



ST. PETERSBURG, FLORIDA
GROW SMARTER INITIATIVE
TARGET BUSINESS ANALYSIS

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OVERVIEW

The St. Petersburg Area Chamber of Commerce and the city of St. Petersburg are embarking on a comprehensive process to assess and enhance the city's competitive position to support quality, diverse economic growth now and in the future. As other cities in Florida and across the country focus increased resources and attention on growing their economies, how St. Petersburg is positioned for quality growth is a critical issue to address. Comprehensive quantitative and qualitative research will help inform the development of a unified Grow Smarter Initiative Strategy, the culmination of an eight-month process. The Strategy will include recommendations to advance economic opportunity for all St. Petersburg residents and make the city a top destination for companies and talent. The phases of the Initiative include:

COMPETITIVE ASSESSMENT

The Competitive Assessment presented a detailed examination of the city St. Petersburg's competitive position as a place to live, work, visit, and do business. Rather than simply describing data trends, the Competitive Assessment synthesized key findings from the analysis and community input framing the discussion around key "stories" and competitive issues faced by the community.

TARGET BUSINESS ANALYSIS AND MARKETING REVIEW

Using the findings from the first phase, the business sectors that most strongly align with St. Petersburg's competitive strengths are reviewed and defined. This Target Business Analysis evaluates the city's workforce, existing economic strengths, global trends, and both obvious and "aspirational" job sectors. The goal of the Target Business Analysis is to identify how to diversify and strengthen the economy through entrepreneurship, existing business expansion, and recruitment. A Marketing Review will also assess the city of St. Petersburg's principal marketing programs and tools.

GROW SMARTER INITIATIVE STRATEGY

The Strategy will be holistic and inclusive of the many components that affect St. Petersburg's ability to be a prosperous community. From business retention, expansion, and small business support to quality of life needs and educational programs that strengthen the talent pipeline, the Strategy's ultimate goal areas, objectives, and actions would build on the findings from the research.

IMPLEMENTATION PLAN

While the Strategy represents "what" St. Petersburg needs to do, the Implementation Plan determines "how" to do it. The Implementation Plan will serve as the road map for putting the Strategy into motion. The Implementation Plan outlines the activities of the Strategy's objectives on a day-by-day, month-by-month, and year-by-year basis.

INTRODUCTION

Targeting key employment sectors for growth and potential development into “clusters” of economic activity has become a nearly universal method of expanding and diversifying local economies. “Targets” represent segments of an economy where competitive advantages exist, prospects for future growth are greatest, and return on investment is likely highest. While targets are comprised of groups of categorically linked businesses strategically pursued by an economic development organization and its partners, clusters represent groups of interrelated businesses that co-locate due to “economies of scale” in multiple competitive factors. There are a variety of different catalysts that support these agglomerations, which can occur among competing or cooperative firms. A group of suppliers may choose to locate in proximity to a major manufacturer for research and development efficiencies and reduced transportation costs. Other firms may co-locate in a specific area in order to take advantage of a specialized labor pool or to be in close proximity to specific infrastructure. The advantages derived by firms from these catalysts, coupled with the network effects that often exist within clusters, often result in comparatively high potential for employment growth and wealth creation. Due to limited economic development resources, it is sensible for regions to strategically target those sectors with the greatest potential to create new jobs and raise incomes.

While not all targets will eventually become clusters, growth in these sectors will nevertheless help drive local wealth-creation. Strategically targeting these business categories helps communities take advantage of their particular strengths in existing companies, workforce capacity, research investment, infrastructure, and other resources. Due to the realities of today’s economy and constrained public and private investment budgets, it is prudent for communities to target those sectors with the greatest potential to create new jobs and raise per capita income.

This report proposes target sectors that are specific to the competitive position of the city of St. Petersburg. In keeping with the intent of the Grow Smarter process, care was taken to only focus on those employment concentrations, place-based assets, research and innovation capacity, and business climate issues specific to the city itself and not Pinellas County or the Tampa Bay region. Only in the case of workforce development did *Market Street* incorporate training capacity beyond the city’s borders. This is consistent with the reality that companies will assess a regional labor shed when determining training capacity to support locally-created positions. Consistencies between the proposed St. Petersburg targets and categories pursued at the county and regional level were only identified to communicate the potential benefits accrued from leveraging the marketing capacity of additional organizations.

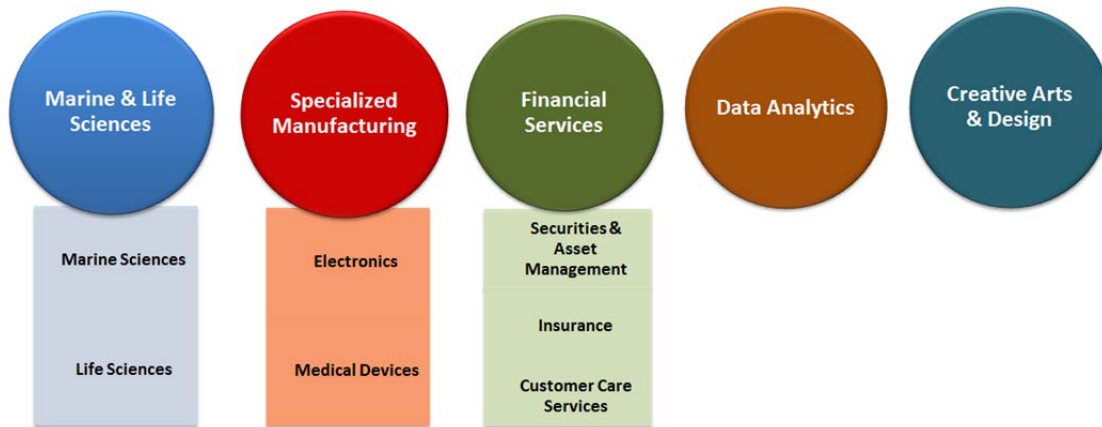
Target sectors proposed for the city of St. Petersburg emerged from the research and findings of the Competitive Assessment, public input process, as well as detailed analysis of the city’s economic and occupational structure and key competitive assets.

Key criteria in target sector identification were:

- Occupational trends and education and training capacity
- Current employment totals and concentrations for all sectors and subsectors

- Future development opportunities
- Research and commercialization capacity
- Presence of top employers capable of being “magnets” for buyers and suppliers
- Average wage data and ability to raise levels of local wealth

Based on the full breadth of analysis, *Market Street* recommends that the city of St. Petersburg pursue the following target business sectors and associated niches:



Target “**niches**” represent sub-categories that can be differentiated in terms of compositional subsectors and growth dynamics, but nevertheless share complimentary strategic concerns and competitive advantages such as talent, buyer/supplier networks, infrastructure, technologies, marketing messaging, and others, that warrant them being considered under the same overarching target category.

Marine and Life Sciences

Niches: *Marine Sciences, Life Sciences*

While the city of St. Petersburg has concentrated employment in both the marine and life sciences, it is the potential synergies between the two that can be transformative for the local economy. The environments of the ocean and the human body share certain properties that can foster research in disease resistance and treatment beneficial to the science of living systems as a whole. While the niches of Marine Science and Life Science can still grow independently, strategies to integrate the two will have the highest potential payoff for the city’s economy.

Specialized Manufacturing

Niches: *Electronics, Medical Devices*

Specialized Manufacturing features some of St. Petersburg’s most concentrated employment sectors. In, fact, production of electronics components and medical devices represents a true employment cluster for the city and features some of its most prominent and successful companies. *Market Street* combined these niches under a larger Specialized Manufacturing target to acknowledge consistencies with high-tech

production processes, transferability of certain manufacturing-based occupations and training programs, and key business climate concerns shared by production-oriented firms.

Financial Services

Niches: *Security and Asset Management, Insurance, Customer Care Services*

By far the largest target sector in terms of employment, Financial Services is another legitimate employment cluster in the city of St. Petersburg. Major headquarters firms in this sector are located throughout the city, but are primarily concentrated in north St. Petersburg. As with other targets featuring component niches, Financial Services' subsectors are differentiated development categories but feature enough similarities in workforce demands, training resources, technology needs, and business-climate dynamics to warrant inclusion under a broader umbrella.

Data Analytics

An emerging sector in the city of St. Petersburg, Data Analytics leverages non-core competencies that are prevalent in the operations of major employers such as like HSN, Valpak, and Raymond James that capture and analyze "Big Data," and also companies that produce products and processes to enable other firms to benefit from making sense of the volumes of data produced by our economy every minute, hour, and day.

Creative Arts and Design

Though St. Petersburg has a long history of strength in the arts, this target would also be an emerging sector for the city. In addition to the role that the arts play in bolstering St. Petersburg's standing as a tourist and residential destination, design can also be positioned as a growth sector if skills in multi-media can be applied to – and exposed to – new online, cellular, and digital markets.

It is important to note that this Target Business Analysis is a research document, **not** a strategy. Collectively, these targets can help St. Petersburg become more specialized in areas of existing strength, grow jobs that can support economic diversification, support tourism, and nurture and create the community's identity. This research report will analyze each target in detail and more fully explain why they merit strategic attention and what kind of strategic attention **may** be appropriate based on the research findings. Specific actions to grow the city of St. Petersburg's recommended target sectors will be included in the Grow Smarter Initiative Strategy.

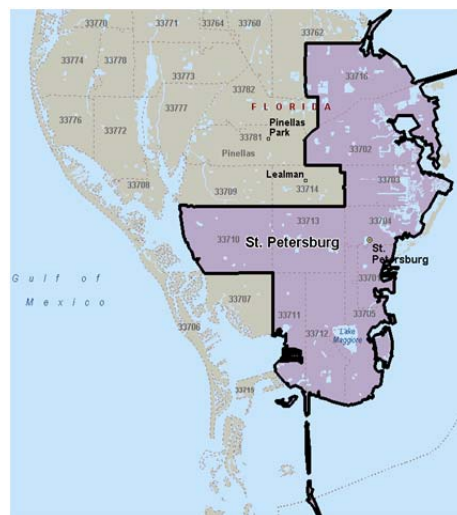
METHODOLOGY AND CONCEPTS

In the field of economic development, there are many methods used to identify targets but most are based on incomplete or strictly industry-focused (business-sector-focused) methodologies. Such approaches ignore the variety of important issues from workforce attributes to educational assets to geographic advantages, all of which are vital to businesses. *Market Street's* approach to target identification is rooted in a broader examination of the region's workforce—the occupations and types of knowledge that support the region's business activities—as opposed to strictly focusing on business sector composition and growth. It is complemented by an evaluation of the region's business climate, infrastructure, research assets, educational programs, and many other items that factor into site location decisions for specific types of business activity.

CLASSIFICATION: Our approach does not strictly define targets based on North American Industry Classification System (NAICS) codes or Standard Occupational Classification (SOC) codes. Though these codes are used to help quantify important trends and activity within each target, they should not be interpreted as rigid definitions of the composition of economic activity within a given target. Classification codes are helpful in understanding target composition and growth, but they cannot adequately capture niche technologies and opportunities that may deserve strategic attention in certain communities.

GEOGRAPHIES: The research related to business sector and occupational composition within this report is based on analysis of trends observed in the city of St. Petersburg, Florida. Because of data availability, the geography used is a proxy for the city and is defined by an aggregation of ZIP codes: 33701, 33702, 33703, 33704, 33705, 33710, 33711, 33712, 33713, and 33716. Consideration has also been given to regional assets located outside of city for specific competitive elements such as workforce development and marketing capacity. Additionally, MSA, state, and national trends were examined alongside local trends when relevant to best understand local dynamics.

MAP OF ZIP CODE AGGREGATION





Target Business Analysis

LOCATION QUOTIENTS: Location quotients (LQs) are used to measure the relative concentration of local employment in a given business sector or occupation. When applied to business sector employment, they measure the ratio of a business sector's share of total local employment to that business sector's share of total national employment. A business sector with an LQ equal to 1.0 possesses exactly the same share of total local employment as that business sector's share of national employment. When a local business sector possesses a location quotient greater than 1.0, this signals that the business sector is more heavily concentrated in the community than it is nationwide. Those business sectors with relatively large LQs are often assumed to benefit from one or more sources of competitive advantage derived from locating in the community being studied. Location quotients can also be applied to occupational employment in the same manner that they are applied to business sector employment, helping to determine which occupations and corresponding skill sets—irrespective of the business sectors that employ them—are highly concentrated in the local workforce.

INTER-INDUSTRY LINKAGES: Data covering inter-industry purchases provides tremendous insight into the degree to which firms benefit from co-location and the ability to purchase products and services from local suppliers. By examining the percentage of a sector's requirements (expenditures) that are satisfied within the community (the city of St. Petersburg), it is possible to determine areas of expenditure leakage. When firms purchase goods from suppliers outside the region, money is leaving the region. When leakage is reduced, employment and income multipliers rise. That is to say, when leakage is reduced and clustered firms are sourcing locally, the economic impact of each new job created is maximized.

DATA SOURCES: The Target Business Analysis presents a variety of data on business sector employment composition, wages, establishments, occupational composition, workforce demographics, exports, inter-industry expenditures, job openings, and degree completions. All of the aforementioned quantitative data is sourced from Economic Modeling Specialists, Inc. (EMSI), an industry-leading provider of proprietary data, aggregated from public sources such as the Census Bureau, the Bureau of Labor Statistics, the Bureau of Economic Analysis, the National Center for Education Statistics, CareerBuilder, and many others. EMSI was acquired by CareerBuilder in 2012.

ADJUSTMENT IN TOTAL EMPLOYMENT: As discussed in the Grow Smarter Initiative's Competitive Assessment, St. Petersburg's true employment situation may be mischaracterized by publicly available and proprietary data sources. The overwhelming majority of job losses experienced in St. Petersburg over a long-term historical time period were attributed to job losses among professional employer organizations (PEOs), which includes many employees are not physically located in the city. When PEOs are excluded from total employment figures, the employment situation looks much less severe and gives more accurate insight into the city's economic performance over time. Because of this, each Employment Trends table featured in this analysis include unadjusted and adjusted totals across all sectors. The adjusted total removes employment in NAICS 56133 Professional Employer Organizations.

TIERED EMPLOYMENT ESTIMATES: In the Employment Trends tables, increasing levels of specificity are sometimes shown for the same NAICS code sequence. This is done to demonstrate a finer grain of detail on St. Petersburg's specialties in this subsector. For example, in the Specialized Manufacturing target, 2,270 jobs are listed under NAICS 334 Computer & Electronic Product Manufacturing. Then, seven sub-codes of



Target Business Analysis

increasing specialization are listed below it. The employment in those seven sub-codes will add up to the 2,270 jobs of NAICS 334. This is why the “total employment” figures for each target do not add up to the sum of the employment column for all NAICS codes. Increasing levels of NAICS specificity are indicated through **indentation** of the codes.

SELECTED OCCUPATIONS: Occupations featured in the Occupation Statistics tables are not exhaustive lists of the occupations included in each target. These occupations are those that provide the skills and knowledge that drives the target and are the most prevalent within the subsectors listed in the Employment Trends tables. Additionally, all workers in the occupations featured are not necessarily employed within the target’s relevant subsectors. These tables are intended to illustrate the volume of talent available.

COMPANY REFERENCES: Throughout this document, several firms are mentioned as examples of existing firms that represent the St. Petersburg economy within target areas. A few of these firms may not be within the city limits of St. Petersburg, which prevents access to city incentives; however, they are still important to the St. Petersburg economy, taking advantage of Chamber membership benefits and employing St. Petersburg residents. It is important to note that the companies mentioned throughout this research document are but a fraction of the businesses that have made St. Petersburg home.

TARGET SECTORS

Marine and Life Sciences

Two place-based factors have made the city of St. Petersburg a competitive location for Marine and Life Sciences: its ocean and bayfront location and attractiveness as a retirement destination. While health care services have long been developed in St. Petersburg to serve its large population of elderly residents, the concentration of marine science assets is a more recent phenomenon, driven by a handful of key leaders and the growing cachet of the assets co-located in the Port of St. Petersburg. Though all counts of marine science employment in St. Petersburg are “unofficial” because the federal government does not specifically track this subsector, various experts have estimated that the city is one of the most concentrated hubs of marine science employment in the country. Though not as concentrated, life sciences is a burgeoning presence in St. Petersburg due to recent investments made by the global medical powerhouse Johns Hopkins Health Systems. St. Petersburg’s existing health care services capacity along with research and clinical trials conducted by the city’s physicians and medical experts support the growing life sciences segment of the economy.

While economic development will absolutely support growth of both niches of this target, the opportunities to find research and commercialization synergies between Marine and Life Sciences firms is the true catalytic opportunity in this target.

SUBSECTOR PERFORMANCE

Both Marine Sciences and Life Sciences are difficult to define in terms of employment because of the complications in classifications of various firms that support these niches and because **government employment is not available** at fine-grain NAICS detail for the city. Therefore, the table that follows does not include the employment of the many federal agencies located in St. Petersburg that support this target.

For this analysis, Marine Sciences includes private sectors that cover ship and boat building, the design, development, and application of engineering processes and tools, surveying and mapping, environmental research, the upkeep of electronic equipment important to researchers, such as surveying instruments and radar equipment, and organizations that promote preserving and protecting the environment and wildlife.

Life Sciences is comprised of manufacturing uncompounded medicinal chemicals and other pharmaceutical preparations, testing, medical, and diagnostic laboratories, veterinary services, scientific and technical consulting, and research and development in physical, engineering, and life sciences.

EMPLOYMENT TRENDS, MARINE AND LIFE SCIENCES TARGET

NAICS Code	Description	2013 Employment		2003-2013 Change		Earnings	
		St. Pete Jobs	Location Quotient	% Change, St. Pete	% Change, U.S.	2014 Wages, Salaries, & Proprietor Earnings	National Earnings Ratio
Total, Unadjusted Across All Sectors		103,526		-21%	4%	\$45,236	93.0%
Total, Adjusted Across All Sectors		103,075		-2%	4%	\$45,282	93.1%
Marine Sciences							
3366	Ship and Boat Building	14	0.15	(13%)	(11%)	\$38,479	65.5%
54133	Engineering Services	297	0.46	(30%)	17%	\$65,252	75.2%
54136	Geophysical Surveying and Mapping Services	28	2.11	4%	32%	\$46,705	59.2%
54137	Surveying and Mapping (except Geophysical) Services	50	1.55	(53%)	(25%)	\$41,535	82.3%
54162	Environmental Consulting Services	45	0.68	41%	25%	\$50,475	78.6%
54171	Research & Dvlpmnt - Physical, Engineering, & Life Sciences	246	0.60	76%	22%	\$53,988	47.5%
811219	Other Electronic&Precision Equip. Repair&Maintenance	135	4.70	165%	31%	\$51,911	92.9%
813312	Environment, Conservation and Wildlife Organizations	20	0.52	43%	70%	\$32,586	81.0%
Life Sciences							
325412	Pharmaceutical Preparation Manufacturing	549	3.83	(44%)	(9%)	\$63,907	56.8%
54138	Testing Laboratories	19	0.17	27%	11%	\$49,126	71.2%
54169	Other Scientific and Technical Consulting Services	270	1.56	980%	191%	\$48,456	71.5%
54171	Research & Dvlpmnt - Physical, Engineering, & Life Sciences	246	0.60	76%	22%	\$53,988	47.5%
54194	Veterinary Services	275	1.22	29%	24%	\$32,411	93.2%
62151	Medical and Diagnostic Laboratories	215	1.21	40%	34%	\$50,501	85.1%
621511	Medical Laboratories	12	0.09	NA	36%	\$71,313	120.0%
621512	Diagnostic Imaging Centers	203	3.89	40%	27%	\$49,307	80.0%
Total, All Target Subsectors		2,163	1.00	-2%	21%	\$52,976	68.6%

Source: EMSI

Note: National Earnings Ratio Color Code is based on Tampa MSA Cost of Living Index of 93.2. Green indicates that the wage is equal to or higher than the national average wage for that subsector. Yellow indicates that while the wage is lower than the national average, it is equal to or higher than 93.2 percent, which accounts for the lower cost of living in St. Petersburg. Red is used for any wage ratio less than 93.2 percent.

Note: Due to data limitations, this table provides private employment estimates only and does not include the vast government employment in St. Petersburg. As a broad reference, in 2013, there were 1,802 federal civilian employee in St. Petersburg, up by 37 percent over the ten-year period. However, this number includes every federal agency located in St. Petersburg, and not limited to those supporting the Marine Sciences.

Although local employment in Marine and Life Sciences is equal to the nation's concentration (LQ=1.0), the city of St. Petersburg has clear specializations in several subsectors, particularly those related to diagnostic, imaging, and surveying technologies. Within Marine Sciences, the city has significant employment concentrations in electronic and precision equipment repair and maintenance (LQ = 4.70), geophysical surveying and mapping services (2.11), and surveying and mapping (except geophysical) services (1.55). Within Life Sciences, St. Petersburg has concentrations in diagnostic imaging centers (LQ = 3.89), pharmaceutical preparation manufacturing (3.83), other scientific and technical consulting services (1.56), and veterinary services (1.22).

Overall, St. Petersburg firms in this target struggled over the ten-year period examined. While the Marine and Life Sciences grouping grew nationally by 21 percent over this time, St. Petersburg shed 46 net jobs, a decrease of two percent. This overall loss was driven by three main subsectors: pharmaceutical preparation manufacturing, which shed 439 jobs, engineering services, which lost 137 jobs, and surveying and mapping services, which lost 57 jobs. When examined as separated niches, Life Sciences subsectors (with the exception of the largest subsector: pharmaceutical preparation manufacturing) are growing at a

faster pace than nationwide. Marine Sciences subsectors, however, are not experiencing competitive growth.

The average employee in Marine and Life Sciences earns \$7,694 more than the city's average annual wage of \$45,282, with only four subsectors offering average annual wages lower than this figure. It is important to note, however, that St. Petersburg's average target wage is only 68.2 percent of national wages for this target. Even when St. Petersburg's cost of living is taken into account¹, average annual wages for this subsector create challenges for attracting and retaining talent who are looking for competitive compensation. These wages will potentially rise, however, as subsectors become more concentrated over time.

According to SRI International, a key research and development firm in St. Petersburg's Marine Science research cluster, there are 800 researchers, engineers, technicians, and support staff in the downtown marine science district, sometimes referred to as the Bayboro Harbor Scientific Research District as well as Marine Science District. SRI estimates that 75 percent of these workers hold advanced degrees, a third of whom have Ph.D.s. The downtown district is supported by several major agencies and entities, including SRI International, the University of South Florida College of Marine Science, the Fish and Wildlife Research Institute, the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service, the Florida Institute of Oceanography, the Tampa Bay Estuary Program, the International Ocean Institute, and the United States Geological Survey Coastal and Marine Science Center.

The Life Science niche is supported by top firms including but not limited to Draper Laboratory, InformedDNA, Cognitive Research Corporation, Bioplex Technologies, Dermazone Solutions, Catalent, and Smith & Nephew.

- *Draper Laboratory*, a not-for-profit research and development laboratory focused on the design, development, and deployment of advanced technological solutions for issues in security, space exploration, healthcare, and energy. In St. Petersburg, the firm has a 40,000 square foot Microelectronics Fabrication Center that develops Multichip Module (MCM) technology.
- *InformedDNA* touts itself as the nation's largest independent provider network of genetics specialists enabled by a comprehensive evidence-based knowledge library for genetic tests and hereditary conditions.
- *Cognitive Research Corporation* is a full-service contract research organization that specializes in Central Nervous System (CNS) product development for the pharmaceutical, nutraceutical, biotechnology and medical device companies.
- *Bioplex Technologies*, a spin-off of the University of South Florida St. Petersburg's College of Marine Science, is a provider of mobile diagnostic devices, assay chemistries & kits, samplers, sample preparation equipment and analytical equipment.

¹ In 2013, the Council for Community and Economic Research reported that the Cost of Living Index for the Tampa MSA was 93.2.

- *Dermazone Solutions, Inc.* is a life science company that through its proprietary nanotechnologies engineers all-natural particles around key active and bioactive ingredients to create topical and oral formulations.
- *Catalent's* St. Petersburg location is the company's primary softgel manufacturing facility in North America.
- *Smith & Nephew* is a global medical technology business, specializing in products related to orthopaedics reconstruction, advanced wound treatment, sports medicine, and trauma.

Despite the presence of key employers, Marine and Life Science firms do not comprise a large percentage of St. Petersburg's exports, generating only 3.4 percent of the city's exports, or \$376 million, in 2011. Most of these were comprised by the pharmaceutical preparation manufacturing subsector, with \$271.6 million in exports. This is largely due to the fact that a large segment of the Marine Sciences target niche is composed of the research organizations and government agencies referenced previously. One potential reason is that, nationwide in 2013, 30.1 percent of employees in the target work in engineering services (which is instrumental in research commercialization), while only 13.7 percent of workers in the target in St. Petersburg work in this field, down from 19.3 percent in 2003. Conversely, the Life Sciences niche is more oriented towards production than research.

As the city of St. Petersburg's R&D organizations and firms continue to develop new technologies and make new marine and life science discoveries, there will need to be a focus on technology transfer and ensuring that researchers and entrepreneurs are encouraged to collaborate to create the spin-off companies necessary to the growth of exports for the city. Strengthening this component of the target is contingent on additional focus on more formalized and intentional commercialization processes.

OCCUPATION TRENDS

This target is supported by workers with three distinct groupings of skill/training levels: bachelor's degrees and higher, associate degrees, and on the job training. The various types of engineers and scientists, the largest skill group in the target, have jobs that require at least a bachelor's degree. Some positions require higher degree attainment of a master's degree, such as hydrologists, or a doctoral degree, such as biological scientists. Technicians in this target are required to hold an associate degree, and production workers and medical assistants (veterinary assistants and phlebotomists) can receive short to moderate-term on the job training.



Target Business Analysis

OCCUPATIONAL STATISTICS, MARINE AND LIFE SCIENCES TARGET, 2013

SOC Code	Description	2013 Employment			10-Year Change			Wages and Earnings	
		St. Pete Positions	Location Quotient, St. Pete	Location Quotient, MSA	St. Pete % Change	MSA % Change	National % Change	2014 Avg. Hourly Earnings	National Earnings Ratio
Total, All Occupations		103,526			-21%	-1%	4%	\$20.01	93.6%
Marine Sciences									
11-9041	Architectural and Engineering Managers	115	0.86	0.76	(20%)	(4%)	2%	\$52.82	82.6%
11-9121	Natural Sciences Managers	11	0.32	0.26	(35%)	2%	12%	\$52.57	83.9%
17-1011	Architects, Except Landscape and Naval	94	1.26	0.94	(26%)	(21%)	(12%)	\$29.03	84.0%
17-1022	Surveyors	19	0.65	0.81	(32%)	(18%)	(3%)	\$26.30	92.5%
17-2051	Civil Engineers	76	0.40	0.86	(39%)	(5%)	10%	\$33.84	84.9%
17-2071	Electrical Engineers	175	1.54	1.31	(37%)	(8%)	1%	\$38.43	87.3%
17-2081	Environmental Engineers	29	0.82	1.25	4%	23%	16%	\$34.40	84.0%
17-2112	Industrial Engineers	237	1.52	1.05	(22%)	(2%)	(5%)	\$32.74	82.9%
17-2121	Marine Engineers and Naval Architects	<10	--	0.22	NA	(36%)	12%	--	NA
17-2141	Mechanical Engineers	125	0.69	0.71	(27%)	(5%)	(1%)	\$38.73	95.3%
17-3011	Architectural and Civil Drafters	52	0.83	0.90	(40%)	(28%)	(16%)	\$20.53	84.8%
17-3022	Civil Engineering Technicians	13	0.26	0.92	(41%)	(11%)	1%	\$20.56	86.9%
17-3023	Electrical and Electronics Engineering Technicians	157	1.54	1.04	(33%)	(16%)	(5%)	\$24.65	88.4%
17-3025	Environmental Engineering Technicians	11	0.80	1.35	(15%)	19%	19%	--	NA
17-3031	Surveying and Mapping Technicians	59	1.60	1.98	(26%)	(6%)	3%	\$17.26	84.4%
19-1022	Microbiologists	25	1.89	1.13	(26%)	18%	10%	\$25.38	72.1%
19-1031	Conservation Scientists	<10	--	0.13	NA	(30%)	3%	--	NA
19-2041	Environmental Scientists and Specialists, Including Health	40	0.66	1.04	8%	27%	16%	\$24.77	74.9%
19-2042	Geoscientists, Except Hydrologists and Geographers	<10	--	0.32	NA	(3%)	28%	--	NA
19-2043	Hydrologists	<10	--	1.53	NA	34%	18%	--	NA
19-4091	Environmental Science and Protection Technicians, Inc. Health	20	0.91	1.43	(5%)	34%	19%	\$16.50	76.7%
49-3051	Motorboat Mechanics and Service Technicians	55	3.20	2.49	(4%)	(2%)	2%	\$15.21	93.7%
49-9062	Medical Equipment Repairers	65	2.48	2.11	63%	31%	17%	\$20.58	92.7%
53-5031	Ship Engineers	<10	--	2.54	NA	(27%)	11%	--	NA
Life Sciences									
11-9111	Medical and Health Services Managers	206	0.97	0.68	1%	17%	19%	\$44.58	95.4%
17-2031	Biomedical Engineers	<10	--	0.44	NA	10%	23%	--	NA
19-1023	Zoologists and Wildlife Biologists	17	1.24	1.62	55%	34%	13%	\$21.82	72.7%
19-1029	Biological Scientists, All Other	14	0.63	0.55	(7%)	11%	11%	\$27.63	75.4%
19-1042	Medical Scientists, Except Epidemiologists	52	0.76	0.59	(12%)	15%	15%	\$38.05	90.1%
19-1099	Life Scientists, All Other	<10	--	0.54	NA	(16%)	10%	--	NA
19-2031	Chemists	59	0.98	0.75	(40%)	3%	1%	\$32.67	88.4%
19-4021	Biological Technicians	15	0.30	0.26	(40%)	(12%)	13%	\$15.74	76.9%
19-4031	Chemical Technicians	46	1.07	1.26	(37%)	15%	2%	\$18.81	84.8%
19-4099	Life, Physical, and Social Science Technicians, All Other	43	1.06	1.34	(49%)	(6%)	12%	\$18.67	83.9%
29-1131	Veterinarians	49	1.03	1.18	23%	27%	18%	\$51.63	120.9%
29-2011	Medical and Clinical Laboratory Technologists	228	2.03	1.37	7%	15%	12%	\$27.64	98.0%
29-2012	Medical and Clinical Laboratory Technicians	184	1.64	1.16	(4%)	16%	25%	\$16.84	89.1%
29-2056	Veterinary Technologists and Technicians	95	1.57	1.76	46%	50%	36%	\$14.14	93.1%
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	43	0.77	0.90	10%	15%	16%	\$10.66	89.5%
31-9097	Phlebotomists	134	1.89	1.13	(8%)	11%	18%	\$13.59	91.4%
51-9011	Chemical Equipment Operators and Tenders	65	1.66	0.88	(26%)	(4%)	(14%)	\$17.43	75.6%
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	78	0.95	0.93	(43%)	(19%)	(13%)	\$14.65	86.6%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	288	0.88	0.73	(48%)	(24%)	(7%)	\$15.01	83.2%
51-9111	Packaging and Filling Machine Operators and Tenders	207	0.80	0.91	(75%)	(39%)	(8%)	\$12.83	94.8%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

The city of St. Petersburg has experienced notable losses in these occupations. However, it is important to note that the regional talent pool should be taken into account. There are several relevant occupations with concentrations in the Tampa Bay region for the city to pull from, including environmental engineers, environmental science and protection technicians, hydrologists, and chemical technicians. With

wages lower than the national average, the focus should be on connecting St. Petersburg's talent pipeline to available Marine and Life Sciences jobs. Talent attraction is also a promising strategy with the area's quality of life assets and the human capital generated by the cluster of activity occurring downtown.

Projected Workforce Gaps: By and large, talent pipelines for Marine and Life Sciences occupations are sustainable. Nationwide, as the Baby Boomer generation retires there will be worker shortages in occupations that do not have enough younger workers to replace these impending retirees. Of all the selected Marine Sciences occupations in the Tampa Bay region, only three have a higher percentage of workers between 25 and 44 than of workers 45+: environmental engineers, microbiologists, and hydrologists. The rest are at risk of not having adequate workers to replace impending retirees and to fill demand as the sector continues to grow. In Life Sciences, those at risk are medical and health services managers, chemists, medical and clinical laboratory technologists, and medical and clinical laboratory technicians.

DEGREE PIPELINE, 2008-2012

Program Area	Pre-Bacc		Post-Bacc			Grand Total	
	Certificates	Associate	Bachelor	Certificates	Master		Doctorate
Agriculture, agriculture operations, and related sciences	63	25	0	0	0	0	88
Biological and biomedical sciences	0	0	4,111	0	723	124	4,958
Health professions and related clinical sciences	9,599	6,030	4,116	8	2,238	897	22,888
Mathematics and statistics	0	1	257	0	82	27	367
Natural resources and conservation	0	0	717	0	61	0	778
Physical sciences	0	0	445	0	160	156	761
Grand Total	9,662	6,056	9,646	8	3,264	1,204	29,840

Source: NCES

Note: These totals include degrees conferred at all public and private, non-profit colleges and universities within a 25 mile radius of St. Petersburg. For a full list of institutions, see the Competitive Assessment.

Educational Capacity: Between 2008 and 2012, there has been a gradual increase in the number of health and biological sciences degrees granted from the associate level to the doctorate level at universities within a 25 mile radius of St. Petersburg. The largest program areas represented are health professions and related clinical sciences as well as biological and biomedical sciences. While pre-baccalaureate certificates and bachelor's degrees are the most numerous levels of degrees supporting this target that are conferred in and around the city, it is interesting to note that nearly a quarter (24.3 percent) of total master's degrees and well over half (59.8 percent) of doctorate degrees conferred at the selected institutions of higher learning are in program areas that support the Marine and Life Sciences cluster. As with other targets, companies with occupational needs will be able to take advantage of the full regional workforce capacity.

City residents interested in pursuing a career in Marine and Life Sciences have access to several relevant training programs. Secondary and higher educational programs and partnerships include:

- *USFSP's College of Marine Science:* Graduate programs are offered for biological oceanography, chemical oceanography, geological oceanography, physical oceanography, and marine resource assessment. In addition, USFSP has programs in environmental science and policy, with concentrations in environmental policy, environmental science, environmental sustainability, and geospatial science.

- *USF-Tampa's College of Engineering:* Relevant programs include bachelor's, master's, and doctorate programs in civic and environmental engineering and in chemical and biomedical engineering.
- *USF-Tampa's Patel College of Global Sustainability:* The Master of Arts in Global Sustainability has four concentrations: water, entrepreneurship, sustainable tourism, and sustainable energy. For hands-on learning, students in this graduate program have access to internships across the world.
- *USF-Tampa's Center for Entrepreneurship:* Both the Tampa and St. Petersburg campuses of USF have nationally ranked and award-winning entrepreneurship programs. However, one graduate program in particular, located on the main campus, adds tremendously to the needs of the Marine and Life Sciences target: the master's program in entrepreneurship in applied technologies. This program's curriculum focuses on technology and market assessment, product commercialization, new venture formation, and new venture financing. This degree can also be pursued alongside aforementioned graduate degrees.
- *USF-Tampa/Draper Laboratory Fellow Program:* A partnership with Draper Laboratory and the University of South Florida, as well as universities in Boston, MA and Houston, TX, each year 50-60 graduate students are selected through a Research Assistant position with the school. The program covers the cost of full tuition and provides a monthly stipend while the student works in collaboration with a Draper technical staff member on a project that can serve as a thesis project and help advance Draper research.
- *St. Petersburg College:* The college offers an associate's degree in Environmental Science Technology.
- At its St. Petersburg Campus, *Pinellas Technical Education Centers (pTEC)* offers full-time and partially-online programs in Surgical Technology
- *Eckerd College:* The college offers undergraduate programs in biochemistry, geosciences, marine biology, marine chemistry, marine geology, and marine geophysics.

Since a comprehensive talent pipeline begins training its future homegrown talent early, K-12 programs that support the target are important as well. There are several means by which students are exposed to Marine Sciences at an early age and hopefully directed to further training opportunities in the region and exposed to potential future job opportunities in their hometown.

- *Lakewood High School Academy for Aquatic Management Systems and Environmental Technology:* The Pinellas County School District has instituted career academies in each of its high schools. Lakewood High School, located in St. Petersburg, has a career academy that directly supports the Marine Sciences niche. Students enrolled in this academy receive special training in ecology, environmental sciences, marine biology, agroponics, and water resource conservation. The campus includes a two-acre outdoor classroom with a natural spring-fed pond.
- *Canterbury School of Florida Marine Studies Program:* The first Cousteau Divers partner school in the world and the only one of its kind in the U.S., the St. Petersburg private school's Marine Studies program educates students ages 3 to 18 about environmental conservation. The 2,800 sq. ft. Cousteau Center for Marine Studies consists of classroom and laboratory space, providing students with interactive learning opportunities through aquarium touch tanks, a kayak fleet, and a 23-foot Sea-Pro bay boat.

PLACE-BASED ASSETS

Port of St. Petersburg: The city of St. Petersburg's geographic location on a peninsula bordering the Gulf of Mexico and Tampa Bay is a clear asset that supports its strength in Marine Sciences. The city's downtown waterfront is not only a major quality of life amenity, but also an economic driver and research site. **A reportedly underused asset along the waterfront is the Port of St. Petersburg**, which is in close proximity to the adjacent Alfred Whitted Airport and the aforementioned downtown research district, a significant competitive advantage. With the presence of SRI International's 35,000 square foot facility already at the port focused on developing technology related to ocean science, maritime industry, and port security and existing research vessels owned by the Florida Institute of Oceanography supporting numerous state and federal agencies, the Port of St. Petersburg is ripe for attracting more marine science and oceanography research vessels, an opportunity supported by Mayor Rick Kriseman. Earlier this year, city officials approved the installation of six electric power pedestals ideal for research vessels.² A challenge related to expanding a research presence at the Port of St. Petersburg is a ten-year maximum lease period for entities located in the district. Previous referendums in 2004 and 2011 to extend the lease term were defeated.

Downtown Research District: The downtown research district is another key asset for this target. **The concentration of target-related jobs and research activity in Downtown St. Petersburg is a magnet for other researchers and marine science professionals** looking for the human capital and connectivity that such a district provides. In addition to the firms and research organizations mentioned earlier, this district is also home to the University of South Florida St. Petersburg campus, Secrets of the Sea Marine Exploration Center and Aquarium (formerly the Pier Aquarium), the U.S. Coast Guard Sector St. Petersburg, USF's Center for Ocean Technology, and many others. This corridor is close in proximity to All Children's Hospital, Bayfront Family Health Center, and Kindred Hospital, creating a natural physical connection to the Life Sciences niche.

Research and specializations: **All Children's Hospital is a member of the Johns Hopkins Health System and is the first U.S. hospital outside of the Baltimore and District of Columbia region to be affiliated with John Hopkins.** In expanding the hospital's capacity, the hospital has added a pediatric residency program, which will welcome its first class in July 2014, as well as a pediatric surgical fellowship, which provides exposure to both general surgery and to specialized areas, such as oncology and congenital anomalies, which lends to research areas for doctors. Currently, the hospital conducts approximately 300 clinical research studies, over half of which are clinical trials.

The **Children's Research Institute (CRI) is located on the St. Petersburg campus of the University of South Florida**, east of All Children's Hospital, on land donated by the city of St. Petersburg. The CRI consists of 48,000 square feet that includes in excess of 35,000 square feet of laboratories, faculty offices and support space. CRI laboratories house the research programs of the holders of endowed chairs in immunology, cardiology, neonatology and other subspecialties.

² Wright, Colleen. "St. Petersburg City Council members consider plans for port." *Tampa Bay Times*. 25 April 2014. Accessed at <http://www.tampabay.com/news/localgovernment/st-petersburg-city-council-members-consider-plans-for-port/2176865>.

Bayfront Family Health has several areas of specialty within its delivery of health care services, including perinatal intensive care, heart care, orthopedic surgery, adult and pediatric trauma, neurosciences, with focus in neuro-imaging and interventional neuroradiology, and robotic surgery.

In terms of university research capacity, the University of South Florida College of Marine Science is a key asset for the city. According to the city of St. Petersburg's Economic Development Department, the College of Marine Science attracts \$27 million per year in research funding and has 13 marine science labs as well as four ocean modeling systems. In 2011, Eckerd College's Marine Science department received a National Science Foundation grant of nearly \$1 million to enhance research facilities within the Galbraith Marine Science Laboratory. The renovations supported next-generation research programs of Eckerd faculty, with enhancements to labs for the following research areas: molecular biology and biochemistry, scientific imaging and neurophysiology.

In terms of patent production, 9.7 percent of the patents, or a total of 422, originating in the Tampa MSA between 2000 and 2011 were related to drug, bio-affecting and body treating compositions (207 patents), molecular biology and microbiology (65), ships (41), animal husbandry (23), hydraulic and earth engineering (21), marine propulsion (17), analytical and immunological testing (13), chemistry of radiation imagery (10), buoys, rafts, and aquatic devices (9), chemistry of inorganic compounds (8), multicellular living organisms (7), and chemistry of hydrocarbon compounds (1). In fact, 20 percent of all radiation imagery patents and drug, bio-affecting and body treating compositions patents in the state originated in the Tampa MSA.

***Synergy between niches:* Because of the similarities between the human body's composition and characteristics of the sea and ocean, researchers are making increased connections between human physiology and disease management and marine organisms and habitats.** In addition to the potential applications of knowledge stemming from the "warm, salty, wet" similarity between the ocean and the human body, researchers have noted that the ocean remains widely untapped of the rich possibilities of plant and animal life that may be used for health purposes. Integrated research can potentially lead to the development of pharmaceuticals and other treatments. With researchers in both fields located in such close geographical proximity to each other in the downtown research district, this could be a major opportunity for a third niche in the city's Marine and Life Sciences target.

***BLUE Ocean Film Festival:* Events such as the BLUE Ocean Film Festival provide an invaluable platform to market St. Petersburg and its vast assets to large audiences.** The week-long BLUE Ocean event in November 2014 will reach approximately 20,000 filmmakers and scientists – all potential future St. Petersburg residents and workers – during its three-part program, which includes a film festival featuring finalists from all over the world, an industry conference highlighting ocean issues and underwater filmmaking technical information, and a conservation summit to share and debate various scientific issues. Economic development partners should work together to use platforms as significant as BLUE Ocean to ensure that St. Petersburg leaves an indelible impression.

STRATEGIC COMPONENTS

Economic developers can support growth in Marine and Life Sciences by focusing on both the target's two niches and also the integrated opportunities between them. As with all targeted sectors, one of the most important competitive concerns is workforce capacity. Developers can work with training providers to not only bolster existing programs but also identify gaps in the talent pipeline by focusing on graduate placement and talent retention. With so many assets in this target co-located in the same district, the developer's job becomes optimizing the infrastructure and business climate in the Port of St. Petersburg and downtown burgeoning innovation district. This includes addressing lease-length issues, available space for growth, aesthetic and walkability factors, and research and incubation capacity. Marketing will also be important to promote the opportunities of the emergent cluster and attract firms focused on living-systems research and development.

Alignment with city targets: Of the seven business clusters the city of St. Petersburg has identified as most important to the city's economy, two are aligned with the Marine and Life Sciences target: Marine and Environmental Sciences and Medical Technologies and Life Sciences. The Marine and Environmental Sciences cluster corresponds closely to the Marine Sciences niche presented in this report. The Medical Technologies component of the Medical Technologies and Life Sciences cluster syncs with the Specialized Manufacturing target, while the Life Sciences portion, which includes research, medical care specializations, and pharmaceutical production, sync with the Life Science niche.

Alignment with county targets: Pinellas County Economic Development (PCED) has six targeted industries. Its Life Sciences & Medical Technologies target is closely aligned with the Life Sciences niche of the Marine and Life Sciences target and could also be an appropriate fit for the innovation resulting from the synergies between marine science and life science research and development. According to PCED, nearly half of all life sciences companies in the Tampa metro area are located in Pinellas County.

Alignment with regional targets: It is always important to leverage existing economic development efforts when possible to reduce redundancy and to maximize local resources. **Two of the Tampa Bay Partnership's targeted business clusters overlap with the Marine and Life Sciences target:** Marine and Environmental Activities and Applied Medicine and Human Performance. The Marine and Environmental Activities cluster for the region focuses on the commercialization of research and innovation in the region, an important next step for St. Petersburg as well. Applied Medicine and Human Performance (which also aligns with the next target, Specialized Manufacturing) covers health and biosciences sectors, including biomedical research and clinical trials, which are vital to the Life Science niche in St. Petersburg.

Alignment with state targets: **Enterprise Florida, the official economic development organization for the state of Florida, has two target industries that sync with the Marine and Life Sciences cluster:** Cleantech and Life Sciences. Cleantech focuses on clean energy and environmental sustainability. Within this focus area is a niche in Water, Air, and Environment, with research in water testing, reverse osmosis and desalination, bioremediation, and environmental monitoring, which all align with St. Petersburg's Marine Sciences niche. The Life Science target stems from Florida's position as the nation's third largest pharmaceutical manufacturing market and the eighth largest biotech research and development sector.



Target Business Analysis

Specialized Manufacturing

While many laypeople think that manufacturing is disappearing as an American employment sector, the opposite has been the case since the close of the Great Recession. Rebounding from years of decline, U.S. production employment has been a bright spot in recent years as a confluence of factors including rising costs overseas, improved productivity and innovation stateside, and a growing global demand for goods has reinvigorated the national manufacturing sector. New technologies such as additive manufacturing (often known as 3-D printing) have reduced barriers to entry in manufacturing and created a brand-new entrepreneurial economy for “makers” of things big and small.

Manufacturing has long been a top employment sector in Pinellas County and St. Petersburg. Continuing local strength in production jobs is clearly demonstrated in location quotient data for the community’s most concentrated manufacturing subsectors. *Market Street* proposes that the two largest and most competitive production subsectors in St. Petersburg comprise the niches of a Specialized Manufacturing target. Electronics and Medical Devices are both legacy subsectors for the city and share needs related to production-oriented worker skill sets, competitive taxation and incentive climates, site and building needs and constraints, and potential export strategies. As with Marine and Life Sciences, the niches of Specialized Manufacturing will be developed with specific supportive actions, but strategies that can improve St. Petersburg’s position for advanced manufacturing as a whole will also be pursued. The term “specialized” is important because it acknowledges that one way U.S. manufacturers can remain competitive against lower-cost countries is by innovating and remaining ahead of the global development curve. Along the same lines, American communities can remain competitive for manufacturing jobs by focusing on the development of specialized skill sets to support this innovative, value-added production that remains ahead of the global development curve.

SUBSECTOR PERFORMANCE

St. Petersburg’s Specialized Manufacturing target is comprised of two niches: Electronics and Medical Devices. *Electronics manufacturing* covers an array of subsectors from merchant wholesalers to semiconductor machinery to various types of electronic components used to develop other products and includes Jabil, one of the city’s largest employers. *Medical Devices manufacturing* focuses on the creation of medical equipment and supplies, which has synergies with the Electronics niche because of some of the technologies leveraged to treat medical issues as well as skills sets and occupations key to both. With very strong concentrations across the board within this target and high average wages, Specialized Manufacturing is clearly a burgeoning cluster for the city of St. Petersburg. However, with sluggish growth projected nationwide for many electronics subsectors, coupled with extreme competition for medical technology manufacturing, the city will need to leverage all available regional and state resources to maximize the target’s potential growth and development.

Data show that St. Petersburg’s Specialized Manufacturing target is becoming more than a group of similar subsectors and is developing into an impactful cluster. Employment concentrations often are the principal indicator demonstrating the clustering of a local employment sector. In the city of St.

Petersburg, Specialized Manufacturing has an overall location quotient of 2.58. The Electronics niche has the highest levels of concentration compared to the nation, including bare printed circuit board manufacturing (LQ = 49.72), other electronic component manufacturing (10.79), semiconductor machinery manufacturing (7.07), printed circuit assembly manufacturing (6.07), and radio and television broadcasting and wireless communication equipment manufacturing (4.56). Within the Medical Devices niche, the sub-specialties are ophthalmic goods manufacturing (8.59) and electromedical and electrotherapeutic apparatus manufacturing (2.90). Ophthalmic goods include prescription eyeglasses, contact lenses, reading glasses, and other types of protective and magnifying eyewear. Electromedical and electrotherapeutic apparatus refers to medical electrical devices such as imaging equipment, ultrasound equipment, pacemakers, hearing aids, and the like.

EMPLOYMENT TRENDS, SPECIALIZED MANUFACTURING TARGET

NAICS Code	Description	2013 Employment		2003-2013 Change		Earnings	
		St. Pete Jobs	Location Quotient	% Change, St. Pete	% Change, U.S.	2014 Wages, Salaries, & Proprietor Earnings	National Earnings Ratio
Total, Unadjusted Across All Sectors		103,526		-21%	4%	\$45,236	93.0%
Total, Adjusted Across All Sectors		103,075		-2%	4%	\$45,282	93.1%
Electronics							
333295	Semiconductor Machinery Manufacturing	77	7.07	(44%)	(6%)	\$73,838	54.6%
334	Computer and Electronic Product Manufacturing	2,270	3.05	(12%)	(21%)	\$96,700	97.8%
33422	Radio & TV Broadcasting & Wireless Comm Equip Mfg	188	4.56	194%	(18%)	\$100,249	103.0%
33441	Semiconductor & Other Electronic Component Mfg	1,916	7.34	(13%)	(19%)	\$99,537	112.4%
334412	Bare Printed Circuit Board Manufacturing	1,172	49.72	(28%)	(49%)	\$136,766	240.5%
334417	Electronic Connector Manufacturing	35	2.73	3%	24%	\$96,079	151.8%
334418	Printed Circuit Assembly (Electronic Assembly) Mfg	225	6.07	103%	9%	\$33,928	65.6%
334419	Other Electronic Component Manufacturing	450	10.79	13%	(10%)	\$40,076	63.4%
334517	Irradiation Apparatus Manufacturing	34	3.74	NA	16%	\$91,549	90.9%
335911	Storage Battery Manufacturing	13	1.27	NA	(8%)	\$74,725	125.6%
335931	Current-Carrying Wiring Device Manufacturing	42	1.89	(37%)	(28%)	\$38,772	64.6%
4236	Electrical & Electronic Goods Merchant Wholesalers	508	2.28	(30%)	(9%)	\$64,648	81.7%
Medical Devices							
334510	Electromedical and Electrotherapeutic Apparatus Mfg	113	2.90	(59%)	2%	\$44,341	48.2%
33911	Medical Equipment and Supplies Manufacturing	260	1.19	(27%)	2%	\$56,145	86.1%
339113	Surgical Appliance and Supplies Manufacturing	41	0.59	(34%)	2%	\$45,513	65.4%
339115	Ophthalmic Goods Manufacturing	163	8.59	(33%)	(15%)	\$63,348	102.9%
339116	Dental Laboratories	51	1.44	9%	(8%)	\$42,529	114.3%
Total, All Target Subsectors		3,170	2.58	-18%	-15%	\$86,899	97.2%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

The Specialized Manufacturing target did take a hit during the recession, but losses are only slightly greater than the national average and many St. Petersburg subsectors actually outperformed their U.S. equivalent. Prior to the Great Recession (from 2003 to 2007), only four sectors experienced employment loss: bare printed circuit board manufacturing, electronic connector manufacturing, printed circuit assembly manufacturing, and ophthalmic goods manufacturing—all still very concentrated

subsectors despite losses. In 2007, several subsectors began to experience employment loss, with recovery still sluggish as sectors continue to shed jobs. However, in several subsectors, particularly radio and television broadcasting and wireless communication equipment, printed circuit assembly, other electronic components, and bare printed circuit board manufacturing, St. Petersburg outperformed the nation.

Key firms supporting this target include but are not limited to:

- *Jabil* is a well-respected major employer headquartered in St. Petersburg and is the second largest company in the Tampa Bay region. In addition to corporate functions, the global electronics manufacturing services firm also has manufacturing functions, most notably the assembly of printed circuit boards, aftermarket services, and a research and design center in the city.
- *Elreha Printed Circuits Boards*, established in St. Petersburg, is a manufacturer of printed circuit boards for automotive, commercial, and military applications.
- *Plasma-Therm* is a leading global supplier of semiconductor equipment. The firm manufactures advanced plasma processing equipment and has R&D operations.
- *Tricom Technology* develops fiber optic and networking equipment for telecommunication, industrial, and military applications.
- *Sensitive Technology* is a leader of electronics components distribution.
- *General Electric Medical Systems* has a branch in St. Petersburg that develops electromedical equipment. The global company has expertise in many areas including medical imaging, medical diagnostics, and patient monitoring systems.
- *Aurora Surgical* has connected instrument sculptors to ophthalmic surgeons to develop ophthalmic surgical instruments.
- *IcareLabs* was ranked in 2012 by Vision Monday as the fifth largest independently owned prescription eyewear manufacturer in the nation. This optical lab uses state-of-the-art technology to develop a wide range of lenses with greater levels of precision and efficiency.
- *MTS Medication Technologies*, owned by Omnicell, is headquartered in St. Petersburg, FL and is an international provider of medication adherence packaging systems related to medication dispensing and administration.

Average annual wages for Specialized Manufacturing are high compared to the citywide average wage and the national average by subsector, especially when cost of living is taken into account. Only a few subsectors have average annual wages lower than the adjusted city average of \$45,282. Because of classification issues that arise when companies are engaged in multiple business activities, some of the average wages from the previous table likely include the salaries of C-level executives. For instance, one of Jabil's main classifications is NAICS 334412 Bare Printed Circuit Board Manufacturing. Because Jabil is a headquarters, corporate employment is included along with engineering and production employment in employment and wage estimates, leading to higher averages.

As a burgeoning cluster, Specialized Manufacturing's strength is further demonstrated by its output of exports. This target generates a total of \$843 million in exports, or 7.7 percent of the city's total. The percentage of city exports generating from this target is nearly three times than the percentage of state exports generating from these subsectors, only 2.9 percent. The subsectors with the greatest volume of



Target Business Analysis

exports are bare printed circuit board manufacturing, with \$380 million in exports, and other electronic parts and equipment merchant wholesalers, with \$104 million in exports.

The St. Petersburg market leads the state in exports of two subsectors: bare printed circuit board manufacturing and semiconductor machinery manufacturing. Of the \$481 million of bare printed circuit board manufacturing product exported from the state of Florida, 78.9 percent is generated in St. Petersburg. Similarly, of the \$23.4 million of semiconductor machinery manufacturing product exported from the state of Florida, 78.6 percent originates in St. Petersburg.

OCCUPATION TRENDS

Analysis of the data in the following chart provides insight into the talent requirements of the city's Specialized Manufacturing target as well as average hourly wages for these specific occupations. A handful of occupations span both niches; this not only supports the bundling of these sub-sectors under the broader target but provides a competitive advantage by providing a larger labor pool for companies in each specialization.



Target Business Analysis

OCCUPATIONAL STATISTICS, SPECIALIZED MANUFACTURING TARGET, 2013

SOC Code	Description	2013 Employment			10-Year Change			Wages and Earnings	
		Positions	Location Quotient, St. Pete	Location Quotient, MSA	St. Pete % Change	MSA % Change	National % Change	2014 Avg. Hourly Earnings	National Earnings Ratio
Total, All Occupations		103,526			-21%	-1%	4%	\$20.01	93.6%
Applicable to both niches									
17-2071	Electrical Engineers	175	1.54	1.31	(37%)	(8%)	1%	\$38.43	87.3%
17-2112	Industrial Engineers	237	1.52	1.05	(22%)	(2%)	(5%)	\$32.74	82.9%
17-2141	Mechanical Engineers	125	0.69	0.71	(27%)	(5%)	(1%)	\$38.73	95.3%
41-4011	Sales Representatives, Wholesale&Mfg, Tech&Scientific Products	270	0.99	1.17	(13%)	2%	1%	\$37.57	91.9%
41-4012	Sales Reps, Wholesale & Mfg, Exc. Tech & Scientific Products	750	0.72	1.06	(23%)	(6%)	(2%)	\$29.13	95.5%
51-2022	Electrical and Electronic Equipment Assemblers	404	2.97	1.28	(33%)	(24%)	(15%)	\$16.42	110.3%
51-2092	Team Assemblers	665	0.92	0.84	(71%)	(44%)	(14%)	\$13.12	91.1%
51-4041	Machinists	180	0.64	0.69	(53%)	(15%)	3%	\$17.52	89.4%
Electronics									
11-3051	Industrial Production Managers	75	0.65	0.53	(27%)	(15%)	(13%)	\$46.84	100.8%
11-9041	Architectural and Engineering Managers	115	0.86	0.76	(20%)	(4%)	2%	\$52.82	82.6%
17-2072	Electronics Engineers, Except Computer	68	0.71	0.47	(30%)	(28%)	(4%)	\$39.09	85.5%
17-3012	Electrical and Electronics Drafters	29	1.41	1.34	(41%)	(15%)	(1%)	\$24.23	86.4%
17-3023	Electrical and Electronics Engineering Technicians	157	1.54	1.04	(33%)	(16%)	(5%)	\$24.65	88.4%
17-3026	Industrial Engineering Technicians	55	1.16	0.53	(25%)	(19%)	(11%)	\$19.84	77.8%
17-3029	Engineering Technicians, Except Drafters, All Other	38	0.81	0.82	(41%)	(6%)	7%	\$25.78	88.2%
47-2111	Electricians	498	1.17	0.96	(45%)	(28%)	(9%)	\$17.87	73.4%
47-3013	Helpers--Electricians	74	1.65	1.20	(37%)	(24%)	(5%)	\$12.74	92.1%
49-2092	Electric Motor, Power Tool, and Related Repairers	11	0.80	0.77	(45%)	(26%)	(11%)	\$15.69	85.4%
49-2094	Electrical & Electronics Repairers, Commercial&Industrial Equipment	52	1.11	0.99	(12%)	(5%)	(2%)	\$21.94	86.2%
49-9041	Industrial Machinery Mechanics	118	0.53	0.70	(33%)	(1%)	7%	\$18.32	78.9%
51-2021	Coil Winders, Tapers, and Finishers	28	2.76	1.49	(15%)	24%	(11%)	\$12.68	82.4%
51-2023	Electromechanical Equipment Assemblers	37	1.06	0.63	(26%)	(18%)	(12%)	\$15.53	98.0%
51-9141	Semiconductor Processors	32	2.17	0.38	(35%)	(38%)	(25%)	\$19.20	114.6%
53-7063	Machine Feeders and Offbearers	112	1.50	1.10	(50%)	(31%)	(18%)	\$15.29	110.9%
Medical Devices									
13-1023	Purchasing Agents, Except Wholesale, Retail, & Farm Products	196	0.96	0.84	(16%)	(2%)	(1%)	\$27.05	90.1%
15-1133	Software Developers, Systems Software	237	0.83	0.78	(17%)	(0%)	15%	\$37.28	76.1%
43-5071	Shipping, Receiving, and Traffic Clerks	385	0.79	0.88	(46%)	(20%)	(6%)	\$13.41	90.8%
49-9062	Medical Equipment Repairers	65	2.48	2.11	63%	31%	17%	\$20.58	92.7%
51-1011	First-Line Supervisors of Production and Operating Workers	316	0.78	0.74	(30%)	(15%)	(14%)	\$25.36	92.7%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	288	0.88	0.73	(48%)	(24%)	(7%)	\$15.01	83.2%
51-9081	Dental Laboratory Technicians	37	1.32	1.87	(27%)	8%	(1%)	\$18.86	99.3%
51-9082	Medical Appliance Technicians	<10	--	0.37	NA	(5%)	3%	--	NA
51-9083	Ophthalmic Laboratory Technicians	63	2.95	3.17	3%	21%	7%	\$16.46	114.5%
51-9111	Packaging and Filling Machine Operators and Tenders	207	0.80	0.91	(75%)	(39%)	(8%)	\$12.83	94.8%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

The city of St. Petersburg surpasses the region in concentrations of many of the relevant occupations for Specialized Manufacturing despite greater losses over time compared to national trends. These losses are partially due to effects of the Great Recession. One example is Jabil, which had plans to invest in a new headquarters and manufacturing plant before the recession but ended up laying off approximately 500 workers over a three-year period. Jabil remains a major employer, however, and has since revisited its plans for new headquarters space in St. Petersburg.

Many Specialized Manufacturing occupations offer competitive wages as compared to the city average hourly wage of \$20.01, particularly those requiring associate and bachelor's degrees or higher. Even so, certain positions offer wages lower than the city average. It is important to note, however,



Target Business Analysis

that St. Petersburg’s diverse occupational composition is an asset—workers of various skill levels have opportunities for employment within this target and companies are provided with a deep breadth of potential workers for multiple positions.

Projected Workforce Gaps: Potentially crippling workforce sustainability issues are present across-the-board for Specialized Manufacturing occupations in the Tampa Bay region. Only four targeted occupations featured in this analysis have a greater percentage of workers aged 25-44 than those aged 45+: systems software developers, helpers of electricians, electricians, and packaging and filling machine operators and tenders.

The occupations at greatest workforce sustainability risk are production positions: electromechanical equipment assemblers; coil winders, tapers, and finishers; electrical and electronic equipment assemblers; and machinists. While talent retention and connecting graduates from SPC to local employers will be important tactics to ensure that impending retirees will have replacements in the future, it is important to note that the limited local capacity for four-year training opportunities is a constraint that may possibly exacerbate worker shortages.

Educational Capacity: This target is supported by a diverse mix of occupations requiring an array of skill levels: engineers, software developers, and technical and scientific sales representatives require bachelor’s degrees or higher; drafters, technicians, and processors require associate degrees; and mechanics, machinists, and other production positions require certificates and/or provide various levels of on-the-job training.

DEGREE PIPELINE, 2008-2012

Program Area	Pre-Bacc		Post-Bacc			Grand Total	
	Certificates	Associate	Bachelor	Certificates	Master		Doctorate
Architecture and related services	43	0	0	0	188	0	231
Biological and biomedical sciences	0	0	4,111	0	723	124	4,958
Computer & information sciences and support services	433	399	912	0	69	0	1,813
Education	787	82	4,417	71	3,112	241	8,710
Engineering technologies/technicians	1,701	354	0	0	0	0	2,055
Engineering	0	0	1,920	0	1,095	232	3,247
Health professions and related clinical sciences	9,599	6,030	4,116	8	2,238	897	22,888
Mechanic and repair technologies/technicians	1,369	0	0	0	0	0	1,369
Physical sciences	0	0	445	0	160	156	761
Precision production	252	0	0	0	0	0	252
Grand Total	14,184	6,865	15,921	79	7,585	1,650	46,284

Source: NCES

Note: These totals include degrees conferred at all public and private, non-profit colleges and universities within a 25 mile radius of St. Petersburg.

While there are educational opportunities within the region to support the Specialized Manufacturing target, there is a clear lack of local degree-gaining capacity at the bachelor’s level and higher to prepare workers for the thousands of jobs in this sector in St. Petersburg. St. Petersburg College is a key asset for local training of technicians, assemblers, and other production workers.



Target Business Analysis

- *St. Petersburg College*: Students have local access to associate degree and certificate programs in drafting and design, engineering technology, technology development and management, computer programming and analysis, and orthotics and prosthetics technology, which also has a bachelor's degree program.
- At its St. Petersburg Campus, *pTEC* has a full-time program in Applied Welding Technologies.
- *USF-Tampa College of Engineering*: Still within a reasonable drive, students do have access to the bachelor's, master's, and Ph.D. programs at the main campus of the University of South Florida in the following relevant majors: computer science and engineering, electrical engineering, industrial and management systems engineering, mechanical engineering, and information technology.
- *USF-Tampa Center for Entrepreneurship*: Similar to the Marine and Life Sciences target, the master's program in entrepreneurship in applied technologies should be leveraged in connecting the dots involved in bringing innovative technologies to market. Technology and market assessment, product commercialization, new venture formation, and new venture financing are integrated in the program's curriculum. This degree can also be pursued alongside aforementioned graduate engineering degrees.

Pinellas County School District has career academies that support the Specialized Manufacturing target; however, the high schools these academies are housed in are not located in the city of St. Petersburg.

- *East Lake High School Academy of Engineering* (in Tarpon Springs): Students in this academy are introduced to engineering, aeronautical engineering, computer-integrated manufacturing, digital electronics, principles of biotechnology engineering, civil architecture, and engineering design and development.
- *Countryside High School Institute for Science, Technology, Engineering and Mathematics (ISTEM)* and *Center for Computer Technologies* (in Clearwater): The Institute for Science, Technology, Engineering, and Mathematics is a college preparatory program with a specific emphasis on research, innovation, and technology. Students learn about and apply emerging technologies, are required to complete Advanced Placement or college dual enrollment courses, and have opportunities to receive certifications in cyber security, database programming, and digital video and multimedia. The Center for Computer Technologies teaches students computer repair and hardware and software troubleshooting, and students have opportunities to receive certifications in various computer-related fields.

A new addition to the training pipeline within the Pinellas County School District is *Azalea Middle School's Middle Grades Engineering Gateway to Technology (GTT)* in St. Petersburg where students are introduced to problem-solving through the design process and provided with a solid foundation for continued science, technology, engineering, and mathematics.

PLACE-BASED ASSETS AND OPPORTUNITIES

Availability of commercial/industrial space: St. Petersburg suffers from a lack of the large-acreage sites, generally required by manufacturers. Favorable sites can be as large as several hundred acres or more, have highway access, can accommodate production buildings, approach roads, and other specific infrastructure components. Because of the shortage of available land in the city, St. Petersburg will need to take advantage of brownfield and grayfield sites and opportunities to retrofit and redevelop unused or underused existing properties to accommodate large manufacturers. However, there are also

opportunities for St. Petersburg to leverage light industrial space and mixed-use developments since many small to medium size manufacturers in this target may not need the massive space that larger manufacturers do.

Research capacity: A sizable percentage of the region's patents are related to electronics and medical devices. Between 2000 and 2011, 28.2 percent of all patents, or 1,221 total patents, produced in the Tampa MSA were related to innovation in these niche areas. The largest technology areas for patent production related to the electronics niche were electrical communications (90 patents over the 11-year period), pulse or digital communications (81), multiplex communications (67), telephonic communications (50), electrical connectors (44), electrical systems and devices (41), and semiconductor device manufacturing (32). In the area of medical devices, the largest technology classes were surgery related to radioactive substances and radiant energy waves (144), surgical instruments (103), surgical medicators and receptors (90), prosthesis (58), optics measuring and testing (39), optical systems and elements (26), and light, thermal, and electrical surgical applications (25).

Pro-business state/incentives: Analysts have found Florida to be an attractive place for manufacturers because of its favorable business tax structure and incentive programs, competitive costs, and right-to-work status. A new law, effective April 30, 2014, features the elimination of the manufacturing and equipment sales tax, a top legislative priority for Governor Rick Scott. Enterprise Florida estimates that the elimination will result in \$141 million of tax savings for the over 18,000 manufacturers in the state and will make the state more competitive when compared to other states that do not levy this tax.

STRATEGIC COMPONENTS

In what will become a recurring theme of this report and the Grow Smarter Strategy, the most impactful action economic developers can perform to support Specialized Manufacturing is to ensure that the sector's supply of trained, qualified talent is sustainable. As projected workforce gaps in this target foretell, the retirement of older workers in local production jobs will create a critical shortage of workers to support the city's Specialized Manufacturing cluster. With limited land available for new large-scale production operations, St. Petersburg's growth in this target will be concentrated in existing businesses and small-scale operations. Thus, a best-in-class business retention and expansion (BRE) program as well as support for nascent yet promising production firms will be important strategies to pursue. Likewise, exposing existing manufacturers to new markets and customers can also help drive local growth.

Alignment with city targets: The city of St. Petersburg's existing Medical Technologies and Life Sciences and Manufacturing business clusters have overlapping components with the Specialized Manufacturing target. The Medical Technologies component of the cluster corresponds with the Medical Devices niche, while the Manufacturing cluster is more expansive than the Specialized Manufacturing target but includes the development of products relevant to this target, including micro-electronics, lasers, medical devices, computer components, and printed circuit boards.

Alignment with county targets: Pinellas County Economic Development's Advanced Manufacturing target is broader than the Specialized Manufacturing target, but it includes both electronics and medical devices

as specific focus areas. Specialized Manufacturing is also aligned with the Medical Technologies component of the County's Life Sciences and Medical Technologies target. The County is an important resource for workforce development programs and financing and investment tools.

Alignment with regional targets: The Tampa Bay Partnership has identified High-Tech Electronics and Instruments as one of its four targeted business clusters. This cluster is composed of both manufacturers and research and development companies, and the cluster's three niches are defense and avionics, medical devices, and marine instruments. Businesses in St. Petersburg can join a variety of industry and professional organizations who have joined together to form the Tampa Bay Advanced Manufacturing Consortium. The region's focus on research connectivity and workforce development should be leveraged as the city works to gain a better position in both of these areas.

Alignment with state targets: Enterprise Florida has two target industries that align with St. Petersburg's Specialized Manufacturing target: Manufacturing and Life Sciences. Four subsectors important to the city's target are in Florida's list of top 20 manufacturing segments: medical equipment and supplies (second largest in terms of employment), semiconductor and electronic components (4th), electronic instruments (5th), and communications equipment (13th). Florida's Life Sciences target overlaps Manufacturing in medical device manufacturing. According to Enterprise Florida, the state of Florida has the second largest medical device manufacturing market in the country. Leveraging state resources and exposure will be important to continuing the clustering of relevant businesses.

Financial Services

Though, as the recent recession demonstrated, Financial Services is often a cyclical sector with fortunes tied to national and global economic trends, it is nevertheless a stable economic driver over the long term as consumers and businesses – who continue to grow in numbers globally – need access to credit and forms of risk mitigation (insurance). This is especially true in the city of St. Petersburg, which features one of the most concentrated Financial Services sectors in the state of Florida. Thousands of city residents are employed by local firms and are paid wages above the local average. Because, as data in this section will show, Financial Services is also a major exporter for St. Petersburg, these positions are also creating dynamic "multiplier effects" across the local economy creating even more jobs and wealth for local residents.

Benefitting from talent attraction and retention advantages inherent in St. Petersburg's high quality of life and the presence of multiple regional training institutions, Financial Services is the city's largest employment sector and has reached the critical mass needed to be categorized as a true cluster. *Market Street* has recommended that the sector be divided into three separate but related niches that engage in different business processes and require varying skill sets but share business-climate conditions.



SUBSECTOR PERFORMANCE

The Financial Services target, with its significantly high employment concentrations across nearly all subsectors, higher-than-city-average wages, and Raymond James as a magnet for talent, is a definitive cluster in St. Petersburg. The city has three distinct niches of targeted employment activity: Security and Asset Management, Insurance, and Customer Care. While engaged in different financial processes and support dynamics, the niches nevertheless are complementary, coming together to provide customers with full-service wealth management, planning, and shared-services support. Security and Asset Management encompasses the investment and commercial banking aspects of a customer's wealth portfolio, while Insurance includes products for long-term financial planning. The Customer Care niche includes financial transactions processing, customer care centers, and shared services such as sales and payment services.

EMPLOYMENT TRENDS, FINANCIAL SERVICES TARGET

NAICS Code	Description	2013 Employment		2003-2013 Change		Earnings	
		St. Pete Jobs	Location Quotient	% Change, St. Pete	% Change, U.S.	2014 Wages, Salaries, & Proprietor Earnings	National Earnings Ratio
Total, Unadjusted Across All Sectors		103,526		-21%	4%	\$45,236	93.0%
Total, Adjusted Across All Sectors		103,075		-2%	4%	\$45,282	93.1%
52	Finance and Insurance	9,183	2.16	0%	(1%)	\$73,869	82.9%
Security and Asset Management							
52211	Commercial Banking	1,072	1.18	(15%)	3%	\$51,709	77.1%
523	Securities, Commodity Contracts, & Other Financial Investments	1,550	2.41	(14%)	9%	\$123,992	67.8%
5231	Securities&Commodity Contracts Intermediation&Brokerage	966	3.09	(24%)	(9%)	\$121,451	60.1%
52311	Investment Banking and Securities Dealing	120	1.18	(48%)	(12%)	\$180,075	75.6%
52312	Securities Brokerage	846	4.39	(19%)	(7%)	\$113,400	61.0%
5239	Other Financial Investment Activities	582	1.78	10%	34%	\$128,199	77.4%
52392	Portfolio Management	347	2.62	(3%)	55%	\$170,890	78.3%
52393	Investment Advice	124	0.92	35%	42%	\$72,452	54.4%
523991	Trust, Fiduciary, and Custody Activities	60	3.79	5%	(24%)	\$66,500	65.3%
523999	Miscellaneous Financial Investment Activities	42	2.32	NA	10%	\$59,418	47.8%
Insurance							
524	Insurance Carriers and Related Activities	4,753	2.71	(3%)	4%	\$63,796	86.4%
5241	Insurance Carriers	3,035	3.45	(2%)	(5%)	\$68,555	82.6%
524113	Direct Life Insurance Carriers	1,215	6.15	(11%)	(12%)	\$67,371	72.3%
524114	Direct Health and Medical Insurance Carriers	409	1.55	(21%)	5%	\$74,543	94.8%
524126	Direct Property and Casualty Insurance Carriers	1,054	3.05	10%	(3%)	\$71,121	88.7%
524127	Direct Title Insurance Carriers	188	4.25	(13%)	(36%)	\$52,477	71.0%
524128	Other Direct Insurance (except Life, Health,&Medical) Carriers	159	16.51	512%	24%	\$55,581	91.8%
5242	Agencies, Brokerages, and Other Insurance Related Activities	1,718	1.97	(5%)	17%	\$54,956	84.4%
52421	Insurance Agencies and Brokerages	1,082	1.67	16%	14%	\$57,185	87.5%
52429	Other Insurance Related Activities	637	2.85	(27%)	26%	\$50,886	78.2%
524292	Third Party Administration of Insurance and Pension Funds	455	3.85	(33%)	32%	\$51,280	80.7%
Customer Care							
52232	Financial Transactions Processing, Reserve,& Clearinghouse Activities	1,367	16.29	169%	43%	\$62,107	83.8%
54161	Management Consulting Services	1,103	1.45	44%	42%	\$55,248	70.5%
541611	Administrative Mgmt & General Mgmt Consulting Svcs	631	1.66	34%	49%	\$57,285	65.5%
551114	Corporate, Subsidiary, and Regional Managing Offices	3,021	2.21	7%	26%	\$77,743	71.5%
5611	Office Administrative Services	451	1.42	57%	47%	\$50,795	64.5%
5614	Business Support Services	276	0.43	(63%)	12%	\$31,232	84.4%
56142	Telephone Call Centers	135	1.41	(70%)	33%	\$28,094	88.0%
Total, All Target Subsectors		14,034	1.92	2%	9%	\$71,738	82.9%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

Employment in the finance and insurance sectors (NAICS 52) is nearly twice as concentrated in the St. Petersburg economy as the average American community (LQ=2.16). By comparison, Mecklenburg County, North Carolina – home to Charlotte, a community that is widely considered the financial capital of the South – possesses a location quotient of 2.11. This underscores the degree to which St. Petersburg is reliant on Financial Services as an economic engine. The most concentrated Financial Services sectors in the city are other direct insurance (LQ = 16.51), financial transactions processing, reserve, and clearinghouse activities (16.29), direct life insurance carriers (6.15), securities brokerage (4.39), third party administration

of insurance and pension funds (3.85), trust, fiduciary, and custody activities (3.79), securities, commodity contracts, intermediation, and brokerage (3.09), and direct property and casualty insurance carriers (3.05).

Financial Services is the source of thousands of high-paying local jobs. Average annual wages are much higher the city average. However, across the board, even when cost of living (93.2) is considered, these wages are much lower than the national average—as low as 54.4 percent of the U.S. figure. This could present a challenge in terms of both talent retention and attraction. While St. Petersburg has a highly regarded quality of life and a lower cost of living, wages can still be a major consideration for workers, who have become increasingly more mobile.

The Great Recession had significant adverse effects on financial services-related sectors nationwide.

From 2007 to 2009, the nation lost six percent of its Finance and Insurance jobs (NAICS 52), not including the Customer Care subsectors, which performed well during the recession. Subsectors affected most severely nationwide were direct title insurance carriers (a loss of 31 percent between 2007 and 2009), trust, fiduciary, and custody activities (-17 percent), and investment banking and securities dealing (-15 percent).

In St. Petersburg, employment losses were slightly more pronounced, with an eight percent loss of jobs in Finance and Insurance jobs between 2007 and 2009 along with three percent of Customer Care jobs. Finance and Insurance subsectors most adversely impacted include miscellaneous financial investment activities (a loss of 20 percent in the recessionary years) and third party administration of insurance and pension funds (-16 percent). It is interesting to note that while St. Petersburg did take a harder hit overall in Finance and Insurance employment, these were concentrated in the aforementioned subsectors. The remaining local subsectors outperformed the nation during the recession, likely buffered by the large presence of headquarters firms.

RECESSIONARY EMPLOYMENT TRENDS, FINANCIAL SERVICES TARGET

NAICS Code	Description	Recession (2007-2009)		Post-Recession (2009-2013)	
		St. Pete % Change	National % Change	St. Pete % Change	National % Change
Total, Unadjusted		-13%	-5%	-6%	3%
Total, Adjusted		-7%	-4%	1%	3%
52	Finance and Insurance	(8%)	(6%)	(0.2%)	2%
Security and Asset Management					
52211	Commercial Banking	(4%)	(3%)	(8%)	0%
523	Securities, Commodity Contracts, & Other Financial Investments	(4%)	(6%)	(8%)	2%
5231	Securities&Commodity Contracts Intermediation&Brokerage	(9%)	(9%)	(8%)	(6%)
52311	Investment Banking and Securities Dealing	(11%)	(15%)	(6%)	(10%)
52312	Securities Brokerage	(9%)	(6%)	(8%)	(5%)
5239	Other Financial Investment Activities	6%	(2%)	(9%)	12%
52392	Portfolio Management	(10%)	(0%)	(3%)	17%
52393	Investment Advice	73%	(1%)	(36%)	15%
523991	Trust, Fiduciary, and Custody Activities	9%	(17%)	3%	(1%)
523999	Miscellaneous Financial Investment Activities	(20%)	6%	250%	2%
Insurance					
524	Insurance Carriers and Related Activities	(6%)	(2%)	8%	5%
5241	Insurance Carriers	(6%)	(2%)	25%	(0%)
524113	Direct Life Insurance Carriers	(2%)	(2%)	4%	(5%)
524114	Direct Health and Medical Insurance Carriers	65%	3%	349%	0%
524126	Direct Property and Casualty Insurance Carriers	(12%)	(2%)	10%	1%
524127	Direct Title Insurance Carriers	(10%)	(31%)	4%	8%
524128	Other Direct Insurance (except Life, Health,&Medical) Carriers	NA	(2%)	NA	8%
5242	Agencies, Brokerages, and Other Insurance Related Activities	(7%)	(2%)	(14%)	12%
52421	Insurance Agencies and Brokerages	(3%)	(3%)	(1%)	11%
52429	Other Insurance Related Activities	(12%)	0%	(29%)	15%
524292	Third Party Administration of Insurance and Pension Funds	(16%)	2%	(38%)	18%
Customer Care					
52232	Financial Transactions Processing, Reserve,&Clearinghouse Activities	14%	0%	(10%)	10%
54161	Management Consulting Services	(21%)	3%	23%	13%
541611	Administrative Mgmt & General Mgmt Consulting Svcs	(21%)	4%	18%	13%
551114	Corporate, Subsidiary, and Regional Managing Offices	0%	1%	17%	12%
5611	Office Administrative Services	(10%)	2%	(17%)	12%
5614	Business Support Services	(19%)	1%	(5%)	3%
56142	Telephone Call Centers	(29%)	5%	22%	10%
Target Total		-9%	-3%	4%	6%

Source: EMSI

Each Financial Services niche is supported by numerous major employers. The following list represents only a fraction of the target's firms in St. Petersburg.

- *Raymond James Financial* is not only a top employer in the Security and Asset Management niche include but also a top firm in St. Petersburg as well as the Tampa Bay region. Headquartered in St. Petersburg, the financial services firm has a major presence all over the world. Raymond James is a leader in financial planning, wealth management, and investment banking, and it also contributes to the Customer Care niche.



Target Business Analysis

- *Transamerica* is headquartered in St. Petersburg and has subsidiary entities that support all three niches. A national company, Transamerica provides investment services and insurance products to its more than 19.5 million customers.
- *Franklin Templeton Investments* has extensive presence globally with offices in 35 countries. The investment firm serves both individual customers as well as firms and other institutions.
- *Castle Key Insurance Company* and *Castle Key Indemnity Company* are both subsidiaries of Allstate and are among the largest property insurers in the country. Both have major offices in St. Petersburg.
- In 2013, *American Strategic Insurance*, also a property and casualty insurer, opened a new headquarters location in the city as a component of a 13-acre, \$42 million project. Several insurance companies in the city of St. Petersburg operate processing centers, which also contribute to the Customer Care niche.

Although the firms of the first two niches support the Customer Care subsector as well, the city of St. Petersburg features employers who focus specifically on financial transactions processing, shared services, and other forms of customer interaction and assistance.

- One such employer is *PSCU*, which provides traditional and online financial services to credit unions. PSCU is headquartered in St. Petersburg and operates one of its four Contact Centers in the city, performing 24/7/365 member servicing, sales, lending, collections, and cardholder support.
- *FIS* has a regional e-banking and e-payments facility and a print and mail processing center for customer communications in St. Petersburg. FIS is the result of the 2006 merger between the then-named firm Fidelity Information Services and the St. Petersburg-based Cetergy, which specialized in services such as loyalty programs, electronic bill payment services, stored-value cards and processing, and other functions. FIS, having gained these specialties, is now a leading firm in financial services technology.

Although exports are generally thought of as tangible goods and products, services can be exported as well, as is the case for St. Petersburg's Finance and Insurance target, a major exporter for the city.

An example of service exports is a St. Petersburg company providing underwriting and actuarial services, account management, or collection management to a company in another state. In 2011, the Financial Services target in the city of St. Petersburg generated \$2.2 billion in exports, the largest private-sector export sector in the city, even greater than manufacturing (\$1.5 billion). This further supports the notion that Financial Services is a solid cluster in St. Petersburg. Leading subsectors for exports encompass all three niches: corporate, subsidiary, and regional managing offices (\$395 million), financial transactions processing, reserve, and clearinghouse activities (\$382 million), direct life insurance carriers (\$247 million), portfolio management (\$171 million), securities brokerage (\$164 million), direct property and casualty insurance carriers (\$131 million), and commercial banking (\$97.7 million).

OCCUPATION TRENDS

Across all three Financial Services niches, there is a prevalence of occupations that require at least a four-year degree in business, management, or IT-related majors. The Financial Services target is primarily a knowledge-based economic driver, and firms need talent with a mastery of focused subject matter, communication skills, a penchant to solve problems, the ability to work well with others, attention

to detail, and leadership skills. These intangible soft skills make the workforce even more important to the success of Financial Services.

Despite losses over the ten-year period examined, Financial Services skill specializations in the city of St. Petersburg have become increasingly concentrated. For example, in 2003, St. Petersburg's insurance claims and policy processing clerks had a location quotient of 2.01; by 2013, that number increased to 2.38. These increasing concentrations in occupations are further evidence of the fact that St. Petersburg is home to several large Financial Services headquarters that buttress the city somewhat against large-scale declines in select subsectors.

OCCUPATIONAL STATISTICS, FINANCIAL SERVICES TARGET, 2013

SOC Code	Description	2013 Employment			10-Year Change			Wages and Earnings	
		Jobs	Location Quotient, St. Pete	Location Quotient, MSA	St. Pete % Change	MSA % Change	National % Change	2014 Avg. Hourly Earnings	National Earnings Ratio
Total, All Occupations		103,526			-21%	-1%	4%	\$20.01	93.6%
Security and Asset Management									
41-3031	Securities, Commodities, and Financial Services Sales Agents	525	2.08	1.14	(15%)	(5%)	(4%)	\$38.20	81.8%
11-3031	Financial Managers	372	1.04	0.86	(12%)	0%	2%	\$54.89	94.1%
13-2052	Personal Financial Advisors	356	2.26	1.16	(1%)	7%	13%	\$40.43	98.0%
13-2051	Financial Analysts	266	1.52	1.03	(9%)	5%	7%	\$33.76	79.2%
13-2099	Financial Specialists, All Other	149	1.38	1.18	3%	8%	5%	\$31.54	98.8%
43-4011	Brokerage Clerks	147	3.54	1.55	(24%)	(7%)	(8%)	\$19.80	92.8%
13-2061	Financial Examiners	28	1.36	1.06	8%	8%	3%	\$43.71	108.0%
Insurance									
41-3021	Insurance Sales Agents	1,106	2.27	1.48	20%	28%	23%	\$28.82	99.1%
13-1031	Claims Adjusters, Examiners, and Investigators	723	3.73	2.63	(2%)	15%	0%	\$25.38	86.5%
43-9041	Insurance Claims and Policy Processing Clerks	383	2.38	1.51	(10%)	6%	0%	\$14.57	81.2%
13-2053	Insurance Underwriters	227	3.54	2.25	(5%)	(5%)	(13%)	\$28.06	84.3%
13-1051	Cost Estimators	118	0.80	1.06	(19%)	(12%)	(8%)	\$24.88	83.0%
13-1032	Insurance Appraisers, Auto Damage	27	3.03	2.05	(7%)	(4%)	(7%)	\$27.18	94.7%
Customer Care									
43-4051	Customer Service Representatives	2,986	1.81	1.76	(26%)	2%	4%	\$14.09	88.4%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,427	1.13	1.09	(16%)	1%	3%	\$15.21	86.5%
43-4171	Receptionists and Information Clerks	1,182	1.65	1.33	(14%)	5%	8%	\$12.44	95.1%
13-1199	Business Operations Specialists, All Other	958	1.42	1.28	(7%)	10%	8%	\$29.32	86.5%
43-3011	Bill and Account Collectors	526	1.90	2.02	(9%)	(1%)	2%	\$15.11	91.5%
43-3021	Billing and Posting Clerks	401	1.12	0.91	(6%)	10%	11%	\$15.13	90.7%
13-2072	Loan Officers	356	1.70	1.71	12%	(9%)	(8%)	\$30.69	91.0%
43-4131	Loan Interviewers and Clerks	212	1.52	1.61	(4%)	(13%)	(7%)	\$16.43	94.2%
43-4199	Information and Record Clerks, All Other	189	1.37	1.19	2%	4%	2%	\$16.97	93.5%
13-1041	Compliance Officers	156	0.95	0.92	(7%)	10%	8%	\$27.07	86.7%
11-3011	Administrative Services Managers	155	0.81	0.75	(15%)	1%	8%	\$46.81	109.9%
15-2031	Operations Research Analysts	121	2.31	1.86	14%	27%	23%	\$25.42	66.2%
43-4041	Credit Authorizers, Checkers, and Clerks	96	2.67	2.57	3%	(12%)	(7%)	\$15.59	90.9%
13-2041	Credit Analysts	90	2.07	1.83	10%	(5%)	0%	\$26.13	78.2%
43-3099	Financial Clerks, All Other	89	3.07	2.86	(3%)	4%	(3%)	\$17.96	94.3%
13-2071	Credit Counselors	46	2.33	1.89	77%	5%	16%	\$20.67	98.6%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

A phenomenon seen across targets in St. Petersburg, Financial Services workers earn hourly wages much higher than the city average hourly wage of \$20.01 but significantly lower than the national wage. There is wage variation among the Financial Services occupational niches, largely because of the



Target Business Analysis

difference in degree-attainment necessary for employment. Both the Security and Asset Management and Insurance niches legally require professional certifications for employment, in addition to a college degree. While lower-paying Customer Care positions require less training, they still provide solid opportunities for entry-level employment.

Consistent with employment trends by subsector, Financial Services occupations experienced significant losses during and since the Great Recession. Occupations in all three niches experienced greater losses than the national averages. However, some St. Petersburg occupations that have made rebounds since the end of the recession at a faster pace than the nation. These include: financial examiners, insurance claims and policy processing clerks, insurance underwriters, information and record clerks, and credit counselors.

Projected Workforce Gaps: Contrary to trends in Marine and Life Sciences and Specialized Manufacturing, the regional pipeline for Financial Services positions is relatively sustainable. Areas of risk are primarily in the Customer Care niche. Most at risk are administrative service managers, bookkeeping, accounting, and auditing clerks, compliance officers, and operations research analysts. In the Insurance niche, 68 percent of cost estimators are 45 and up, and 52.3 percent of insurance sales agents are in this older age group. The only occupation in the Security and Asset Management niche at risk of shortages is financial examiners.

DEGREE PIPELINE, 2008-2012

Program Area	Pre-Bacc		Post-Bacc				Grand Total
	Certificates	Associate	Bachelor	Certificates	Master	Doctorate	
Business, management, marketing, and related support svcs	1,865	723	11,275	30	2,965	40	16,898
Computer and information sciences and support services	433	399	912	0	69	0	1,813
Mathematics and statistics	0	1	257	0	82	27	367
Grand Total	2,298	1,123	12,444	30	3,116	67	19,078

Source: NCES

Note: These totals include degrees conferred at all public and private, non-profit colleges and universities within a 25 mile radius of St. Petersburg.

Because the Financial Services target relies on so many occupations that require college training, it is important to evaluate higher educational capacity in and around the city of St. Petersburg. **A quarter of the bachelor's degrees conferred and 23.2 percent of the master's degrees awarded at higher education institutions within 25 miles of St. Petersburg are in the three fields of study directly related to the Financial Services target.** Business and management degrees, especially those with specializations in finance, are clear needs for workers in this target. Computer and information sciences and support services degrees support the Customer Care niche, which includes shared services that require the ability to manage services across multiple sites. Mathematics and statistics majors may choose careers in actuarial science, a key area of expertise within insurance companies.

There are several business and finance-related associate, bachelor, and master's degree programs within driving distance of the city. **The main sources of degree attainment are as follows.**

- *The University of South Florida St. Petersburg* offers undergraduate degree programs in several majors relevant to Financial Services: accounting, business economics, finance, general business administration, global business, management, and management information systems. It also offers an MBA program with several options: full-time, part-time, global, and CPA/MBA. The program ranks #61 in the Aspen Institute's Beyond Grey Pinstripes list of Top 100 MBA Programs, which evaluates coursework, research published by faculty, and activities that prepare graduates for social, ethical, and environmental stewardship.
- *The University of South Florida's main campus in Tampa* has several undergraduate degree programs that add to the talent pipeline for Financial Services. It is a key asset in terms of graduate program capacity for St. Petersburg, offering an MBA program, Master of Accountancy, Master of Science in Finance, Master of Science in Information Systems, and Master of Science in Management. In 2013, *Bloomberg Businessweek* ranked USF's part-time MBA 36th in the nation of 78 schools and 1st among Florida's state universities. In 2012, *Public Accounting Report* ranked the USF School of Accountancy's undergraduate program 35th in the nation and its master's program ranked 41st.
- At its St. Petersburg campus, *pTEC* offers partially-online programs in Accounting Operations, Administrative Office Specialist, Applied Information Technology, and Customer Assistance Technology.
- *Eckerd College* has undergraduate programs in business administration, international business, management, mathematics, and economics.
- *St. Petersburg College* offers associate degrees in business administration, insurance services, and computer networking and certificate programs in several business and computer and information technology areas, including accounting applications, business administration, computer support, and server administration.

At the high school level, Pinellas County has two career academies, both within Northeast High School in St. Petersburg, that expose students to Financial Services-related subjects and prepare them for higher education. The *Academy of Finance* is a college preparation program with required coursework in computer science, economics, finance, accounting, banking, and financial planning. The academy has a partnership with Achieva Credit Union, which sponsors a credit union on campus called the Viking Branch. The Viking Branch is completely operated by students and is opened through the academic year. The *Academy of Information Technology* focuses on training students in technical support, networking, databases, programming, web design, and multimedia. Students in this academy are mentored by employees of local high-tech companies and have access to hands-on learning opportunities, including labs, field trips, job shadowing, and a paid internship.

PLACE-BASED ASSETS AND OPPORTUNITIES

Availability of Class A office space/rents: The St. Petersburg market has competitive rents as well as more available space downtown compared to the Tampa Central Business District. According to Colliers International, in the fourth quarter of 2013, average rent per square foot for Class A office space in the Tampa CBD was \$23.94, and the vacancy rate was 12.7 percent. In the St. Petersburg CBD, average rent per square foot was slightly lower at \$23.36, with a much higher vacancy rate of 19.2 percent. In the Gateway District, a major employment center that includes parts of St. Petersburg, Pinellas Park, and unincorporated Pinellas County, the average rent per square foot for Class A office space was \$21.15. The

vacancy rate in this area, however, is very low, at 7.6 percent. Class B and C space in this area of town has a vacancy rate of 21.5 percent.

Redevelopment of various areas is a major strategic opportunity for St. Petersburg, including the repurposing of shuttered campuses. The Gateway District is an important area because of its access to all parts of the Tampa Bay region as well as both regional passenger airports. According to Pinellas County Economic Development, the Gateway District is home to 60,000 employees and 2,700 businesses, including Financial Services and high-tech firms. The Carillon Office Park is at the center of Gateway. The county is currently considering relocating the publicly-owned Airco Golf Course within the office park and converting the land to a Class A business park, creating more space for the expansion of existing companies and to assist in attracting new companies.

Executive housing: Another redevelopment opportunity area for the city of St. Petersburg is in its housing stock. As noted in the Grow Smarter Initiative's Competitive Assessment, housing is a major challenge in the city. While downtown St. Petersburg is developing more condos and apartments, which will be attractive to executives, those seeking detaching housing do not have many options. Because building major high-end housing subdivisions is not a viable option in St. Petersburg because of its lack of available greenfield land, the revitalization and renovation of existing homes with undesirable floor plans is a recommended course of action.

Quality of life: Business school graduates are typically one of the largest classes to emerge from U.S. universities. **Not only because it has such strength in Financial Services, but also because of its quality of life advantages, St. Petersburg is well positioned to attract and retain talent in this sector.** The city has nice weather with approximately 248 sunny days, compared to 205 in the average U.S. community. The waterfront is key asset and provides several recreational opportunities. The city's art scene is growing, and the self-proclaimed "City of the Arts" has many offerings for residents and visitors alike. These assets make St. Petersburg especially competitive for the early-career young professional (YP) workforce will skill sets coveted by Financial Services firms.

Airport capacity: Though not a major domestic and international passenger hub like Atlanta or Dallas Fort-Worth, Tampa Bay nevertheless has a competitive selection of direct flights versus most non-hub regions. Professionals have access to commercial flights from two airports: St. Petersburg-Clearwater International Airport and Tampa International Airport, which is approximately 20 miles from the city center. St. Petersburg-Clearwater International Airport has 32 nonstop domestic destinations through Allegiant Air and Vision Airlines (with service to Gulfport-Biloxi, MS only) and nonstop international service to Toronto and Halifax through Sunwing Airlines. The Tampa International Airport is served by most major airlines with a total presence of 19 mainline carriers. Together, these airlines provide nonstop services to over 70 domestic and international destinations. According to the U.S. Bureau of Transportation Statistics, the average domestic air fare at Tampa International Airport (\$328 in 2013) is competitive when compared to the national average (\$381), a cost savings for firms. This figure is not available for the St. Petersburg-Clearwater International Airport.



Broadband capacity: In 2011, AT&T began a series of network upgrades in ten communities in the Tampa Bay Region.³ These upgrades improve voice performance and data connectivity and are a component of the company's plan to make a \$20 billion investment in its wireless and wired networks. The project focuses on supporting and managing mobile broadband growth as a result of the increasing prevalence of smartphones, undoubtedly important tools for business professionals, and the goals are to improve network performance, increase speed, and provide more ways to stay connected. In St. Petersburg, to date, five new cell sites have been built, and five broadband speed upgrades, 52 capacity upgrades, and 56 network connection upgrades have been completed.

STRATEGIC COMPONENTS

When a sector is already reach cluster status, like Financial Services has in St. Petersburg, certain growth dynamics are self-sustaining simply by virtue of economies of scale. However, that does not mean there is not a role to play by economic development in ensuring that the city's Financial Services firms remain competitive. There is also a tendency for many economic development practitioners and communities to overlook the major employers that have been entrenched in their community for so long. **Business retention and expansion efforts are key to growing this target.** Understanding what can make large firms like Raymond James more competitive in St. Petersburg and how the community and region at large can help them expand within the city can prevent a major employer from choosing another location for the expansion of a specific business unit. In addition to sustaining the training pipeline for these positions, developers can ensure that business costs remain low, supply of Class-A office can consistently accommodate expansions, and relationships among and between firms are robust and lead to business generation and identification of new customer bases and markets. Working to secure additional foreign and domestic non-stop destinations from Tampa Bay airports (similar to the recently added direct flight to Seattle) is another impactful strategy.

Alignment with city targets: The city of St. Petersburg has identified Financial Services as one of its top business clusters because of its position as the second top performing cluster in the city. This cluster corresponds directly with the target as described in this research report.

Alignment with county targets: Pinellas County Economic Development targets Business & Financial Services with a focus on financial technology and support firms. This countywide target is an amalgamation of this report's Financial Services and Data Analytics target recommendations.

Alignment with regional targets: Tampa Bay Partnership's Business, Financial & Data Services business cluster is centered around data centers, disaster recovery, and data management, which is most closely aligned with St. Petersburg's Data Analytics target, business process outsourcing and shared services, and financial transactions processing. Leveraging regional initiatives, such as marketing and business retention, will be vital to avoiding redundancy and maximizing local investments.

³ Rosenfield, Jeff. "AT&T Wireless Network Upgrades to Benefit St. Pete Users." *St. Pete Patch*. Accessed at <http://stpete.patch.com/groups/business-news/p/att-wireless-network-upgrades-to-benefit-st-pete-users>.

Alignment with state targets: Florida is an international banking center that boasts the 3rd largest finance and insurance industry in the nation. Enterprise Florida has focused on Financial and Professional Services as one of its nine target business areas. Over 200 commercial banks with \$119 billion in assets operate in the state, and over 500 insurance companies are located in the state along with close to 2,200 regulated insurance companies conducting business. The state is also experiencing growth in its private equity cluster.

Data Analytics

With streaming data from social media, the ease and speed of processing offered by cloud computing, and the global proliferation of online marketplaces, the amount of digital information produced globally every day is staggering. Firms that can effectively position clients to capitalize on that data to increase their sales by targeting their highest-value clientele, optimize their business processes, become more regulations-compliant, and multiple other benefits, can themselves see exponential growth as the concept of Big Data proliferates into the mainstream economy. As a term, “Big Data” refers to massive datasets that are orders of magnitude larger than data managed in traditional databases. As an example, Facebook has more than one billion active users with 150 billion friend connections. All new content is stored and tracked along with the massive amount of data contained in weblogs. More than 500 terabytes (1 terabyte = 1000 gigabytes) of new data are loaded into the company’s databases every day. This data is also increasingly more complex and includes credit card and transactional data that reveal consumer preferences and electronic health records that may be used in the aggregate by companies and government agencies to understand health trends. Much data generated today is unstructured and not neatly formatted based on pre-defined principals. Thus, they are not able to be decoded using traditional analytical processes and software.

International Data Corporation (IDC), a premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets, forecasted that the worldwide Big Data market would grow by 39.4 percent per year, reaching \$16.9 billion by 2015. Another forecasting firm, Wikibon, is even more optimistic, predicting that the Big Data market will reach \$32.1 billion in 2015 and \$53.4 billion by 2017.⁴

Ultimately, the true value of Big Data lies in how it is used and manipulated. With top firms like HSN, Valpak, and Raymond James that have data analytic teams to industry-specific companies like TRIAD Retail Media and Clarifire, St. Petersburg is well-positioned to capitalize on the explosion of Big Data collection and analysis and become a hub of talent and employment in this sector.

SUBSECTOR TRENDS

Because the value-added analysis of Big Data is strongly aligned with business sectors that are highly concentrated in the city of St. Petersburg, the Data Analytics target represents a dynamic area of potential

⁴ Source: Big Data and Analytics in Northern Virginia and the Potomac Region. May 2014.

economic activity for St. Petersburg. There are not only major employers directly involved in providing Data Analytics services for other businesses but also the major businesses who are either headquartered or have large operations in the city and include data analytics in their business models.

Because of deficiencies in the NAICS system, it is very difficult to identify accurate employment numbers for Data Analytics. As noted above, many large firms have data analytics functions, yet it is impossible without capturing primary data from the companies themselves to separate these jobs from those related to the reported business activities of those firms. As a result, pinpointing precise employment growth and decline within this target is largely infeasible. However, *Market Street* has attempted to define Data Analytics employment as defensibly as possible using existing NAICS categories. In this report's analysis, subsectors directly related to data collection, database design and management, data processing, and integration into business models have all been leveraged for analysis. Additionally, the Occupational Trends section will provide insight into employment in analytical functions across all sectors.

Unlike trends in earlier targets, across all subsectors, Data Analytics has added jobs at a faster pace than the nation. At the subsector level, the city of St. Petersburg has a high concentration of employment in data processing, hosting, and related services (LQ = 3.61), marketing consulting services (2.06), and R&D in social sciences and humanities (1.35). Growth in software publishers, data processing, hosting, and related services, and marketing consulting services have all significantly outpaced the nation significantly, evidence that Data Analytics is an emerging sector for St. Petersburg. The city has already shared two announcements regarding smaller companies in 2014: Eagle Datagistics, a data logistics and storage company, and VIPSoftware, an intellectual property management firm that recently relocated to St. Petersburg.

Data Analytics jobs offer an average annual wage nearly \$23,000 greater than the adjusted city average of \$45,282. However, similar to other targets, wages lag behind the national average for each subsector except one: market research and opinion polling.

EMPLOYMENT TRENDS, DATA ANALYTICS TARGET

NAICS Code	Description	2013 Employment		2003-2013 Change		Earnings	
		St. Pete Jobs	Location Quotient	% Change, St. Pete	% Change, U.S.	2014 Wages, Salaries, & Proprietor Earnings	National Earnings Ratio
Total, Unadjusted Across All Sectors		103,526		-21%	4%	\$45,236	93.0%
Total, Adjusted Across All Sectors		103,075		-2%	4%	\$45,282	93.1%
511210	Software Publishers	189	0.93	133%	23%	\$69,854	53.9%
518210	Data Processing, Hosting, and Related Services	665	3.61	112%	(6%)	\$82,247	94.1%
541511	Custom Computer Programming Services	616	1.12	21%	41%	\$66,515	69.2%
541512	Computer Systems Design Services	238	0.41	24%	65%	\$67,232	65.4%
541613	Marketing Consulting Services	342	2.06	128%	83%	\$51,907	82.5%
541720	Research and Development in the Social Sciences and Humanities	57	1.35	(57%)	(12%)	\$38,428	55.7%
541810	Advertising Agencies	98	0.67	(48%)	1%	\$56,707	64.1%
541910	Marketing Research and Public Opinion Polling	44	0.58	(45%)	(3%)	\$69,485	114.6%
Total, All Target Subsectors		2,249	1.15	36%	33%	\$68,269	72.2%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

Top firms supporting this target include, but are not limited to, the following.

- *TRIAD Retail Media* is a digital marketing agency and the largest retailer-monetization agency in the world. It creates and manages online media programs for retail ecommerce websites. The firm's client base includes major retailers such as Walmart, Toys R Us, Dollar General and CVS.
- *Clarifire* works with clients to automate workflow, optimize business processes, and increase efficiency and compliance. The company has several products that serve various business sectors, including healthcare, mortgage loan financing, and customer care.
- *FairWarning's* primary goal is to protect patient privacy in electronic health records and health information exchanges. The company uses technology to identify potential snooping, identity theft, and other risky behaviors.
- *Valpak* is a leading digital and direct marketing company that reaches 40 million households. The company relies on digital technology to provide business intelligence and insight in connecting companies with interested consumers.
- *HSN*, a multimedia retailer based in St. Petersburg, has incorporated data analytics in its business model to improve the consumer's website and marketing experience and to assist with product discovery and engagement. They also use web metrics to evaluate successes and failures of their platform.
- *American Express*, one of the world's largest credit card companies, launched its contribution to the online and mobile payment industry, a platform named Serve, which has core operations in downtown St. Petersburg. In addition to this data-driven technology, American Express also has a business insights arm that evaluates purchasing data to uncover insights about customers.
- *Raymond James*, one of the region's largest employers, is a financial services firm with a large data analytics segment supporting business operations. The firm uses analytics software to leverage its data to simulate scenarios and model forecasts.
- *Ceridian* is a human capital management firm that provides a range of services to its global portfolio of clients. The firm has developed and uses various technologies to deliver its services, including Dayforce HCM cloud solution, LifeWorks, PowerPay, and International Payroll, which allow clients to store and analyze data about their workforce.
- *Catalina* provides digital marketing for consumer packaged goods brands and retailers informed by their shopper purchase history data, which they tout as the world's largest database of its kind. The company is responsible for the creation of the Checkout Coupon, an electronic alternative to mass-reach coupons that uses grocery scanners to distribute targeted coupons.

Exports generated from St. Petersburg's Data Analytics sectors total \$302.8 million, or 2.8 percent of the city's total exports. Similarly, Data Analytics accounts for 2.9 percent of the Tampa region's total exports. St. Petersburg's subsectors leading the targets in exports are data processing, hosting, and related services (\$139.4 million) and software publishers (\$60.9 million). There are four St. Petersburg subsectors that produce over 20 percent of the region's Data Analytics exports: R&D in the Social Sciences and Humanities (28.7 percent), advertising agencies (24.1 percent), custom computer programming services (21.9 percent), and data processing, hosting, and related services (20.9 percent). If St. Petersburg can effectively capture the growth opportunities inherent in the explosion of Big Data analytics occurring in the information economy, these export totals will undoubtedly rise.

OCCUPATION TRENDS

The Data Analytics target involves the application of computer technologies and database processing to business processes, which requires keeping up with the latest technologies, managing end-users, and understanding the intricacies of network management. According to a report by O'Reilly Media⁵, there are four types of data scientists: data businesspeople, data creatives, data developers, and data researchers, and five primary skills areas necessary for a successful data analytics sector: business, machine learning, operations research, programming, and statistics. All of these categories are represented in the following table of occupations which support the Data Analytics target.

Many of these occupations encompass varying skill combinations, requiring multiple proficiencies in order to achieve mastery. Without question, the level of knowledge required for these occupations is the reason that many of them are very high-paying when compared to the city average hourly wage of \$20.01. Though, as mentioned earlier, wages in St. Petersburg are significantly lower than the national average, the younger workers who are most likely to fill many Data Analytics positions are increasingly choosing destination communities based on factors such as quality of life and affordability rather than always looking for the highest wage.

As Big Data-intensive sectors like Data Analytics gain momentum, positions within target-supportive occupations nationwide and in St. Petersburg have increased. However, these occupations were not immune to the overall declines resulting from the impacts of the Great Recession. This is especially true for the city of St. Petersburg which was/is heavily invested in a data-intensive sector like Financial Services. However, in a positive sign that Data Analytics is indeed an emerging economic sector in the city, several key occupations remain highly concentrated, including computer network architects (LQ = 3.25), desktop publishers (2.98), data entry keyers (2.36), information security analysts (2.13), database administrators (1.73), web developers (1.36), computer programmer (1.29), and computer systems analysts (1.23).

⁵ Harris, H.D., Murphy, S.P., and Vaisman, M. *Analyzing the Analyzers: An Introspective Survey of Data Scientists and Their Work*. 2013.



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OCCUPATIONAL STATISTICS, DATA ANALYTICS TARGET, 2013

SOC Code	Description	2013 Employment			10-Year Change			Wages and Earnings	
		Jobs	Location Quotient, St. Pete	Location Quotient, MSA	St. Pete % Change	MSA % Change	National % Change	2014 Avg. Hourly Earnings	National Earnings Ratio
Total, All Occupations		103,526			-21%	-1%	4%	\$20.01	93.6%
15-1121	Computer Systems Analysts	446	1.23	1.10	(6%)	11%	20%	\$38.74	97.5%
15-1132	Software Developers, Applications	438	1.02	0.94	(6%)	9%	21%	\$35.92	80.6%
15-1151	Computer User Support Specialists	427	1.03	1.01	(20%)	1%	14%	\$20.36	84.6%
43-9021	Data Entry Keyers	363	2.36	2.08	(55%)	(31%)	(15%)	\$12.95	89.4%
15-1143	Computer Network Architects	323	3.25	2.69	(5%)	7%	3%	\$32.85	73.0%
15-1131	Computer Programmers	308	1.29	1.30	(27%)	(2%)	8%	\$31.19	84.6%
13-1161	Market Research Analysts and Marketing Specialists	268	0.89	0.78	(5%)	13%	25%	\$26.03	80.9%
15-1142	Network and Computer Systems Administrators	238	0.94	0.83	(25%)	(8%)	6%	\$35.44	97.0%
15-1133	Software Developers, Systems Software	237	0.83	0.78	(17%)	(0%)	15%	\$37.28	76.1%
11-3021	Computer and Information Systems Managers	196	0.87	0.73	(9%)	3%	11%	\$61.65	100.3%
15-1152	Computer Network Support Specialists	142	1.11	1.02	(26%)	(10%)	4%	\$25.65	84.8%
15-1141	Database Administrators	140	1.73	1.48	(8%)	7%	11%	\$35.62	93.6%
15-1134	Web Developers	131	1.36	1.18	(7%)	17%	31%	\$24.73	85.4%
15-2031	Operations Research Analysts	121	2.31	1.86	14%	27%	23%	\$25.42	66.2%
15-1199	Computer Occupations, All Other	114	0.81	0.69	(12%)	(1%)	8%	\$35.31	91.0%
15-1122	Information Security Analysts	113	2.13	1.78	8%	26%	31%	\$36.00	83.9%
43-9031	Desktop Publishers	36	2.98	2.09	(52%)	(20%)	(18%)	\$16.33	82.6%
15-1111	Computer and Information Research Scientists	<10	--	0.12	NA	(47%)	19%	--	NA

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

When assessing potential workforce gaps, Data Analytics as a whole is a healthy target in terms of workforce sustainability in St. Petersburg. Region-wide, 55.3 percent of workers in occupations related to Data Analytics are between the ages of 25 and 44, compared to 42.4 percent aged 45 and older. There are only four occupations listed in the preceding table at risk of not having enough replacement workers: operations research analysts, desktop publishers, data entry keyers, and information security analysts.

DEGREE PIPELINE, 2008-2012

Program Area	Pre-Bacc			Post-Bacc			Grand Total
	Certificates	Associate	Bachelor	Certificates	Master	Doctorate	
Business, management, marketing, and related support services	1,865	723	11,275	30	2,965	40	16,898
Communications technologies/technicians and support services	28	6	0	0	0	0	34
Computer and information sciences and support services	433	399	912	0	69	0	1,813
Mathematics and statistics	0	1	257	0	82	27	367
Grand Total	2,326	1,129	12,444	30	3,116	67	19,112

Source: NCES

Note: These totals include degrees conferred at all public and private, non-profit colleges and universities within a 25 mile radius of St. Petersburg.

Key skills-proficiency areas needed for Data Analytics employment include information technology, computer science, business management and analytics, digital media, data management, system networking, and mathematics and statistics. **The University of South Florida St. Petersburg and St. Petersburg College have several certificate, associate degree, and bachelor's degree programs within the city that provide the training required for this target's talent pipeline.** However, graduate degree capacity is provided by the Tampa campus of the University of South Florida. The number of



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certificates earned decreased each year between 2009 and 2011 but have rebounded in 2012, in which more certificates were granted than the previous four years combined. With the exception of doctoral degrees, which have declined between 2008 and 2012, all other levels have increased in volume over time.

- *University of South Florida St. Petersburg* has an undergraduate degree program in information systems, which trains students to apply computer technologies to business processes. Students are also afforded the opportunity to earn certificates by Microsoft and the Institute for the Certification of Computing Professionals.
- *Eckerd College* offers an undergraduate degree program in management, which integrates technology applications in its curriculum.
- *University of South Florida main campus* offers undergraduate programs in information studies with a concentration in information architecture, information technology, computer engineering, computer science, management information systems, The main campus is also the location for relevant graduate programs, with master's programs in information systems, management, marketing and Ph.D. programs in information systems and marketing.
- At its St. Petersburg campus, *pTEC* offers a partially-online program in Applied Information Technology.
- *St. Petersburg College* has relevant bachelor's degree, associate degree and certificate programs in business and computer information technology. Specific programs that are of particular importance for the Data Analytics target are a bachelor's degree programs in management and organizational leadership and technology development and management and, associate degree programs in industrial management technology, computer networking, IT security, technology management, and web development.

Pinellas County Public Schools has incorporated career academies in each high school in the county. These career academies focus on business sectors that are prevalent in the county, and the academy that supports Data Analytics is located in St. Petersburg.

- Northeast High School's *Academy of Information Technology* has six focus areas, all of which prepare students for careers or continued education: technical support, networking, databases, programming, web design, and multimedia.

PLACE-BASED ASSETS

Synergies with other targets: The Data Analytics target has a strong potential to thrive in St. Petersburg because of other local target areas with Big Data analysis needs, especially Financial Services. These business-to-business (B2B) relationships can lead to real opportunities for employment growth in Data Analytics. With companies and consumers becoming increasingly concerned about data security, especially after high-profile information breaches like the recent Target credit card scandal, firms across all targets will also be looking for Big Data solutions to more effectively protect proprietary systems and data from being compromised. This especially includes sectors collecting and leveraging massive amounts of data like health care, financial services, and major multi-media retailers such as HSN.

Broadband capacity: The city of St. Petersburg touts itself as "one of the most well-connected cities on Florida's Gulf Coast," and maintains this position with policies such as a permitting process that promotes



the development of commercial and private network facilities including fiber optic networks and wireless systems. The city is served by several broadband and fiber providers, such as AT&T, Bright House Networks, FPL Fiber Net, Knology, Level-3 Communications, Tower Cloud, and Verizon.

Class A office space: The St. Petersburg market has competitive rents as well as more available space downtown compared to the Tampa Central Business District. According to Colliers International, in the fourth quarter of 2013, average rent per square foot for Class A office space in the Tampa CBD was \$23.94, and the vacancy rate was 12.7 percent. In the St. Petersburg CBD, where American Express has a significant analytics operation, average rent per square foot was slightly lower at \$23.36, with a much higher vacancy rate of 19.2 percent. In the Gateway District, home to several firms supporting the Data Analytics target including Valpak, TRIAD Retail Media, and Clarifire, the average rent per square foot for Class A office space was \$21.15. The vacancy rate in this area, however, is very low, at 7.6 percent. Class B and C space in this area of town has a vacancy rate of 21.5 percent.

STRATEGIC COMPONENTS

Because commercialized Data Analytics at the scale of Big Data is a relatively new economic opportunity, there is not necessarily a “roadmap” for how to grow this sector at the local level. More so than any other St. Petersburg target, Data Analytics will require a very specific and robust skill set to support firms crunching Big Data to add value internally or for clients across multiple industry sectors. Undoubtedly, new training programs will need to be created at local and/or regional colleges and universities specifically targeted at Data Analytics. Perhaps a collaborative research center among Tampa Bay institutions would be a viable strategy to pursue. Or an incubator/accelerator focused on Data Analytics software startup firms. Certainly, developers can support local businesses by helping them to identify customers and markets for their products. And promoting St. Petersburg as a Big Data “hub” could also be impactful. Regardless, economic development will have to get up to speed quickly on the dynamics of the industry in order to be effective at growing Data Analytics into a viable local cluster.

Alignment with city targets: The City’s Information Technologies cluster is more expansive than the Data Analytics target in that it includes all forms of IT, but both are focused on segments that reinforce the effectiveness of Data Analytics: enterprise resource planning software, mobile and broadband communication services, and cyber-security. The Information Technologies cluster leverages R&D partnerships through the Tampa Bay Technology Forum and local higher education institutions, and these collaborations are important to the target because of the ever-evolving nature of technology and the need for ongoing innovation to stay proactive in meeting user needs.

Alignment with county targets: The County’s Business and Financial Services and Information Technology targets are supportive of the Data Analytics target. Pinellas County Economic Development focuses on financial technology firms, which are a vital component of the Data Analytics community. The County’s Information Technology target is broader than the Data Analytics target, but this IT-driven segment is supported by the County’s IT goals.

Alignment with regional targets: Tampa Bay Partnership's Business, Financial & Data Services business cluster combines the components of St. Petersburg's Financial Services and Data Analytics targets. The cluster's niches of financial transactions processing and data services management sync with this target. The Partnership is committed to recruiting and promoting the region's data processing and management companies.

Alignment with state targets: Although Data Analytics is not yet an explicit niche within Enterprise Florida's Information Technology target, its software and computer systems design, digital media, and telecoms niches support the success of the Data Analytics target because of the needed inputs of data storage and processing. As the sector continues to grow nationally, it has the potential to be better defined and more easily evaluated as it becomes more of a focused area of economic interest.

Creative Arts and Design

As was noted in the Grow Smarter Competitive Assessment, St. Petersburg has a long history of supporting arts and culture as a key component of its tourism-development strategies. Known as the "City of the Arts," the city was the site of the first art gallery south of Atlanta and was the first Florida city to organize its museums. Currently, St. Petersburg is known for its concentration of blown-glass artists and benefits from the presence of dozens of top-ranked galleries, several theatrical and music venues, many world-famous museums, seven performing arts companies, and over 1,000 public events annually. Five distinct arts districts are located in the city, including Grand Central and the Warehouse Arts District. In 2013, ArtPlace America named Downtown St. Petersburg one of America's top ArtPlaces. For three years running, American Style Magazine has named St. Petersburg as its number one mid-size city for art. *The New York Times* included the city on a list of 52 global places to go in 2014, while British newspaper *The Independent* reported that St. Petersburg now rivals Miami as an arts destination. The city is also home to multiple graphic design companies and is seeing new investment in enterprises focused on development of mobile applications and gaming software.

St. Petersburg's growing prominence as a hotbed of the arts not only bolsters the city's reputation and prospects as a tourism destination, but holds opportunities to evolve Creative Arts and Design as a more impactful stand-alone target sector. To do this, attention must be directed not only to traditional arts establishments and practitioners, but also the aforementioned new media and gaming firms and application developers who can benefit from a talent base with well-honed artistic and design sensibilities and skills.

SUBSECTOR TRENDS

Creative Arts and Design is an emerging cluster, supported by high concentrations of relevant subsectors that add to St. Petersburg's already strong artist-attraction advantages. For example, the subsector with the highest location quotient is arts dealers (LQ = 12.12), with 12 times the number of jobs than the average American community. With this level of concentration, artists have a greater likelihood of promoting and selling their work. Other subsectors with high employment concentrations are musical

groups and artists (3.74), photofinishing (2.54), commercial photography (2.34), and landscape architecture (2.19). This target not only serves as an economic driver, but it also supports the community product, providing selling points for recruiters of new firms and for talent. The impact that the arts has on the city in terms of civic pride and quality of life is also powerful.

EMPLOYMENT TRENDS, CREATIVE ARTS AND DESIGN TARGET

NAICS Code	Description	2013 Employment		2003-2013 Change		Earnings	
		St. Pete Jobs	Location Quotient	% Change, St. Pete	% Change, U.S.	2014 Wages, Salaries, & Proprietor Earnings	National Earnings Ratio
Total, Unadjusted		103,526		-21%	4%	\$45,236	93.0%
Total, Adjusted		103,075		-2%	4%	\$45,282	93.1%
71	Arts, Entertainment, and Recreation	3,289	1.95	17%	11%	\$31,925	102.0%
711110	Theater Companies and Dinner Theaters	57	1.23	(87%)	(1%)	\$19,971	61.8%
711130	Musical Groups and Artists	119	3.74	358%	(4%)	\$28,868	52.9%
711310	Promoters of Performing Arts, Sports, & Similar Events w/Facilities	62	1.06	41%	50%	\$26,192	79.3%
711320	Promoters of Performing Arts, Sports, & Similar Events w/o Facilities	15	0.60	(40%)	23%	--	71.9%
711510	Independent Artists, Writers, and Performers	175	0.90	13%	2%	\$14,468	38.4%
712110	Museums	108	1.86	(8%)	19%	\$28,074	84.3%
453920	Art Dealers	189	12.12	56%	(29%)	\$32,490	78.5%
511210	Software Publishers	189	0.93	133%	23%	\$69,854	53.9%
512110	Motion Picture and Video Production	75	0.43	(17%)	19%	\$35,323	42.3%
51213	Motion Picture and Video Exhibition	60	0.65	(24%)	(6%)	\$10,564	80.3%
541310	Architectural Services	158	1.28	(21%)	(12%)	\$53,168	75.7%
541320	Landscape Architectural Services	69	2.19	35%	(20%)	\$23,405	56.9%
541410	Interior Design Services	41	0.74	(34%)	(3%)	\$29,367	83.9%
541430	Graphic Design Services	124	1.42	(21%)	(6%)	\$25,985	63.1%
541490	Other Specialized Design Services	16	1.01	7%	32%	\$38,991	77.6%
541511	Custom Computer Programming Services	616	1.12	21%	41%	\$66,515	69.2%
541512	Computer Systems Design Services	238	0.41	24%	65%	\$67,232	65.4%
541921	Photography Studios, Portrait	61	1.35	(40%)	(18%)	\$15,085	72.7%
541922	Commercial Photography	21	2.34	75%	(5%)	\$59,397	141.9%
81292	Photofinishing	23	2.54	(62%)	(74%)	\$23,495	50.1%
Target Total		5,169	1.65	14%	18%	\$41,146	66.7%

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

Unlike certain of St. Petersburg's other recommended targets, Creative Arts and Design experienced net employment growth over the ten-year period examined. This occurred despite the downturn in visitation during the recession that contracted the pool of potential art buyers and patrons. Overall growth in the target was driven by the overarching NAICS 71 Arts, Entertainment, and Recreation sector. Noteworthy subsectors include musical groups and artists, independent artists, writers, and performers, art dealers, software publishers, landscape architecture services, and commercial photography, which all outperformed the nation in employment growth.

The downside to this target is its comparatively lower wages, except in computer-related fields, architectural services, and commercial photography. One potential factor that contributes to lower average wages is the likely prevalence of part-time work in Creative Arts and Design, especially for artists

with alternative sources of employment. As the data show, the target's highest value subsectors are digital applications, gaming, and design-influenced software, all knowledge- and technology-driven fields with high-wage career opportunities. As with all other St. Petersburg target sectors, average wages in Creative Arts and Design are well below the national averages by subsector, a talent retention and attraction challenge for the city. However, this workforce challenge is partially lessened by St. Petersburg's high quality of life and its historical position as a tourism hub with visitors who are also potential art buyers and purveyors of culture.

Top assets supporting this target are diverse in nature, from entertainment and attractions to firms that depend on design skills, including architecture firms, graphic design companies, and software design and development companies.

- According to the St. Petersburg Arts Alliance, the city has eight world-renowned museums, including the Chihuly Collection, Dr. Carter G. Woodson African American Museum, Florida Holocaust Museum, Great Explorations and Hands On Museum, Museum of Fine Arts, Museum of History, Pinellas Pioneer Settlement, and the Salvador Dali Art Museum.
- The city is home to several art galleries, including the *Morean Arts Center*, the Southeast's first art gallery south of Atlanta. An event that connects arts enthusiasts with St. Petersburg's art galleries and studios is the *Second Saturday Art Walk* in Downtown St. Petersburg each month.
- St. Petersburg's entertainment offerings include seven performing arts companies and 11 theatrical and music venues. Among these venues is the recently renovated Duke Energy Center for the Arts – The Mahaffey Theater, which is a 2,031-seat facility with waterfront views.
- *Apan Software*, which has offices in St. Petersburg and in Tampa, provides mobile application, web design and development and software development services.
- *RDesign, Inc.* is an example of the graphic design companies located in St. Petersburg. The firm combines visual arts with programming and research to serve its clients.
- *Wannemacher Jensen Architects, Inc.* is an award-winning architecture firm that has completed several projects in St. Petersburg and beyond. The firm was a member of the Michael Maltzan Architecture Team which won the 2012 St. Petersburg Pier International Design Competition. The design concept named The Lens was defeated by public vote, but its participation in the contest that was intended to replace the city's landmark Pier is an example of how Creative Arts and Design companies are interwoven into the fiber of the community.
- A member of the second place Bjarke Ingels team in the St. Petersburg Pier Competition, *Mesh Architecture* specializes in the design of neighborhoods, buildings, interiors, architectural elements, and furniture.

OCCUPATION TRENDS

St. Petersburg's Creative Arts and Designs target is supported by a high concentration of creative occupations, particularly those requiring high levels of technical knowledge, especially when compared to the Tampa Bay region. While St. Petersburg is clearly competitive in its computer-related occupations, the city is also becoming increasingly well known as an arts hub, especially for its concentration of blown-glass artists. Interestingly, however, occupational concentrations relevant to

Target Business Analysis

Creative Arts and Design are well below the target's employment concentrations by sector, an indication that these occupations are diffused through multiple sectors. But this also means that there is a ready pool of talent able to be mobilized for Creative Arts and Design jobs as they are created through targeted development.

OCCUPATIONAL STATISTICS, CREATIVE ARTS AND DESIGN TARGET, 2013

SOC Code	Description	2013 Employment			10-Year Change			Wages and Earnings	
		Jobs	Location Quotient, St. Pete	Location Quotient, MSA	St. Pete % Change	MSA % Change	National % Change	2014 Avg. Hourly Earnings	National Earnings Ratio
	Total	103,526			-21%	-1%	4%	\$20.01	93.6%
15-1132	Software Developers, Applications	438	1.02	0.94	(6%)	9%	21%	\$35.92	80.6%
15-1131	Computer Programmers	308	1.29	1.30	(27%)	(2%)	8%	\$31.19	84.6%
27-1024	Graphic Designers	264	1.41	1.08	(33%)	(9%)	(5%)	\$17.90	82.0%
15-1133	Software Developers, Systems Software	237	0.83	0.78	(17%)	(0%)	15%	\$37.28	76.1%
27-3031	Public Relations Specialists	174	1.14	0.87	(2%)	6%	9%	\$26.24	88.5%
27-2042	Musicians and Singers	134	1.06	0.86	11%	16%	8%	\$17.90	72.1%
15-1134	Web Developers	131	1.36	1.18	(7%)	17%	31%	\$24.73	85.4%
11-9041	Architectural and Engineering Managers	115	0.86	0.76	(20%)	(4%)	2%	\$52.82	82.6%
27-3041	Editors	114	1.29	0.77	(62%)	(25%)	(9%)	\$29.62	106.5%
27-3043	Writers and Authors	106	1.20	0.91	(19%)	7%	3%	\$19.59	87.0%
17-1011	Architects, Except Landscape and Naval	94	1.26	0.94	(26%)	(21%)	(12%)	\$29.03	84.0%
27-4021	Photographers	80	0.92	0.69	(29%)	(1%)	3%	\$14.23	93.1%
27-2012	Producers and Directors	78	1.04	0.54	(22%)	(15%)	3%	\$27.36	68.5%
27-1025	Interior Designers	59	1.04	0.89	(18%)	(9%)	(6%)	\$18.85	84.3%
17-3011	Architectural and Civil Drafters	52	0.83	0.90	(40%)	(28%)	(16%)	\$20.53	84.8%
27-1011	Art Directors	43	0.99	0.78	(20%)	(5%)	(7%)	\$22.15	72.1%
27-2041	Music Directors and Composers	39	0.81	0.71	(3%)	2%	3%	\$14.84	62.4%
27-1023	Floral Designers	37	0.93	0.79	(43%)	(38%)	(29%)	\$10.40	89.4%
27-1014	Multimedia Artists and Animators	36	0.84	0.70	(8%)	(1%)	0%	\$13.80	62.2%
27-2011	Actors	27	0.43	0.37	(58%)	(17%)	10%	\$12.15	37.8%
27-4031	Camera Operators, Television, Video, and Motion Picture	24	1.50	0.72	(11%)	(10%)	13%	\$15.50	69.9%
27-4099	Media and Communication Equipment Workers, All Other	20	1.69	1.32	0%	14%	11%	\$32.92	101.2%
13-1011	Agents and Business Managers of Artists, Performers, and Athletes	19	1.26	1.15	19%	34%	24%	\$16.51	50.5%
27-1021	Commercial and Industrial Designers	19	0.67	0.59	(21%)	(6%)	(5%)	\$23.36	84.0%
27-4032	Film and Video Editors	18	0.92	0.51	(33%)	(24%)	12%	\$20.51	70.3%
27-1012	Craft Artists	15	0.97	0.89	(12%)	3%	(11%)	\$5.84	71.8%
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	15	0.79	0.71	(17%)	0%	(4%)	\$10.82	64.7%
27-2031	Dancers	15	1.24	0.74	0%	13%	8%	\$16.54	91.3%
43-9081	Proofreaders and Copy Markers	15	1.77	1.06	(59%)	(28%)	(15%)	\$15.69	93.1%
25-4012	Curators	<10	--	0.42	NA	0%	15%	--	NA
25-4013	Museum Technicians and Conservators	<10	--	0.50	NA	5%	15%	--	NA
27-1019	Artists and Related Workers, All Other	<10	--	0.88	NA	14%	3%	--	NA
27-2032	Choreographers	<10	--	0.26	NA	0%	42%	--	NA

Source: EMSI

Note: National Earnings Ratio Color Code based on Tampa MSA Cost of Living Index of 93.2

When compared to the nation, St. Petersburg's Creative Arts and Design occupations were severely affected by the recession and resulting slow recovery. One likely explanation of these losses is, as noted, the recession's impact on the health of St. Petersburg's tourist economy and the corresponding decrease in potential art buyers visiting the city. As St. Petersburg continues to rebound and residents and visitors have more disposable income to spend on the arts, Creative Arts and Design employment should continue to rebound.

One benefit of targeting Creative Arts and Design is that the sector provides a good range of wages for positions across a broad occupational spectrum. From entry level workers at museums and theaters to artists and performers to highly-trained graphic artists and web developers, the target can accommodate a diverse range of skill-sets and educational backgrounds. Growth in Creative Arts and Design will also support occupations in tourism and hospitality, which would benefit from St. Petersburg becoming an increasingly prominent location for arts tourism.

Projected Workforce Gaps: While age dynamics of the overall Creative Arts and Design regional workforce are largely sustainable, further analysis reveals that a number of key occupations are at risk of worker shortages. Looking at the big picture, half of the workers in related occupations to Creative Arts and Design are between the ages of 25 and 44, compared to 45 percent aged 45 and over. However, a number of occupations critical to the vitality of the sector feature a greater number of older workers than younger talent to replace them. These positions include: proofreaders and copy markers, craft artists, music directors and composers, fine artists, architectural and engineering managers, writers and authors, musicians and singers, and multimedia artists and animators.

DEGREE PIPELINE, 2008-2012

Program Area	Pre-Bacc		Post-Bacc				Grand Total
	Certificates	Associate	Bachelor	Certificates	Master	Doctorate	
Architecture and related services	43	0	0	0	188	0	231
Area, ethnic, cultural, and gender studies	0	0	295	0	62	0	357
Communication, journalism, and related programs	3	0	2,214	0	128	0	2,345
Computer and information sciences and support services	433	399	912	0	69	0	1,813
English language and literature/letters	0	0	2,639	0	129	64	2,832
Foreign languages, literatures, and linguistics	0	0	256	0	103	0	359
Liberal arts and sciences, general studies and humanities	33	30,436	678	0	70	0	31,217
Visual and performing arts	216	218	1,570	0	205	9	2,218
Grand Total	728	31,053	8,564	0	954	73	41,372

Source: NCES

Note: These totals include degrees conferred at all public and private, non-profit colleges and universities within a 25 mile radius of St. Petersburg.

One potential solution to replenish occupations at risk of contraction is through increasing the number of graduates trained in relatable skill sets. On the surface, performance has been strong; annually from 2008 to 2012, across all educational levels except doctorates, there has been an increase in degree attainment. This occurred despite a sizable decrease in the number of visual and performing arts certificates and bachelor's degrees conferred from 2009 to 2010. Since then, however, these categories have rebounded. To provide some perspective on the St. Petersburg region's (schools within 25 miles of the city) capacity to train visual and performing artists, *Market Street* compared greater St. Petersburg to a similar geographical radius around Orlando for these degree categories. **Data showed that greater Orlando graduates over twice as many visual and performing artists per capita than St. Petersburg.** While the presence of movie studios, Disneyworld, and other advantages certainly boost Orlando's output, St. Petersburg is also considered to be an arts and cultural hub. Degree-granting capacity for Creative Arts and Design must be enhanced if talent shortages are to be mitigated.

Relevant programs: There are several academic programs in and around the city that support this target's talent pipeline. Examples of program areas that students can pursue are as follows.

- The *University of South Florida-St. Petersburg* has undergraduate degree programs in art and graphic design, art history, mass communications, and world languages and cultures. Graduate programs include master's degree programs in digital journalism and design, journalism and media studies, and liberal arts. The university also has added a graduate certificate program in food writing and photography, slated to begin in fall 2014.
- *USF-Tampa* offers a wider range of studies than the St. Petersburg campus. The main campus has undergraduate programs in art history; Latin/Greek classics; communication with concentration in culture and media, performance studies, and relational communication; dance with concentrations in ballet, dance studies, and modern dance; English with concentrations in creative writing, literary studies, and professional writing; mass communications; music performance with concentrations in acoustic and electronic composition, jazz studies, and performance; music studies; studio art; and theatre with concentrations in design and performance. Graduate programs include master's programs in creative writing, English, film studies, and humanities and Ph.D. programs in English and communication. There are also graduate certificate programs in comparative literature and creative writing.
- *Eckerd College* offers undergraduate programs in an array of majors related to Creative Arts and Design, including visual arts, communication, comparative literature, computer science, creative writing, English, film studies, interdisciplinary arts, literature, music, and theatre.
- At its St. Petersburg campus, *pTEC* offers full-time courses in Digital Video Production, Drafting, Jewelry Making and Repair, and Landscape Management, partially-online courses in Applied Information Technology, Digital Design, and Web Development, and full-time and partially-online courses in Commercial Foods and Culinary Arts and Commercial Photography Technology.
- *St. Petersburg College* offers associate degree and certificate programs in several key fields, including digital arts, media, interactive web design, web development, music industry and recording arts, photographic technology, video game foundations, and video production.

Two of St. Petersburg's high schools have career academies that provide early exposure to the Creative Arts and Design skills and knowledge.

- *Northeast High School's Academy of Information Technology* includes web design and multimedia in its focus areas. Hands-on labs, mentoring, and internship and job shadowing opportunities are components of the curriculum.
- *Dixie Hollins High School's Graphic Arts Academy* has four areas of focus: printing, graphic design, web design, and digital design. Students in this academy are prepared for careers in graphics or for higher levels of education in the field.

PLACE-BASED ASSETS AND OPPORTUNITIES

Art support: During the public input segment of the first phase of research for the Grow Smarter Initiative, arts stakeholders expressed that St. Petersburg's competitive advantage in the arts is at risk due to a lack of public and private support. Before the onset of the Great Recession, the city of St. Petersburg dedicated \$400,000 annually to funding local arts grants. In 2008, that figure fell to \$175,000 and has not been

increased since the end of the recession.⁶ Similarly, funding from the Pinellas County Cultural Affairs Council and the Tourist Development Council was reduced during the recession. The PinArts Coalition, a newly formed alliance of arts organizations, is working to influence Pinellas County and the city of St. Petersburg to restore funding. PinArts would like to see \$1.5 million in county and TDC money dedicated to arts and culture and the creation of a \$150,000 “artist resource fund.”

Arts and culture scene in St. Petersburg: St. Petersburg reputation as a “City of the Arts” has been bolstered recently by complimentary coverage in a range of media, including ArtPlace America, *American Style Magazine*, *The New York Times*, and British newspaper *The Independent*. A number of these articles mentioned one or more of the city’s five distinct arts districts. They include:

- The *Waterfront Arts District*, which has attracted over 20 arts businesses and organizations and over 100 artists since 2000, is a downtown entertainment district with shopping and dining amenities. Several of the city’s museums are located within this district.
- The *Central Arts District* offers fine art galleries, performing arts venues, and other supporting amenities. This area is becoming a graphic design and branding district.
- The *Edge District* is home to several galleries, boutiques, and entertainment locales.
- The *Grand Central District* is one of the state’s Main Street Communities and is described as a hip and eclectic area with art galleries, antique shops, professional services, and retail and dining locations.
- The *Warehouse Arts District* is known as a place “where art is made,” not just exhibited and sold. Artists have transformed this formerly largely industrial area with empty, abandoned buildings into a creative district with over 15 arts businesses and organizations.

St. Petersburg’s existing strong presence of domestic and international tourists offers a stable presence of art buyers and cultural patrons. Over 1,000 public events are hosted in the city annually and attract residents and tourists alike, providing exposure opportunities for local artists. Examples of mainstay events in the city are the Sunscreen Film Festival, a four-day festival sponsored by the Academy of Motion Picture Arts and Sciences that attracts over 11,000 people; the Tampa Bay Blues Festival, which is considered one of the world’s foremost blues events; and Mainsail Arts Festival, a fine arts festival that exhibits artists and attracts over 100,000 attendees.

Housing redevelopment: Cited as a major challenge for St. Petersburg, the lack of diverse housing options can be an inhibitor of talent retention and attraction. There are opportunities to develop live/work spaces in arts districts, revitalizing blighted areas and repurposing commercial buildings. **Ensuring a supply of affordable arts spaces will be an important strategy for this target.** One program that has already begun to transform abandoned properties into viable living spaces by capitalizing on talent is Venture House. The organization leverages a combination of private and public funds and “sweat equity” to revitalize dilapidated homes into residences that can attract entrepreneurial and artistic talent from the region and elsewhere into St. Petersburg’s core.

⁶ Bradshaw, Kate. Arts supporters want St. Pete to restore funding. *Tampa Tribune*, April 5, 2014. <http://tbo.com/pinellas-county/arts-supporters-want-st-pete-to-restore-funding-20140405/>

STRATEGIC COMPONENTS

The Grow Smarter Competitive Assessment cited key members of St. Petersburg's artistic community as well as news reports claiming that reductions in funding to arts organizations have jeopardized the viability of the arts sector in the city. A newly formed alliance of arts organizations called the PinArts Coalition is demanding that Pinellas County restore funding that was cut during the recession. It is also calling for the city of St. Petersburg to return the amount available for arts grants to pre-recession levels. Economic developers can leverage their lobbying influence and capacity to facilitate the renewal of resources to ensure sector growth is viable and sustainable. Working with artist groups and representatives, developers can identify the catalysts for further sector growth and help achieve desired outcomes. Importantly, economic development can link St. Petersburg's emergent entrepreneurial scene with the city's arts economy to foster synergies among companies utilizing design to create new digital products and talent who can support these ambitions, perhaps with additional training.

Alignment with city targets: The city of St. Petersburg has identified Arts, Culture, Events and Tourism as one of its seven focus business clusters and names St. Petersburg the cultural capital of Florida. The cluster includes arts and culture activities, major events, hotels and lodging, and other tourism-centric sectors and assets.

Alignment with state targets: Within Enterprise Florida's Information Technology target is the Digital Media niche, which focuses on businesses that develop video games, mobile applications, and other digital media technologies. This is a high-value component of St. Petersburg's Creative Arts and Design target and state initiatives and resources should be leveraged to ensure that St. Petersburg is among one of the top Florida communities for these jobs.

CONCLUSION

Supporting targeted employment growth at the city level means addressing issues and opportunities that are under the control of local economic development professionals. It is likely that hundreds of thousands or millions of dollars in external marketing resources will not be available to either the St. Petersburg Area Chamber of Commerce or the city of St. Petersburg's Economic Development division. Therefore, growing the target sectors recommended in this report will require local activity and strategic implementation as well as partnerships with those entities that have the resources to market St. Petersburg to the nation and world.

Multiple actions will be proposed in the Grow Smarter Initiative Strategy to position practitioners in St. Petersburg to create the most competitive climate possible for growth and development of the city's target sectors. This will likely include activities related to workforce development, business climate, local taxes and incentives, city-specific policies and protocols, existing-business and entrepreneurial support programs, and other actions. However, marketing St. Petersburg's opportunities beyond the city's borders will require working effectively with county, regional, and state partners to ensure that targeted opportunities identified in this report are somehow integrated into their external programs. While it is not required for marketing partners to change their targeted sector categories to match what was identified for the city to pursue, it would be beneficial for local interests if these partners were to at least acknowledge and communicate St. Petersburg-specific concentrations to potentially interested investors and prospect companies.

As data presented in this report show, the city of St. Petersburg has a robust presence of both clustered target sectors and emerging categories with the potential to reach the critical mass necessary to become a recognized employment cluster. Supporting the growth of both established and emerging sectors will require a diverse mix of strategies focused on all aspects of the city's competitive position and support programs for existing businesses and entrepreneurs. However, as was noted previously, this Target Business Analysis is a research report, not a strategic document. Detailed strategies to foster the growth of St. Petersburg's target sectors will be included in the Grow Smarter Initiative Strategy. The Implementation Plan, the final deliverable in the Grow Smarter process, will operationalize the strategy and enable the Chamber and its partners to move the city's economy forward sustainably and successfully.