced Manufacturing operations, including four certified megasites.
- The region is an international leader in the production and export of liquified natural gas (LNG).

BUSINESS CLIMATE

- Major Advanced Manufacturing employers in Northeast Florida include: Bacardi, BAE Systems, GE Oil & Gas, Johnson & Johnson, Medtronic, Northrop Grumman, Rayonier, Ring Power CAT, and Saft, to name a few.
- Advanced Manufacturing employment in Northeast Florida totals 17,600.
- Between 2012 and 2017, total Advanced Manufacturing employment in the region rose by more than 9%. Nationally, Advanced Manufacturing employment increased less than 4% during this period.
- The region added 100,000 net new jobs between 2012 and 2017. Between 2016-2017, the MSA experienced the third fastest job growth of all major metros in the nation.
- The entire seven-county region is a designated Foreign Trade Zone.
- The overall cost of living and doing business in the region is below average. Construction, utility, and real estate costs are below most major metros.
- The region's lifestyle and natural amenities are highly appealing.
- Florida is a right-to-work state, has no corporate income tax, no state personal income tax, no property tax on inventories or goods in-transit for up to 180 days, and no sales tax on manufacturing machinery, equipment, or good for export. CITC, QTI, and QRT incentives further offset the cost of doing business in Northeast Florida.
- In 2018, *Chief Executive* ranked Florida the #2 best state for business.

Advanced Manufacturing Game Plan

APPROACH

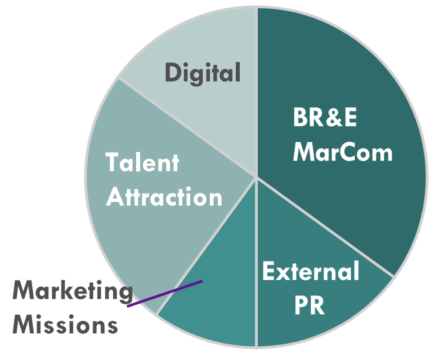


Retaining and helping existing businesses expand should be prioritized in the next 3-5 years, including active communications with local firms and industry support investments. Outbound business attraction should be given less emphasis than Business Retention and Expansion (BR&E), but remains important. Growing niche sectors, specifically, will create a ripe culture for long-term sustainability of the industry.

SUCCESS INDICATORS

- Advanced Manufacturing job growth
- Increased % of population with technical and engineering degrees
- Increased exports of mfg. goods
- Increase in Gross Regional Product

MARKETING MIX



Communications outreach to existing manufacturers in the region should be a focus, including for example, in-person BR&E meetings, involvement with industry associations, increasing export know-how, and sharing insights with companies. A proactive talent attraction campaign and external PR effort to raise awareness of the region's strengths are also recommended.

TARGET GEOGRAPHIES

- ortheast Florida
- ortheastern US
- hina
- anada
- rope
- allahassee and Gainesville (for talent attraction at UF and FSU)

INDUSTRY SUPPORT

- Following the recommendations of the Brookings Global Cities Initiative, invest in programs that help manufacturers better understand foreign markets and increase export know-how.
- Invest in a talent attraction campaign aimed at Advanced Manufacturing workers.
- Increase investment in workforce programs aimed at Advanced Manufacturing – Career Academies in K12 schools, technical programs in automation/robotics/mechatronics, and engineering programs.
- ourage existing manufacturers to participate in apprenticeship programs and other involvement with educational institutions.
- ctively promote Advanced Manufacturing as an attractive career choice for students across the region.
- ontinue advocating for competitive incentives at the state level.
- ontinue to strengthen the region's logistics infrastructure.
- rease R&D and encourage cross-collaboration between employers and academic institutions in the region.
- rease resources for STEM^2 Hub and other STEM-oriented education programs.

Financial Services Overview

INDUSTRY OVERVIEW

The Financial Services industry involves managing assets, originating loans, pooling risk, issuing securities, and providing related support activities to consumers, businesses, and governments.

Deregulation, strong economic growth, and a rapid increase in asset prices fueled substantial Financial Services employment growth during the 1990s and 2000s. While the Great Recession brought growth to an abrupt halt, the industry has rebounded. US Financial Services employment has steadily risen during the past seven years.

Companies in the Financial Services industry are heavily dependent upon a large pool of skilled talent. Back office locations are often dictated by the availability of competitively priced labor. Locations with a high quality of life and a strong college and university system enjoy a competitive advantage in attracting Financial Services firms. In terms of infrastructure needs, this industry requires Class A office space, fast, reliable internet, and proximity to well-connected air service.

REGIONAL PERFORMANCE

Financial Services employment in Northeast Florida approaches 59,000. On a per capita basis, the industry is 80% more concentrated regionally relative to the US average. In recent years, the industry has experienced growth at the regional, state, and national levels. Between 2012 and 2017, total Financial Services employment In Northeast Florida rose by 9%, outpacing the national industry growth rate (8%).

GLOBAL FORCES

The Financial Services industry is heavily influenced by macroeconomic forces, the regulatory environment, and innovations in both markets and technology.

The health of the US Financial Services industry largely rests on the fortunes of American businesses and consumers as well as prevailing interest rates. **Strong business and consumer spending** have recently bolstered the balance sheets of Financial Services firms. **In the first quarter of 2018, US banks reported their most profitable quarter ever. Rising interests bode well for future bank profits.**

The Financial Services sector is also expected to benefit from a rollback of federal legislation. In the wake of the global economic crisis, **stringent financial regulations** passed in the US and abroad **marked a significant reversal of a decades-long trend toward deregulation. The complex web of rules produced by legislation** such as the Dodd-Frank Act **increased compliance and risk management burdens** for Financial Services firms of all sizes. **Recent legislative action** at the federal level, however, will likely reverse many of these provisions.

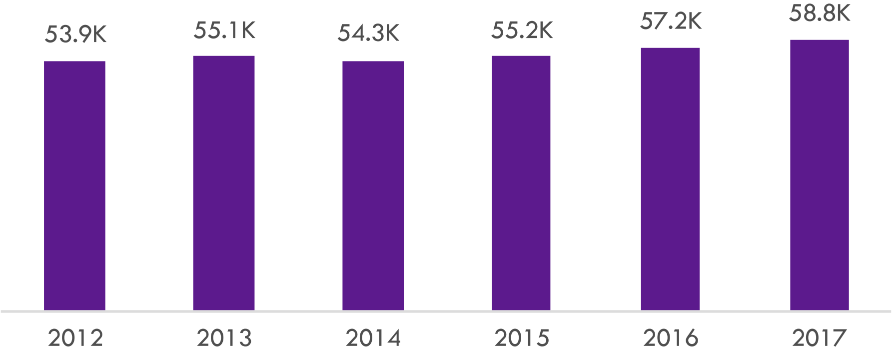
In addition to regulatory changes, Financial Services must also wrestle with **evolving consumer preferences and potentially disruptive technological innovations.** Retail customers, especially younger ones, **demand anytime, anywhere access.** Loyalty is gone: **one-third of millennials do not think they will need a bank in five years** and a similar proportion of those surveyed are open to switching banks in the next 90 days. **The entrance of new players** such as Apple, Samsung, and Google into payment services **underscore growing competition from non-banks** and **an increased emphasis on technological innovation** within Financial Services.

Financial Services Niche Sectors

Financial Services Support & Back Office – The Financial Services Support & Back Office niche sector includes business operations such as customer service, shared service, insurance claims processing, and other functions that do not involve face-to-face client interactions. Over the past decade, companies have been relocating their back office and other support services to less-established finance markets for reasons of security and cost savings. This niche sector seeks locations with an abundance of skilled labor, lower overall business costs, and low risk of natural disasters or terror attacks.

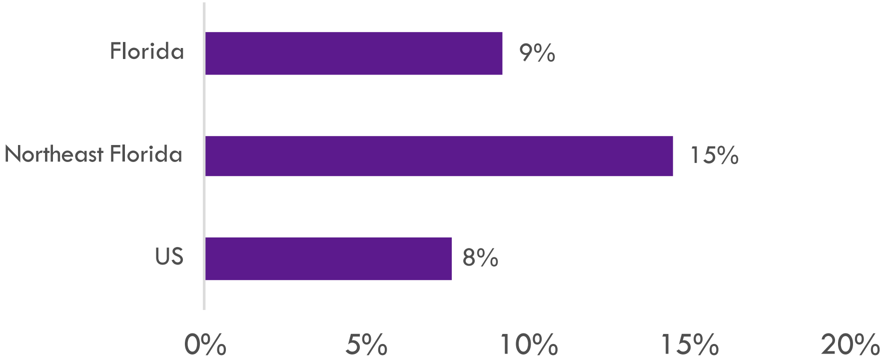
Investment Banking & Front Office – Unlike retail banking, investment banks do not take deposits. Instead, these firms provide strategic advice and secure financing for corporate and governmental clients. Historically, investment banking operations have typically concentrated in established global finance hubs such as New York City, Boston, and Chicago. In more recent years, however, lower cost locations in the West and South have become attractive. This trend may further accelerate as a result of changes in federal tax policy that limit deductions for state and local taxes, a move that will negatively impact high-cost environments in the Northeast and West Coast.

FINANCIAL SERVICES
NORTHEAST FLORIDA EMPLOYMENT



SOURCE: EMSI / Avalanche Consulting

FINANCIAL SERVICES
EMPLOYMENT GROWTH, 2012 – 2017



SOURCE: EMSI / Avalanche Consulting

Financial Services Niche Sectors

FinTech & Financial Security Software – The FinTech & Financial Security Software niche sector includes firms involved in the design, development, integration, and management of security software and systems. With increasing vulnerability to cyberattacks, these products and services are intended to protect the data of businesses and consumers. With major data breaches regularly making national headlines in recent years, ensuring digital security is paramount to maintaining customer and client trust. On the innovation side, advances in predictive analytics and other security measures are likely to fuel additional market growth.

FINANCIAL SERVICES
AVERAGE SALARY, 2017

SOURCE: EMSI / Avalanche Consulting

Financial Services Workforce

The Financial Services industry is highly dependent upon an educated talent base, with a majority of represented occupations requiring a Bachelor's degree or higher level of educational attainment.

Customer Service Representatives represent the most common Financial Services occupation (12% of industry jobs). Other leading occupations include **Loan Officers** (7%), **Tellers** (6%), **Loan Interviewers** (6%), and various **Sales Agents.**

The vast majority of occupations in Northeast Florida's Financial Services industry have posted employment gains in recent years. **Personal Financial Advisors** (21% growth) and **Insurance Sales Agents** (18%) are the fastest growing occupations.

Northeast Florida has a strong concentration of workers in the Financial Services industry. The most concentrated occupations include **Loan Interviews and Clerks** (3.2 LQ), **Loan Officers** (2.6), **Bill and Account Collectors** (2.3) **and Claims Adjusters** (2.1).

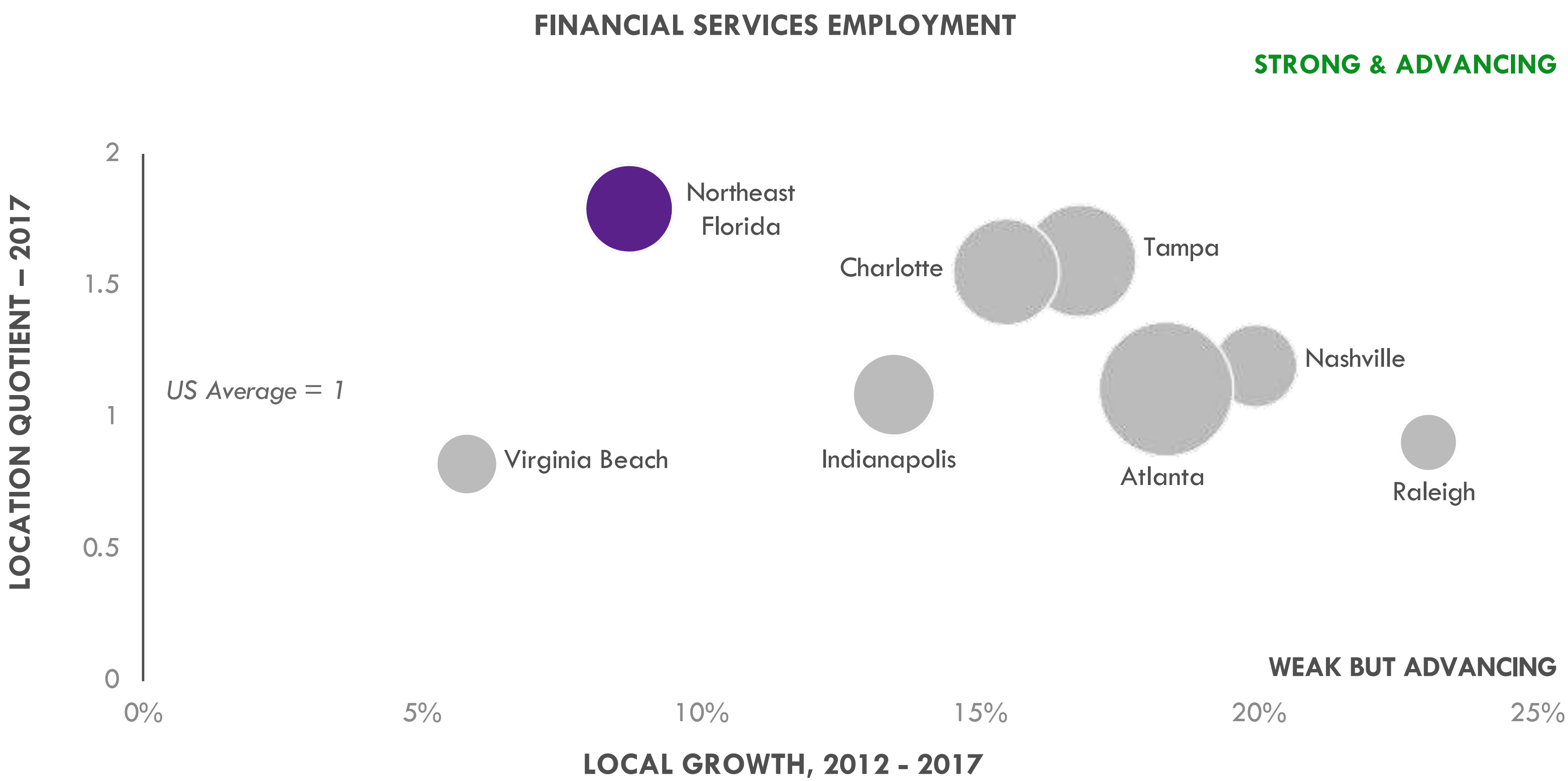
SOC Code	Occupation	% of Cluster Jobs	Typical Entry Level Education	2017 Jobs	2017 LQ	'12-'17 Net New Jobs in Cluster	'12-'17 % Growth
43-4051	Customer Service Representatives	12%	High school	6,563	1.6	583	2.8%
13-2072	Loan Officers	7%	Bachelor's	3,527	2.6	-61	-1.6%
43-3071	Tellers	6%	High school	3,387	1.4	-243	-7.1%
43-4131	Loan Interviewers and Clerks	6%	High school	3,153	3.2	-67	-1.9%
41-3031	Securities, Commodities, and Financial Svcs Sales	5%	Bachelor's	2,849	1.7	282	9.7%
41-3021	Insurance Sales Agents	5%	High school	2,565	1.3	461	17.6%
43-1011	Supervisors of Office & Admin. Support Workers	4%	High school	2,098	1.2	51	0.6%
13-1031	Claims Adjusters, Examiners, and Investigators	4%	High school	2,079	2.1	213	7.6%
43-9041	Insurance Claims and Policy Processing Clerks	4%	High school	1,958	1.6	192	9.0%
13-2052	Personal Financial Advisors	2%	Bachelor's	1,122	1.2	245	21.0%
43-6014	Secretaries and Adm. Assistants	2%	High school	1,056	1.2	136	1.1%
13-2051	Financial Analysts	2%	Bachelor's	978	1.1	118	7.4%
13-1111	Management Analysts	2%	Bachelor's	974	1.3	76	1.8%
43-9061	Office Clerks, General	2%	High school	938	0.9	84	0.7%
13-1199	Business Operations Specialists, All Other	2%	Bachelor's	926	1.5	67	1.0%
13-2011	Accountants and Auditors	2%	Bachelor's	926	1.0	91	1.4%
43-3011	Bill and Account Collectors	2%	High school	899	2.3	32	1.0%
11-3031	Financial Managers	2%	Bachelor's	894	0.7	8	0.4%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	2%	Some College	847	1.0	8	0.1%
15-1132	Software Developers, Applications	1%	Bachelor's	732	0.8	52	1.7%
13-2053	Insurance Underwriters	1%	Bachelor's	659	1.5	-25	-3.6%
43-6011	Executive Secretaries & Executive Adm. Assistants	1%	High school	635	1.0	39	1.2%
11-1021	General and Operations Managers	1%	Bachelor's	620	0.6	19	0.3%
15-1121	Computer Systems Analysts	1%	Bachelor's	522	0.7	26	1.4%
41-3099	Sales Representatives, Services, All Other	1%	High school	506	1.3	35	0.6%

Higher than average concentration of jobs (LQ) (LQ>1)
Average to slightly lower than average LQ (LQ = 0.5 - 1)
Much lower than average LQ (LQ<0.5)

SOURCE: EMSI / Avalanche Consulting

Benchmark Comparison

Financial Services employment is more concentrated in Northeast Florida than all other benchmark regions. On a per capita basis, Northeast Florida is home to approximately 80% more Financial Services jobs relative to the US average. In absolute terms, Northeast Florida has more Financial Services jobs than benchmark regions such as Nashville, Indianapolis, Raleigh, and Virginia Beach. Between 2012 and 2017, industry employment in Northeast Florida rose by nearly 9%. (Note: For an explanation of Location Quotients (LQ), please see page 51 of the Appendix. Also note, because there was no negative local growth between 2012-2017, the left two quadrants illustrated on page 51 – Strong But Declining and Weak & Declining - do not appear on this chart.)



Regional Strengths and Sales Messages

TALENT

- e region's population and workforce growth has exceeded the national average over the past five years. The workforce has grown at a faster pace than jobs. After adding140,000 new residents since 2010, the region's current population is 1.7 million residents.
- ince 2012, the region's population of 25-44-year-olds increased 17.5% (compared to 14% nationally) and the percent of population with a Bachelor's degree or higher increased 10.5%.
- ere are nearly 60,000 Financial Service workers in the region.
- NF's Accounting Division is ranked among the best in the US.
- ere are more than 55,000 students currently enrolled in colleges and universities in Northeast Florida.
- t $68,000, the average annual salary in Northeast Florida's Financial Services industry is $26,000 less than the national average.

INFRASTRUCTURE

- ortheast Florida offers a wide diversity of locations for Financial Services operations – urban, suburban, and rural.
- e region has 95+ non-stop flights daily, including a short, 90-minute flight to New York City.
- owntown Jacksonville has a Network Access Point - JAX NAP - the only one between Atlanta and Miami and a unique asset for businesses with heavy IT needs. There are 32 countries connected via the NAP. The 240,000-square-foot facility hosts co-location data centers, network POPs, and subsea fiber providers.

BUSINESS CLIMATE

- ortheast Florida has a diverse, growing industry base in Financial Services. Major employers include Bank of America Merrill Lynch, Florida Blue, Citi, JP Morgan Chase, Aetna, Deutsche Bank, Macquarie Group, CIT, TIAA Bank, FIS, Wells Fargo, PHN, and Fidelity just to name a few. Twenty major banks, insurance, and investment services firms on Forbes' Global 500 list have operations in the region.
- tween 2012 and 2017, total Financial Services employment in the region rose 9.3%, growing faster than the national average.
- e overall cost of living and doing business in the region is below average. Construction, utility, and real estate costs are below most major metros.
- e region's lifestyle and natural amenities are highly appealing.
- tween 2016-2017, the MSA experienced the third fastest job growth of all major metros in the nation.
- orida is a right-to-work state, has no corporate income tax, no state personal income tax, no property tax on inventories or goods in-transit for up to 180 days, and no sales tax on manufacturing machinery, equipment, or good for export. CITC, QTI, and QRT incentives further offset the cost of doing business in Northeast Florida.
- n 2018, *Chief Executive* ranked Florida the #2 best state for business.

Financial Services Game Plan

APPROACH

Start-Up

Attract

Retain / Expand

Financial Services industry growth should result from a balanced approach that dedicates resources almost evenly to expanding existing businesses, attracting new companies into the region, and investing in entrepreneurial support. Encouraging startups at home, especially in FinTech, should help offset potential industry disruption.

SUCCESS INDICATORS

- ancial Services job growth
- reased % of population with Finance and Insurance degrees or Bachelor's degrees in general
- rease in household incomes or Financial Services salaries

MARKETING MIX

The marketing mix for Financial Services should be fairly balanced between digital outreach and external PR, marketing missions to enhance relationships, and communicating with local firms to encourage expansion. Communications aimed at retaining and attracting talent will be key. Area executives say that local educational institutions have been their best source of talent. Retaining those individuals should be prioritized.

TARGET GEOGRAPHIES

- ortheastern US
- harlotte
- allas and Houston
- rope
- ortheast Florida

INDUSTRY SUPPORT

- rease investment in workforce programs aimed at Financial Services professions – Career Academies in K12 schools, technical programs in IT, and finance/accounting/insurance degrees.
- rease networking among Financial Services firms and consider establishing a business council.
- ontinue to invest in enlivening downtown Jacksonville and other recreation and entertainment amenities to attract businesses and talent (especially mid- to senior-level managers).
- ontinue advocating for competitive State incentives.
- ommunicate with area college students and finance professionals to help them connect with jobs and compel them to stay in the region.
- reate a more robust entrepreneurial ecosystem.
- onnect entrepreneurs with larger Financial Services firms and encourage collaboration.
- rease awareness of and utilization of FindYourJAX.

Health & Biomedical Overview

INDUSTRY OVERVIEW

The Health & Biomedical industry encompasses a range of technology, products, and services that enhance the physical and mental well-being of human patients. The industry includes businesses engaged in the development and manufacture of technology, pharmaceuticals, and devices to diagnose, manage, and treat human health conditions.

Hospitals, clinics, nursing facilities, and doctors offices – the primary providers of healthcare services – are typically located near substantial patient populations. Other factors such as public budgets and insurance systems may also play a role in the location of these operations.

Other Health & Biomedical functions, including clinical trials, drug development and technology development, often concentrate in proximity to large hospital networks and universities with extensive research capabilities. The presence of a university may also ensure regional Health & Biomedical firms have access to a pipeline of highly skilled talent. Medical Tourism benefits from a world-renowned healthcare provider and specialty services, quality of life amenities, and convenient transportation infrastructure such as an international airport and interstate access.

REGIONAL PERFORMANCE

Health & Biomedical employment in Northeast Florida totals nearly 89,000 and is 10% more concentrated regionally relative to the US average. During the past five years, the industry has grown significantly faster than the statewide and national averages. Between 2012 and 2017, Health & Biomedical employment in Northeast Florida increased by more than 16%. Nationally, the industry grew just 9% during this period.

GLOBAL FORCES

Growth in the Health & Biomedical industry is currently being influenced by a variety of demographic, technological and economic forces.

Thanks to a **growing and aging US population**, demand for healthcare services continues to rise. **With more than 10,000 Baby Boomers reaching retirement age every day,** this is a trend that will continue for at least another decade. Because of this, the future Health & Biomedical growth is all but assured.

The deployment of new technology and therapies is another primary driver of Health & Biomedical growth. **Mobile devices and software** are allowing doctors to reduce costs by providing distance treatment. Advances in **the ability to deliver custom medical treatments based on patient biological information** are leading to more **personalized and effective treatments and medicines**. Many of these recent breakthroughs in medical treatment, however, have proven fantastically expensive.

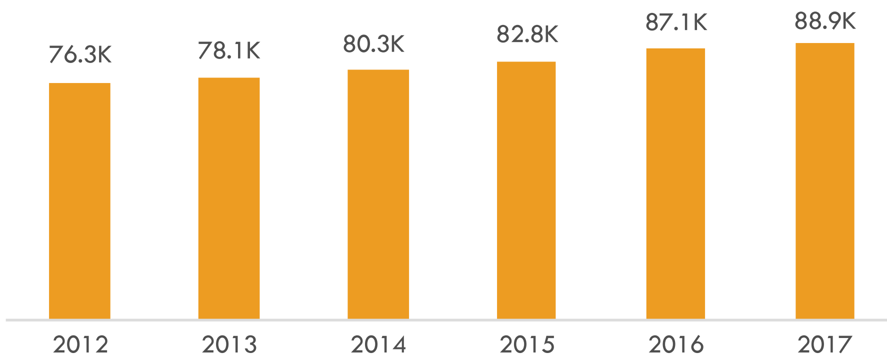
Within five years, healthcare is projected to capture 20% of all US spending. Rising costs are one contributor to a wave of Health & Biomedical mergers as hospitals and other companies look to reduce costs through consolidation. The drive for cost reduction is also leading to new emphases in the delivery of healthcare service. More doctors are **prioritizing patient outcomes** and focusing on **behavioral, lifestyle, and wellness strategies**.

Health & Biomedical Niche Sectors

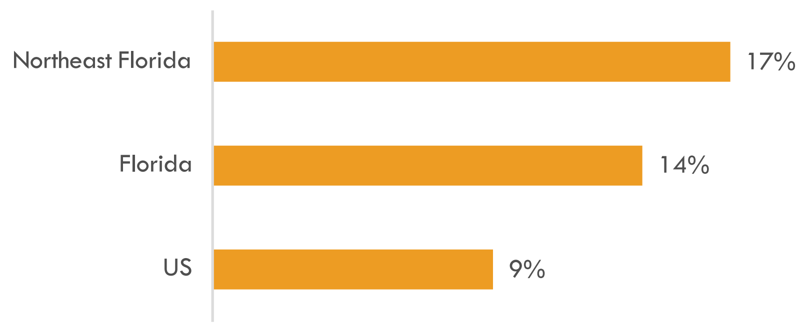
Medical Devices – Medical devices include equipment and instruments designed to treat and diagnose human illness. Medical devices include relatively simple objects such as surgical masks to extremely complex mechanisms such as pacemakers. Growth in the medical devices sector continues to be fueled by an aging population, increased life expectancy, and technological advances. Traditionally, the use of medical devices has been the domain of trained medical professionals. The growing popularity of wearable technologies, which incorporate increasingly sophisticated sensors capable of tracking a user's vital signs and physical activity, is beginning to usher in an era of consumer-driven demand for Medical Devices.

Medical Research – Medical Research includes both public and private expenditures for the exploration and refinement of medical products and therapeutic treatments. Medical Research may include lab-based explorations housed within a research hospital or university as well as clinical trials that occur later in the discovery process. According to the American Medical Association's flagship journal, *JAMA*, US spending on biomedical research totals $117 billion annually. With spending increases for both the The National Institutes of Health and National Science Foundation, the most recent federal budget will boost domestic Medical Research even further.

Health & Biomedical
NORTHEAST FLORIDA EMPLOYMENT



Health & Biomedical
EMPLOYMENT GROWTH, 2012 – 2017



SOURCE: EMSI / Avalanche Consulting

Health & Biomedical Niche Sectors

Medical Tourism – Medical Tourism involves patients who travel to other cities or countries to receive medical treatment. Historically, Medical Tourism has involved residents of wealthier countries departing for developing countries where medical care is less expensive than in domestic markets. Growing incomes in the developing world, however, have fueled a growing demand for high-quality, specialized care in the US for wealthy residents of other countries. Medical Tourism has also been embraced by some self-insured companies as a means of reducing healthcare expenses. Both Lowes and Wal-Mart, for example, have partnered with the Cleveland Clinic to provide cardiac surgery to employees throughout the US.

Healthcare Information Technology – Healthcare IT, also known as MedTech, encompasses a host of information technology applications that serve the broader healthcare industry. Healthcare Technology involves the convergence of software, services, and devices that address the needs of both individual patients and healthcare delivery systems. This includes the development of mobile software, devices, and services that allow doctors to assess and interact with patients without a hospital visit. It also includes the development of software to better administer complex hospital financial, regulatory, supply, and record-keeping systems. Healthcare IT firms often locate in regions that boast a combination of research hospitals, existing firms, a workforce rich in talent, and a population that facilitates the testing of new products and services.

Health & Biomedical
AVERAGE SALARY, 2017

SOURCE: EMSI / Avalanche Consulting

Health & Biomedical Workforce

The Health & Biomedical industry has a wide array of skilled and unskilled positions. Leading Health & Biomedical occupations include **Registered Nurses** (16% of industry jobs), **Nursing Assistants** (8%), and **Medical Assistants** (6%). These positions typically require some sort of post-secondary certification or a Bachelor's degree for entry level positions. Occupations with greater educational attainment requirements include **Physicians & Surgeons, Physical Therapists,** and **Family & General Practitioners.**

Among the top 25 occupations in Northeast Florida's Health & Biomedical industry, all have enjoyed employment gains in Northeast Florida during the past five years. The fastest growing occupations include **Nurse Practitioners** (22% growth), **Medical Assistants** (17%), and **Physical Therapists** (17%).

The most concentrated occupations in Northeast Florida's Health & Biomedical industry include **Health Technologists & Technicians** (2.1 LQ), **Medical Assistants** (1.6), and **Customer Service Representatives** (1.6).

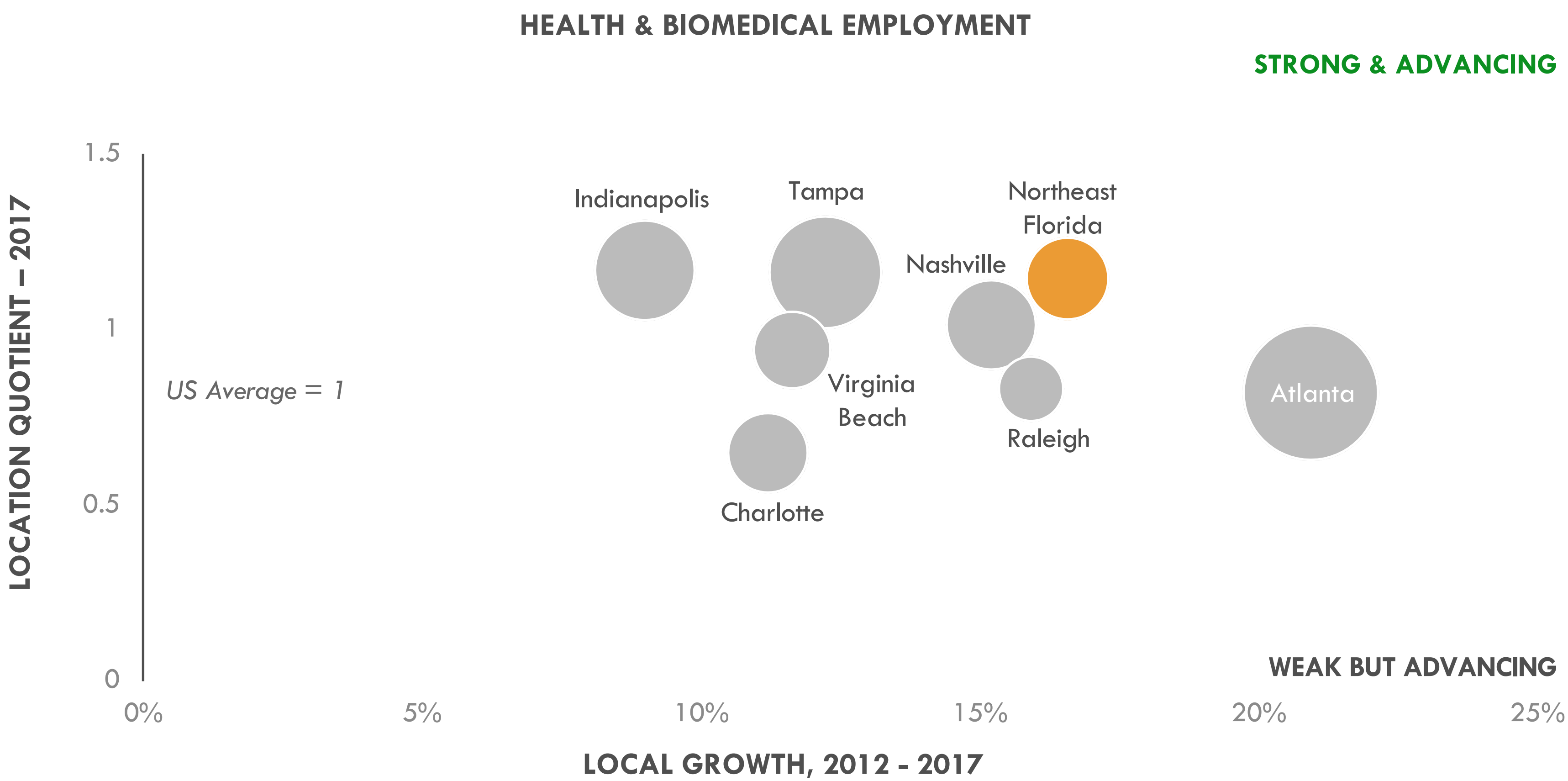
SOC Code	Occupation	% of Cluster Jobs	Typical Entry Level Education	2017 Jobs	2017 LQ	'12-'17 Net New Jobs in Cluster	'12-'17 % Growth
29-1141	Registered Nurses	17%	Bachelor's	14,693	1.2	2,499	14.9%
31-1014	Nursing Assistants	8%	Certificate	7,196	1.1	936	11.9%
31-9092	Medical Assistants	6%	Certificate	4,889	1.6	878	17.4%
29-2061	Practical/Vocational Nurses	4%	Certificate	3,884	1.3	622	14.0%
43-4171	Receptionists and Information Clerks	3%	High school	3,031	1.1	507	9.1%
43-9061	Office Clerks, General	2%	High school	1,705	0.9	234	1.9%
43-3021	Billing and Posting Clerks	2%	High school	1,646	1.4	304	9.1%
43-6013	Medical Secretaries	2%	High school	1,625	0.6	183	10.6%
43-6014	Secretaries & Administrative Assistants	2%	High school	1,527	1.2	215	1.7%
39-9021	Personal Care Aides	2%	High school	1,484	0.4	260	7.4%
43-1011	First-Line Supervisors of Office Workers	2%	High school	1,437	1.2	241	2.9%
31-9091	Dental Assistants	2%	Certificate	1,373	0.9	176	12.3%
37-2012	Maids and Housekeeping Cleaners	2%	None	1,361	1.3	161	2.6%
43-4051	Customer Service Representatives	2%	High school	1,339	1.6	216	1.0%
29-1069	Physicians and Surgeons, All Other	1%	Doctoral/Pro.	1,231	0.9	165	11.5%
29-2099	Health Technologists and Technicians	1%	Certificate	1,163	2.1	191	15.0%
29-2021	Dental Hygienists	1%	Associate's	1,094	1.1	142	12.7%
31-1011	Home Health Aides	1%	High school	1,028	0.3	105	7.8%
29-2034	Radiologic Technologists	1%	Associate's	980	1.1	111	10.7%
29-1123	Physical Therapists	1%	Doctoral/Pro.	853	0.8	156	17.1%
29-2071	Medical Records & Information Technicia	1%	Certificate	836	1.1	130	11.7%
29-1171	Nurse Practitioners	1%	Master's	781	1.1	172	20.7%
11-9111	Medical and Health Services Managers	1%	Bachelor's	776	0.6	83	8.5%
29-1062	Family and General Practitioners	1%	Doctoral/Pro.	682	1.2	69	9.6%
29-2055	Surgical Technologists	1%	High school	681	1.3	99	14.2%

Higher than average concentration of jobs (LQ) (LQ>1)
Average to slightly lower than average LQ (LQ = 0.5 - 1)
Much lower than average LQ (LQ<0.5)

SOURCE: EMSI / Avalanche Consulting

Benchmark Comparison

Between 2012 and 2017, Health & Biomedical employment in Northeast Florida increased by nearly 17%. During this period, the growth rate of Northeast Florida's Health & Biomedical industry exceeded that of Raleigh, Nashville, Tampa, Virginia Beach, Charlotte, and Indianapolis. On a per capita basis, Health & Biomedical employment in Northeast Florida is approximately 10% more concentrated within the region relative to the US average. Health & Biomedical employment in Northeast Florida is more concentrated relative to several benchmark regions, including Nashville, Virginia Beach, Raleigh, and Charlotte. (Note: For an explanation of Location Quotients (LQ), please see page 51 of the Appendix. Also note, because there was no negative local growth between 2012-2017, the left two quadrants illustrated on page 51 – Strong But Declining and Weak & Declining - do not appear on this chart.)



Regional Strengths and Sales Messages

TALENT

- e region's population and workforce growth has exceeded the national average over the past five years. The workforce has grown at a faster pace than jobs. After adding 140,000 new residents since 2010, the region's current population is 1.7 million residents.
- ince 2012, the region's population of 25-44 year-olds increased 17.5% (compared to 14% nationally) and the percent of population with a Bachelor's degree or higher increased 10.5%.
- e region has a higher percentage of population with an Associate's degree than the US, state, or benchmark regions.
- ne in every six jobs in the region is in the Health & Biomedical industry.
- ere are more than 55,000 students currently enrolled in colleges and universities in Northeast Florida. Local Health & Biomedical companies specifically cite UNF, JU, and FSCJ as having top-notch programming for their field.
- e region is located no more than 1.5 hours from the University of Florida, which produces more than 12,000 graduates per year, including more than 1,800 in Science & Engineering. Nearly 70% of UF's $700 million in research expenditures is in the field of Life Sciences.

INFRASTRUCTURE

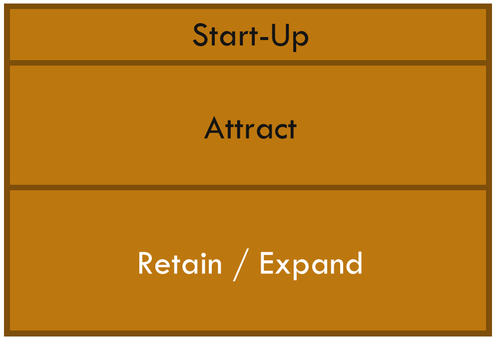
- ved by JAXPORT, Jacksonville International Airport, Cecil Commerce Center, three major railroads, and three interstates, the region is a major US logistics hub.
- e region has 85+ non-stop flights daily, including flights to other healthcare hubs like Baltimore, Boston, Cleveland, Houston, and NYC.
- ew flights from Northeast Florida Airport in St. Augustine to Rochester have begun in partnership with Mayo Clinic.
- owntown Jacksonville has a Network Access Point - JAX NAP - the only one between Atlanta and Miami and a unique asset for businesses with heavy IT needs. There are 32 countries connected via the NAP. The 240,000-square-foot facility hosts co-location data centers, network POPs, and subsea fiber providers.

BUSINESS CLIMATE

- ajor Health and Biosciences companies in Northeast Florida include Mayo Clinic (one of only three in the US), Baptist MD Anderson (one of only five in the US), UF Proton Therapy Institute, Brooks Rehabilitation, Medtronic, McKesson, Guidewell Source, Availity, and HCI Group just to name a few.
- or companies selling healthcare products, Northeast Florida and the larger region has a sizable consumer base.
- ealth & Biomedical employment in Northeast Florida totals nearly 90,000.
- tween 2012 and 2017, total Health & Biomedical employment in the region rose by 16.6%. Nationally, industry employment increased 9% over the same time frame.
- e region's lifestyle and natural amenities are highly appealing.
- tween 2016-2017, the MSA experienced the third fastest job growth of all major metros in the nation.
- e overall cost of living and doing business in the region is below average.
- orida is a right-to-work state, has no corporate income tax, no state personal income tax, no property tax on inventories or goods in-transit for up to 180 days, and no sales tax on manufacturing machinery, equipment, or good for export. CITC, QTI, and QRT incentives further offset the cost of doing business in Northeast Florida.
- n 2018, *Chief Executive* ranked Florida the #2 best state for business.

Health & Biomedical Game Plan

APPROACH

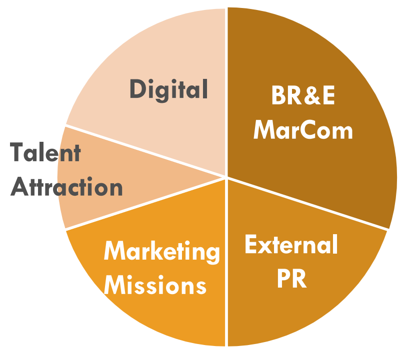


Growing the region's Health & Biomedical industry will entail a strong, nearly even mix of business attraction and existing business expansion. A healthier entrepreneurial ecosystem will also be beneficial, especially to ensure that innovations spinning out of large employers have a landing pad in Northeast Florida.

SUCCESS INDICATORS

- eath and Biomedical job growth
- reased population with Science and Engineering degrees
- reased household incomes
- reased number of tourists

MARKETING MIX



The marketing mix for Health & Biomedical should include heightened outreach and communications with existing employers, and a well-rounded mix of digital outreach, PR, and marketing missions to raise awareness of the region among external audiences. At home, retention of graduates from the area's colleges and universities will be as important as talent attraction.

TARGET GEOGRAPHIES

- ortheastern US
- anada
- rope
- ortheast Florida

INDUSTRY SUPPORT

- reate networking opportunities for firms in the Health & Biomedical field, such as a regional council.
- ork with the regional industry council to increase connectivity with area students, promoting careers in the field and opportunities to stay in the region after graduation.
- rease investment in workforce programs aimed at careers in Health 7 Biomedical.
- dvocate for establishing a medical school in Northeast Florida.
- ontinue to enliven downtown Jacksonville and invest in quality of life amenities across the region.
- rease relationships between Northeast Florida and the University of Florida.
- xpand university and private sector R&D partnerships.
- onnect local entrepreneurs with larger Health & Biomedical employers in the region, encouraging collaboration.
- rease resources for STEM² Hub and other STEM-oriented education programs.

Advanced Transportation & Logistics Overview

INDUSTRY OVERVIEW

The Advanced Transportation & Logistics industry revolves around the storage and distribution of goods and people. Increasingly, new technologies from autonomous vehicles, drones, and smart infrastructure aim to transform how goods and people are moved across multi-modal transportation systems. **This next generation of Transportation & Logistics, called "Advanced Transportation & Logistics," is Northeast Florida's target for the next five years. It emphasizes a focus on Transportation, Logistics, and Smart Infrastructure firms that are technology driven.**

During the past five years, employment in the industry has grown at twice the pace of the overall US job market. The industry has thrived thanks to global free trade, a resurgent domestic manufacturing sector, continued technological innovations, and the explosive growth of online retailing.

Firms in this industry tend to locate in regions that enjoy proximity to large consumer markets and/or centers of production. Regional infrastructure is critical including multi-modal transportation options. While the facilities can vary widely, firms generally require inexpensive land, logistical access, and in the case of refrigerated storage, affordable electricity. As warehouses increase in size as companies look to gain efficiencies, the availability of large parcels with sufficient egress and ingress to accommodate trucks and nearby freeways is also an important consideration.

REGIONAL PERFORMANCE

Northeast Florida is an established logistics hub. On a per capita basis, the region is home to approximately 40% more jobs in this industry relative to the US average. In 2017, Northeast Florida industry employment approached 25,000. During the past five years, regional employment in the industry grew approximately 15%, a pace above the regional average.

GLOBAL FORCES

The industry continues to evolve in the face of a variety of political, technological, and market forces.

On the political front, **enthusiasm in the US for trade agreements has recently waned.** Last year, the US withdrew from the Trans-Pacific Partnership. NAFTA is also being renegotiated, creating further uncertainty with two of America's largest trading partners. Finally, recent tariffs imposed by the US on imports have sparked concerns of a broader trade war with China.

The renewed health of US manufacturing operations has helped bolster the fortunes of Advanced Transportation & Logistics companies. Rising labor expenses in many traditionally low-cost countries, combined with flat wage growth at home and inexpensive domestic energy supplies, contribute to vibrant US growth in this industry. While the growth of US exports has most directly favored manufacturers, companies that move supplies and manufactured goods have also greatly benefitted.

From a technological perspective, **increased automation is revolutionizing labor requirements of Advanced Transportation & Logistics firms.** The growing adoption of robots and other automated technologies in warehouse environments has already helped boost the industry's productivity. While automation may limit further employment growth among specific occupations, **the use of new technologies is also likely to drive employment growth in higher skill positions** such as data analytics specialists who can help predict shipment volumes and identify more efficient routes.

Advanced Transportation Niche Sectors

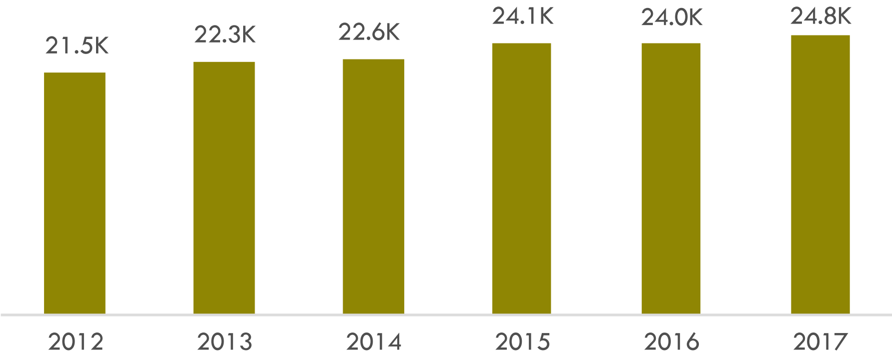
Intermodal Distribution – Intermodal distribution is the foundation of today's global Advanced Transportation & Logistics industry. By seamlessly integrating the movement of goods via rail, truck, air, and sea, the industry has helped establish incredibly complex supply chains while keeping cost to a minimum. Modal transfer points are critical to this process and require specifically dedicated facilities. The search for efficient and inexpensive distribution channels is leading to growth in all forms of distribution in the US – especially intermodal rail. In 2017, US railroads transported a record 14 million intermodal containers and trailers. Intermodal distribution operations thrive in regions rich with infrastructure and geographic advantages. Locations with interstate access, deep water ports, and extensive rail access, for example, are especially attractive.

Third-Party Logistics – Third-Party Logistics firms employ sophisticated processes and technologies to manage the supply chains of other businesses. Third-Party Logistics firms serve a variety of industries, including automotive, retail, industrial products, and consumer goods. A strong economy has increased traffic across virtually all of these sectors in recent years. Strong automobile production as well as renewed oil & gas activity, for example, have helped push US manufacturing output near an all-time high. The continued growth of online retailing has driven additional demand for Third-Party Logistics services, especially among companies looking to remain competitive in the age of Amazon.

Assembly, Repackaging & Kitting – Assembly, Repackaging & Kitting typically involves a third-party company that integrates warehousing and packaging operations into a single facility. By outsourcing Assembly, Repackaging & Kitting services, manufacturers can reduce inventory needs while also providing a variety of customization options. For example,

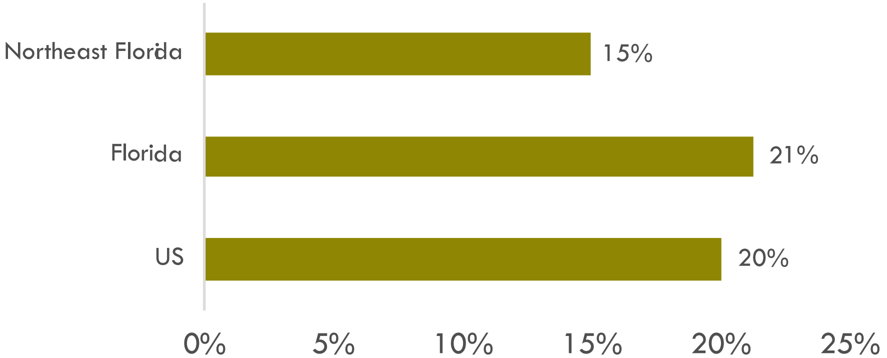
(*continued*)

TRANSPORTATION & LOGISTICS
NORTHEAST FLORIDA EMPLOYMENT



SOURCE: EMSI / Avalanche Consulting

TRANSPORTATION & LOGISTICS
EMPLOYMENT GROWTH, 2012 – 2017



SOURCE: EMSI / Avalanche Consulting

Advanced Transportation Niche Sectors

(*Assembly, Repackaging & Kitting continued*)

an Assembly, Repackaging & Kitting operation may deliver kit containers to automobile manufacturers featuring all the components necessary to produce a specific part. By providing on-demand assembly, Assembly, Repackaging & Kitting can help manufacturers maintain lean, flexible production systems.

Smart Infrastructure – As highlighted earlier, the Advanced Transportation & Logistics industry is heavily reliant on infrastructure. The rise of cloud-based digital management systems promises to deliver even more sophisticated analytical capabilities to small and mid-sized companies, allowing them to support even more efficient supply chains. Rising deployment of smart transportation technologies is likely to prove even more revolutionary. While the consumer market implications of self-driving cars have been widely touted, for example, the impact on industry may prove far more wide-reaching. Self-driving trucks, for example, could help address a critical shortage of drivers while increasing efficiency. Robots may similarly transform the selection and packaging of warehouse goods. Just a few years ago, for example, Amazon had 15,000 robots operating in its warehouses. Today, Amazon's army of robots is estimated at 100,000.

Autonomous Vehicles – The Autonomous Vehicles niche sector includes firms involved in the production of passenger cars, public transportation, industrial fleets, construction, and agricultural vehicles containing various levels of automation. It also includes firms involved in developing the sensors, hardware, software, and services used in the productions of these vehicles. The Autonomous Vehicle market is driven by numerous tantalizing advantages, primarily the promise of increased safety, reduced CO_2 emissions, and superior convenience. The industry is greatly dependent on continued advancements in sectors such as IT and electronics as well as a regulatory climate that facilitates innovation.

TRANSPORTATION & LOGISTICS
AVERAGE SALARY, 2017

SOURCE: EMSI / Avalanche Consulting

Advanced Transportation Workforce

Most positions in this industry have modest education requirements. The industry's single most common position, **Laborers and Freight, Stock & Material Movers,** requires no formal education (though high school graduates are typically preferred). In 2017, **Laborers and Freight, Stock & Material Movers** comprised 28% of all Northeast Florida Transportation & Logistics jobs. Other leading occupations include **Heavy and Tractor-Trailer Truck Drivers** (14% of industry jobs) and **Light Truck or Delivery Services Truck Drivers** (10%).

All top 25 occupations in Northeast Florida's have posted employment gains during the past five years. The fastest growing occupations include **Cargo & Freight Agents** (21% growth), **Ship Engineers** (16%), and **Sailors & Marine Oilers** (9%).

The most concentrated occupations in this industry in Northeast Florida are **Ship Engineers** (9.3 LQ), **Sailors & Marine Oilers** (4.4), and **Captains, Mates & Pilots of Water Vessels** (3.6).

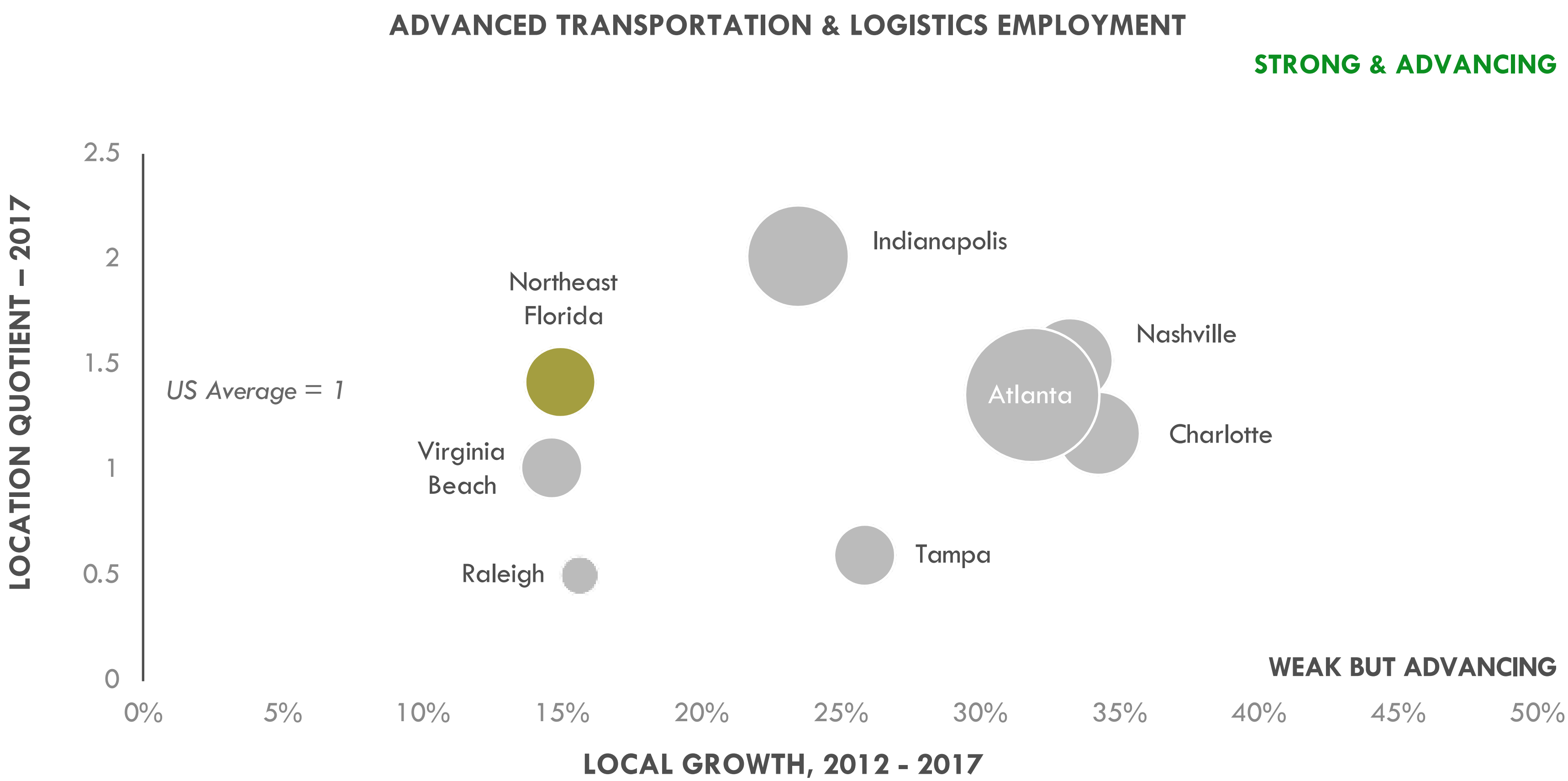
SOC Code	Occupation	% of Cluster Jobs	Typical Entry Level Education	2017 Jobs	2017 LQ	'12-'17 Net New Jobs in Cluster	'12-'17 % Growth
53-7062	Laborers and Freight, Stock & Material Movers	28%	None	3,869	1.1	638	4.5%
53-3032	Heavy and Tractor-Trailer Truck Drivers	14%	Certificate	1,899	1.2	249	2.5%
53-3033	Light Truck or Delivery Services Drivers	10%	High school	1,382	0.9	289	7.2%
53-7051	Industrial Truck and Tractor Operators	4%	None	573	0.9	65	2.7%
53-7064	Packers and Packagers, Hand	3%	None	462	1.0	87	2.6%
43-5011	Cargo and Freight Agents	3%	High school	447	1.5	137	21.2%
43-4051	Customer Service Representatives	3%	High school	426	1.6	110	0.5%
43-5081	Stock Clerks and Order Fillers	3%	High school	415	1.1	58	0.6%
53-1021	Supervisors of Helpers, Laborers & Material Movers	2%	High school	335	1.1	49	4.8%
43-5071	Shipping, Receiving, and Traffic Clerks	2%	High school	320	0.8	46	1.7%
53-5031	Ship Engineers	2%	Certificate	230	9.3	74	16.2%
41-3099	Sales Representatives, Services, All Other	2%	High school	219	1.3	62	1.0%
53-5011	Sailors and Marine Oilers	2%	None	213	4.4	59	8.5%
43-9061	Office Clerks, General	1%	High school	209	0.9	38	0.3%
53-1031	First-Line Supervisors of Vehicle Operators	1%	High school	202	1.0	31	3.2%
43-1011	Supervisors of Office & Administrative Workers	1%	High school	199	1.2	50	0.6%
53-5021	Captains, Mates, and Pilots of Water Vessels	1%	Certificate	187	3.6	49	7.7%
43-5032	Dispatchers	1%	High school	172	1.1	36	3.5%
49-3031	Bus/Truck Mechanics & Engine Specialists	1%	High school	141	1.2	18	1.3%
43-6014	Secretaries and Administrative Assistants	1%	High school	135	1.2	27	0.2%
11-1021	General and Operations Managers	1%	Bachelor's	123	0.6	22	0.3%
49-9071	Maintenance and Repair Workers, General	1%	High school	122	1.0	20	0.3%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1%	Some College	112	1.0	21	0.3%
11-3071	Transportation & Distribution Managers	1%	High school	93	0.8	16	3.7%
43-5021	Couriers and Messengers	0%	High school	65	0.6	17	6.9%

Higher than average concentration of jobs (LQ) (LQ>1)
Average to slightly lower than average LQ (LQ = 0.5 - 1)
Much lower than average LQ (LQ<0.5)

SOURCE: EMSI / Avalanche Consulting

Benchmark Comparison

Between 2012 and 2017, employment in this industry in Northeast Florida expanded 15%. During this period, industry employment in most peer regions increased at an even faster pace. On a per capita basis, employment in Northeast Florida is 40% more concentrated relative to the US average. Among benchmark regions, only Indianapolis and Nashville have proportionally more jobs in the field. (Note: For an explanation of Location Quotients (LQ), please see page 51 of the Appendix. Also note, because there was no negative local growth between 2012-2017, the left two quadrants illustrated on page 51 – Strong But Declining and Weak & Declining - do not appear on this chart.)



Regional Strengths and Sales Messages

TALENT

- e region's population and workforce growth has exceeded the national average over the past five years. The workforce has grown at a faster pace than jobs. After adding 140,000 new residents since 2010, the region's current population is 1.7 million residents.
- ince 2012, the region's population of 25-44-year-olds increased 17.5% (compared to 14% nationally) and the percent of population with a Bachelor's degree or higher increased 10.5%.
- e region has a higher percentage of population with an Associate's degree than the US, state, or benchmark regions.
- e region has a large population of military veterans, and its veteran workforce programs are among the best in the nation. The region has the third largest military population in the US.
- ortheast Florida is home to numerous colleges and universities providing a continuous supply of new, skilled workers.
- otal employment in the industry was 25,000 in 2017.

INFRASTRUCTURE

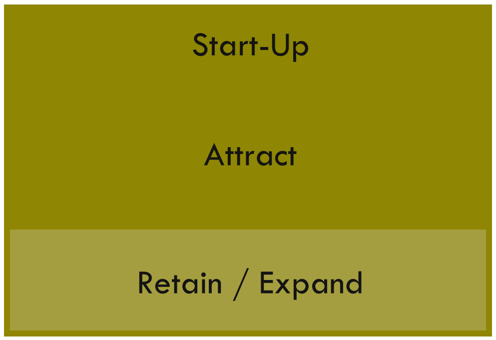
- ved by JAXPORT and the Port of Fernandina (both deep water), Jacksonville International Airport, Cecil Commerce Center, three major railroads, three interstates, and more than 100 truck terminals, Advanced Transportation companies will find the region able to offer any type of logistics infrastructure to meet their business needs.
- AXPORT has attracted 17 of the 18 largest global shipping lines and offers direct trade with Asian ports.
- ortheast Florida offers a wide diversity of locations for Advanced Transportation operations, including four certified megasites.
- e region offers same-day access to more than 94 million consumers.
- e region is an international leader in the production and export of liquified natural gas (LNG). It is a pioneer in developing LNG-powered containerships.
- e City of Jacksonville plans to repurpose its downtown passenger rail system into an autonomous vehicle track.

BUSINESS CLIMATE

- ajor Advanced Transportation & Logistics employers include CSX Corporation, UPS, Landstar System, TOTE Maritime, Suddath, Cypress Truck Lines, and Seaonus, to name a few.
- *lobal Trade Magazine* recently ranked Jacksonville the Top US Logistics Hub. JAXPORT is the #1 container port complex in Florida.
- tween 2012 and 2017, total Advanced Transportation & Logistics employment in the region rose 15%.
- orida is home to the second highest number of exporters in the US.
- AXPORT is the #2 automobile processing port in the US.
- e entire seven-county region is a designated Foreign Trade Zone.
- e overall cost of living and doing business in the region is below average. Construction, utility, and real estate costs are below most major metros.
- tween 2016-2017, the MSA experienced the third fastest job growth of all major metros in the nation.
- orida is a right-to-work state, has no corporate income tax, no state personal income tax, no property tax on inventories or goods in-transit for up to 180 days, and no sales tax on manufacturing machinery, equipment, or goods for export. CITC, QTI, and QRT incentives further offset the cost of doing business in Northeast Florida.
- n 2018, *Chief Executive* ranked Florida the #2 best state for business.

Advanced Transportation & Logistics Game Plan

APPROACH



This industry requires a more traditional approach to growth, with emphasis on business attraction. The region has robust assets for Advanced Transportation firms, but needs to intensify efforts to tell its story and connect with influencers. Existing business (and infrastructure) support is also important. With a more robust entrepreneurial ecosystem, startup supply chain IT businesses could emerge.

SUCCESS INDICATORS

- dvanced Transportation job growth
- reased % of population with technical, IT, and logistics degrees
- rease in seaport, rail, and air cargo volumes

MARKETING MIX

With an emphasis on business attraction, NEFL's marketing mix should include external marketing missions, digital ads and other media, and PR. At home, continued support for existing businesses like one-to-one meetings to understand their needs and networking companies together will be beneficial.

TARGET GEOGRAPHIES

- ortheastern US
- rope
- hina / Asia
- allahassee and Washington DC
- ortheast Florida

INDUSTRY SUPPORT

- ollowing the recommendations of the Brookings Global Cities Initiative, invest in programs that help companies in the region better understand foreign markets and increase export know-how.
- rease investment in workforce programs aimed at Advanced Transportation – Career Academies in K12 schools, technical programs in logistics, supply chain management, IT, and engineering programs.
- ourage existing companies to participate in apprenticeship programs and other involvement with educational institutions.
- omplete the harbor deepening at JAXPORT and invest in other infrastructure needed to handle post-Panamax ships.
- ontinue advocating for competitive State incentives.
- ontinue lobbying State and Federal officials for infrastructure funding.
- ampaign to raise awareness of Advanced Transportation career opportunities.

Information Technology & Innovation Overview

INDUSTRY OVERVIEW

Information Technology & Innovation broadly describes operations engaged in software production, internet services, computer systems design, data hosting, data security, and technology consulting services. Fueled by innovations in Big Data, cloud computing, cybersecurity, mobile platforms, and health IT, Information Technology employment increased three times faster than the overall job market between 2012 and 2017.

Infrastructure requirements for most niche sectors of the Information Technology industry are typically minimal, but talent availability is paramount. With Information Technology talent scarce across most of the US, companies often flock to locations featuring a university with high-quality computer science programs. The presence of a vibrant entrepreneurial scene that is well-connected and resourced is also highly attractive. A strong startup scene often attracts a high-quality workforce. Data centers are one area in which infrastructure needs are considerable. Operating and cooling data centers requires an enormous amount of energy. As such, communities with competitively priced energy and/or abundant sources of renewable energy are especially attractive.

REGIONAL PERFORMANCE

The Information Technology industry in Northeast Florida is relatively small but growing rapidly. On a per capita basis, the region is home to approximately 10% fewer Information Technology jobs relative to the US average. During the past five years, however, regional employment in the industry has grown nearly 25%. Through 2022, the industry is projected to grow twice as fast regionally as total employment in Northeast Florida. **As a target, Information Technology is embedded in every industry. Strengthening Information Technology and Innovation will benefit all other target industries.**

GLOBAL FORCES

The Information Technology industry is increasingly expanding into new markets. The rise of connected devices, cloud computing, data analytics, and the need for improved security are creating new opportunities in (and disrupting) industries such as Finance, Healthcare, and Transportation.

From automobiles to speakers to watches, a variety of consumer devices are now capable of two-way communication. **According to projections from technology firm Ericsson, there will be 29 billion connected devices worldwide in 2022**, up from 16 billion such devices in 2016. Continued advancements in connected devices promise to deliver better patient monitors, improve the safety of automobile transportation, and increase the efficiency of supply chains.

The ubiquity of connected devices has been facilitated by the rise of cloud computing, which provides off-site data management, processing, and storage. In addition to enabling a host of consumer devices, cloud computing also helps companies to quickly scale their operations based on real-time demand. The explosion of data production enabled by connected devices and cloud computing has supported continued spending on new data centers. **According to real estate firm CBRE, US data center investments in 2017 totaled $20 billion, exceeding the cumulative total of the previous three years combined.**

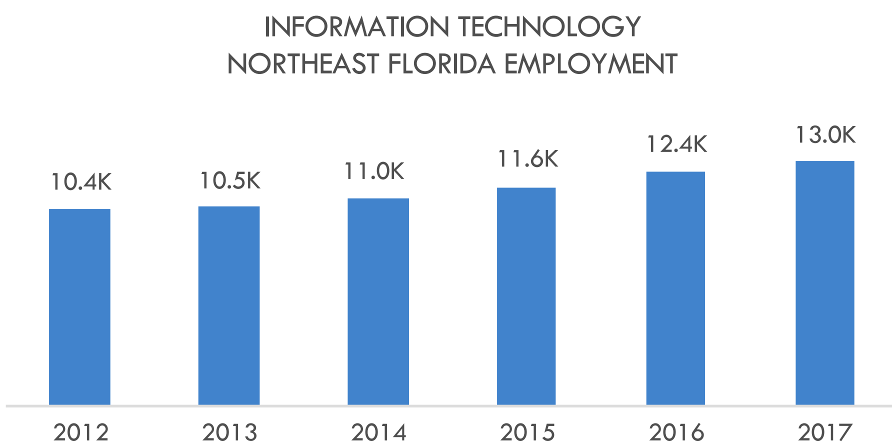
(*continued on next page*)

Information Technology & Innovation Niche Sectors

GLOBAL FORCES (continued)

Cloud computing has allowed companies to collect and store vast amounts of information. **Artificial intelligence and machine learning help firms unleash greater value from this data by employing predictive analytics to identify future outcomes.** Increased data analytical capabilities, for example, can help finance companies identify and reduce fraud. In the area of medicine, sophisticated analytic processes may increase the efficiency of pharmaceutical research, drug trials, and even medical diagnoses.

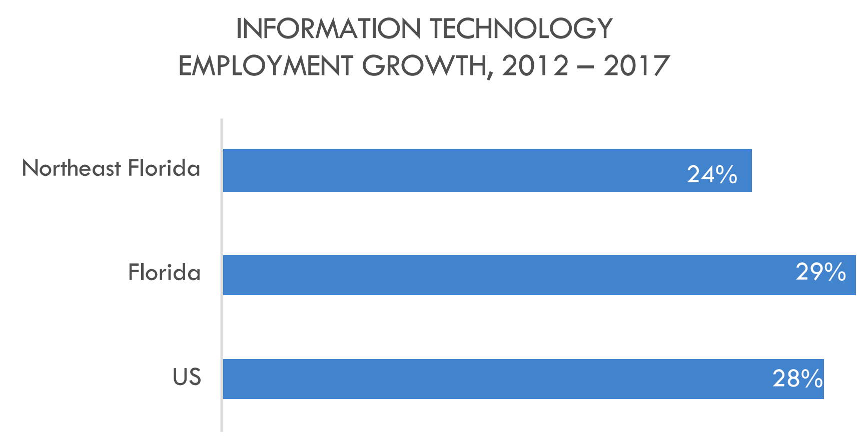
The increasingly sensitive nature of information stored on the cloud is driving another Information Technology sector — cybersecurity. **In 2017, a hack of a single company exposed the personal information of approximately half the US population.** The threats are not unique to the private sector. In 2018, a digital attack on the City of Atlanta caused havoc to online payment systems and municipal court schedules. With both governments and industry struggling to combat the constant threat of digital breaches, cybersecurity spending is projected to soar in the years ahead.



SOURCE: EMSI / Avalanche Consulting

NICHE SECTORS

Data Centers – Data Centers are facilities that handle the storage, distribution, and analysis of vast volumes of information. Data Centers are classified into one of four tiers depending on their availability of service, with the higher-tiered facilities being more reliable than those in the lower tier. Massive increases in global data production continue to fuel the growth in the demand for Data Centers, both within the US and worldwide. Given the critical functions Data Centers provide for a variety of industries, the continuity of business operations is paramount.



SOURCE: EMSI / Avalanche Consulting

Information Technology & Innovation Niche Sectors

Software – Historically, growth in the Software sector has been fueled by widespread adoption of the personal computer. Today, mobile is king. Continued growth of mobile activity in other industries such as retail and finance are expected do drive further employment gains in the years ahead. As highlighted earlier, the rise of cloud computing, artificial intelligence, and machine learning are also expected to drive growth in areas such as data analytics and cybersecurity. Specifically in Northeast Florida, the Software sector focus should be on enabling software for industry and cybersecurity versus consumer-driven app development.

Data – Continued improvements in cloud-based technologies and data analytics will transform the world into an "Internet of Everything" driven by data and the algorithms. Soon, smart infrastructure will pervade the physical world of transportation and public spaces, allowing governments and smart startups to utilize the vast data that will stream out of the movement of goods, people, and vehicles. Rapid advancements in Artificial Intelligence (AI) will make it a transformative technology that is just beginning to benefit from high-speed computing and the booming amount of data. Northeast Florida's employers in Financial Services, Healthcare, and Transportation will be increasingly data-driven, and potential new smart infrastructure across the region will be centered around data.

INFORMATION TECHNOLOGY
AVERAGE SALARY, 2017

SOURCE: EMSI / Avalanche Consulting

Information Technology & Innovation Workforce

Most of Information Technology & Innovation occupations require some form of post-secondary education. Several of the industry's most common positions, including **Applications Software Developers, Computer Systems Analysts,** and **Systems Software Developers,** typically require a Bachelor's degree.

All top 25 occupations in Northeast Florida's Information Technology industry have posted employment gains during the past five years. The fastest growing occupations include **Applications Software Developers** (19% growth), **Systems Software Developers** (16%), and **Web Developers** (16%).

The most concentrated occupations in Northeast Florida's Information Technology industry include **Database Administrators** (1.6 LQ), **Data Entry Keys** (1.6), **Customer Service Representatives** (1.6), and **Business Operations Specialists** (1.5).

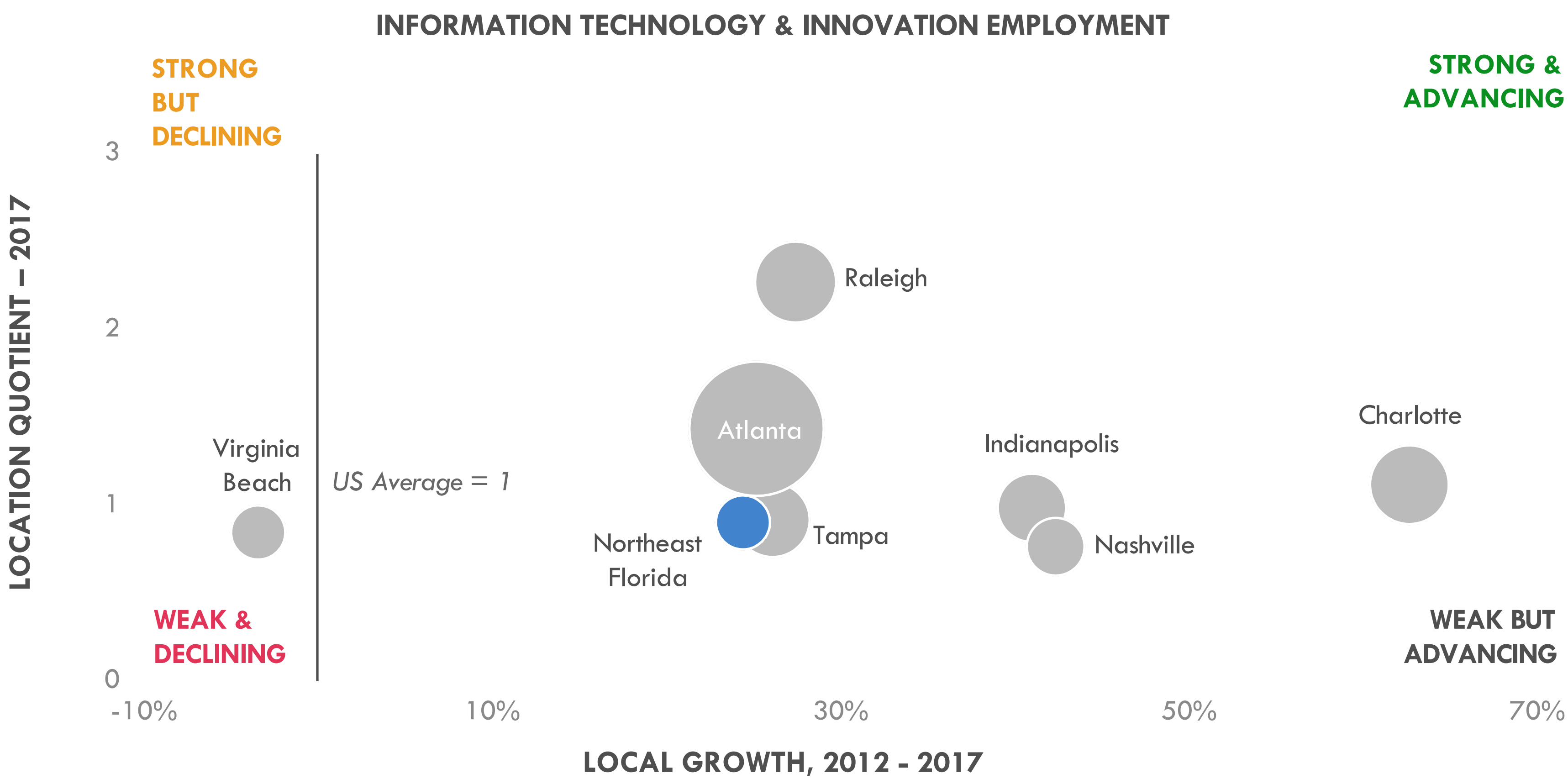
SOC Code	Occupation	% of Cluster Jobs	Typical Entry Level Education	2017 Jobs	2017 LQ	'12-'17 Net New Jobs in Cluster	'12-'17 % Growth
15-1132	Software Developers, Applications	13%	Bachelor's	1,680	0.8	590	19.0%
15-1151	Computer User Support Specialists	7%	Some college	866	0.9	276	10.6%
15-1121	Computer Systems Analysts	6%	Bachelor's	712	0.7	207	11.0%
43-4051	Customer Service Representatives	5%	High school	681	1.6	208	1.0%
15-1133	Software Developers, Systems Software	5%	Bachelor's	674	0.7	216	15.5%
41-3099	Sales Representatives, Services, All Other	5%	High school	611	1.3	193	3.1%
15-1143	Computer Network Architects	4%	Bachelor's	443	1.5	133	11.1%
15-1142	Network and Computer Systems Administrators	3%	Bachelor's	379	0.8	111	7.3%
15-1131	Computer Programmers	3%	Bachelor's	371	0.5	10	1.4%
13-1111	Management Analysts	3%	Bachelor's	349	1.3	106	2.6%
15-1134	Web Developers	3%	Associate's	339	1.4	144	15.5%
11-3021	Computer and Information Systems Managers	3%	Bachelor's	338	0.6	98	9.3%
13-1199	Business Operations Specialists, All Other	2%	Bachelor's	268	1.5	86	1.2%
41-4011	Sales Representatives, Wholesale and Manufacturing	2%	Bachelor's	247	0.8	93	7.2%
11-1021	General and Operations Managers	2%	Bachelor's	247	0.6	59	0.9%
15-1152	Computer Network Support Specialists	2%	Associate's	235	0.9	57	7.1%
15-1199	Computer Occupations, All Other	2%	Bachelor's	221	0.8	61	5.5%
15-1141	Database Administrators	2%	Bachelor's	219	1.6	79	8.5%
43-9061	Office Clerks, General	2%	High school	203	0.9	45	0.4%
13-2011	Accountants and Auditors	2%	Bachelor's	190	1.0	58	0.9%
43-6014	Secretaries and Administrative Assistants, Except Leg	1%	High school	188	1.2	52	0.4%
43-9021	Data Entry Keyers	1%	High school	182	1.6	29	1.9%
13-1161	Market Research Analysts and Marketing Specialists	1%	Bachelor's	163	0.6	51	2.9%
15-1122	Information Security Analysts	1%	Bachelor's	139	0.9	46	10.3%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1%	Some college	138	1.0	26	0.3%

Higher than average concentration of jobs (LQ) (LQ>1)
Average to slightly lower than average LQ (LQ = 0.5 - 1)
Much lower than average LQ (LQ<0.5)

SOURCE: EMSI / Avalanche Consulting

Benchmark Comparison

Information Technology & Innovation employment in Northeast Florida grew by nearly 25% between 2012 and 2017, outpacing the gains experienced by Virginia Beach (which suffered a decline in Information Technology & Innovation employment), but below gains seen across all other benchmark regions. On a per capita basis, Information Technology & Innovation employment in Northeast Florida is approximately 10% less concentrated in the region compared to the US average. Information Technology & Innovation employment in Northeast Florida is slightly more concentrated relative to Nashville and Virginia Beach, but below all other benchmarks. (Note: For an explanation of Location Quotients (LQ), please see page 51 of the Appendix.)



Regional Strengths and Sales Messages

TALENT

- e region's population and workforce growth has exceeded the national average over the past five years. The workforce has grown at a faster pace than jobs. After adding140,000 new residents since 2010, the region's current population is 1.7 million residents.
- ince 2012, the region's population of 25-44 year-olds increased 17.5% (compared to 14% nationally) and the percent of population with a Bachelor's degree or higher increased 10.5%.
- olleges and universities in the region produce more than 1,200 IT graduates each year. CBRE recently ranked Northeast Florida the fourth largest increase in tech talent growth in North America.
- ere are more than 55,000 students currently enrolled in colleges and universities in Northeast Florida.
- new Children's Museum in St. Augustine broke ground in 2018 and will focus on STEAM (Science, Technology, Engineering, Arts and Math)
- e region is home to four military bases and has the third largest military population in the US.
- e region is located no more than 1.5 hours from the University of Florida, which produces more than 12,000 graduates per year, including 1,880 in the field of Science & Engineering.
- t an average of $101,000, annual salaries for Information Technology & Innovation workers in Northeast Florida are $23,000 less than the national average.

INFRASTRUCTURE

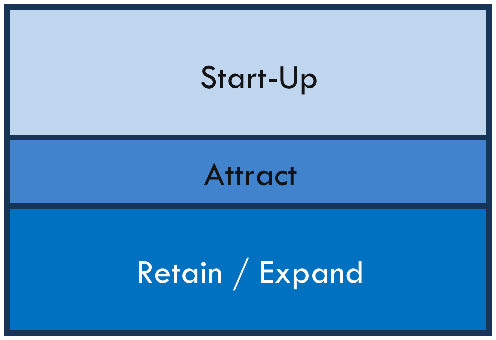
- owntown Jacksonville has a Network Access Point - JAX NAP - the only one between Atlanta and Miami and a unique asset for businesses with heavy IT needs. There are 32 countries connected via The region has 95+ non-stop flights daily. the NAP. The 240,000-square-foot facility hosts co-location data centers, network POPs, and subsea fiber providers.
- ved by JAXPORT, Jacksonville International Airport, Cecil Commerce Center, three major railroads, and three interstates, the region is a major US logistics hub.

BUSINESS CLIMATE

- e region has a diverse, established industry base and a small business community that is larger than the US average.
- e region's Information Technology & Innovation industry encompasses a diversity of sectors from software development to healthcare, logistics, e-commerce, and finance. Major IT employers include Black Knight Financial Services, Web.com, C2C Solutions, CSX Technology, Fanatics, Oracle, and randrr, to name a few. Although not categorized as IT firms, many other employers in the region have large IT-related operations.
- tween 2012 and 2017, total Information Technology & Innovation industry employment in the region increased 24.4%. The IT workforce across all industries reached 20,000 workers in 2017.
- e overall cost of living and doing business in the region is below average. Construction, utility, and real estate costs are below most major metros.
- e region's lifestyle and natural amenities are highly appealing.
- tween 2016-2017, the MSA experienced the third fastest job growth of all major metros in the nation.
- orida is a right-to-work state, has no corporate income tax, no state personal income tax, no property tax on inventories or goods in-transit for up to 180 days, and no sales tax on manufacturing machinery, equipment, or good for export. CITC, QTI, and QRT incentives further offset the cost of doing business in Northeast Florida.
- n 2018, *Chief Executive* ranked Florida the #2 best state for business.

IT and Innovation Game Plan

APPROACH

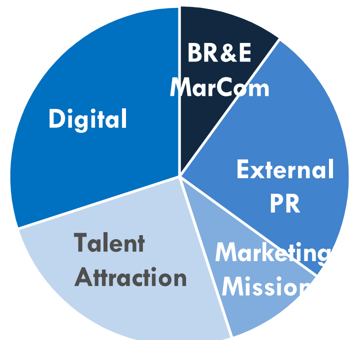


IT and Innovation growth should result from an approach that dedicates resources almost evenly to expanding existing businesses and investing in the region's entrepreneurial and innovation ecosystem. While business attraction will be a component, enriching the region's startup scene today will ultimately attract investment from IT firms in the future.

SUCCESS INDICATORS

- T industry job growth
- rease in # of micro businesses
- reased utility patents / R&D expenditures / venture capital
- reased % of population with IT or Computer Science degrees

MARKETING MIX



Increasing IT and Innovation investment in the region will require a creative digital media and PR campaign to inform the world (and people at home) that NEFL is a vibrant location for firms in the industry. The overall talent attraction campaign should include a focus on drawing IT workers, entrepreneurs, and investors into the region.

TARGET GEOGRAPHIES

- ortheastern US
- anada
- alifornia
- harlotte, Raleigh-Durham
- ortheast Florida
- ainesville, Orlando, and SE cities with large universities

INDUSTRY SUPPORT

- evelop an aligned strategy around IT and entrepreneurship.
- xpand apprenticeships for IT companies.
- aluate all IT-related military assets in the region. Strengthen programs that connect exiting military with local IT businesses and IT departments.
- est in a talent attraction campaign aimed at IT skill sets and mid-career professionals. Use video testimonials to reinforce marketing messages.
- rease investment in workforce programs producing IT certificates and degrees.
- e programming language COBOL is prevalently used by area employers. Anticipate its gradual phasing out and assist businesses with finding / producing programmers for the next generation of software.
- xpand the region's entrepreneurial ecosystem, investing in digital assets. and increasing connectivity among entrepreneurs, mentors, innovators, and investors.
- xpand the CIO Council.
- ontinue enhancing the region's quality of life, including downtown.
- rease resources for STEM² Hub and other STEM-oriented education programs.
- rease awareness of FindYourJAX.