

# EXECUTIVE SUMMARY

## Tampa Bay Information Technology Workforce Analysis Hillsborough and Pinellas Findings



Tampa Hillsborough  
Economic Development Corporation



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## Executive Summary

A nationwide issue of growing importance, the availability of a qualified Information Technology (IT) workforce has become increasingly critical to a wide variety of industries. Like many communities across the country, the rapid creation of technology-driven jobs has led to a high demand for IT talent in Hillsborough and Pinellas Counties, raising potential concerns over the ability to maintain a steady pipeline of skilled employees.

After local and national media outlets reported on shortages in qualified IT talent, the Tampa Hillsborough Economic Development Corporation took steps to address the situation. Understanding the regional nature of workforce supply, they engaged multiple partners with common interests. This regional IT Workforce Task Force joined together to proactively address the situation and prepare for anticipated economic growth. The resulting study and implementation plan, detailed within this Executive Summary, comes on the heels of a recent report identifying the Florida High Tech Corridor – which is anchored by Hillsborough and Pinellas on the western end – as one of the top five technology hubs in the United States based on current job openings.

The economic health of the Tampa Bay region is dependent upon companies finding skilled talent to fill the positions that will expand company profits. For every one IT jobs created, 1.58 other jobs are created in the Hillsborough/Pinellas region, for a total of 2.58 jobs. Solving the workforce gap is critical because IT job growth is expected to outpace total occupation job through 2019. In Hillsborough/Pinellas study area, IT generates \$16 billion in GDP annually.<sup>1</sup>

Based on research conducted in Hillsborough and Pinellas counties, and represented in this document, the IT Workforce Task Force has released a set of recommendations designed to effectively and efficiently impact the existing workforce gap within these two communities. The study also included interviews with and surveys of companies in the six surrounding counties that make up the greater Tampa Bay region; this research is ongoing and findings will be released under a separate report.

The study, which included interviews, surveys and focus groups targeting business leaders, educators, students, and HR and IT professionals, demonstrated that:

- Large and small companies across the industry clusters expressed concerns about hiring challenges for IT-related positions; a situation that we anticipate will become more acute as the economy recovers.
- The immediate gap exists for specific skills: Java, .NET programmers and developers, Agile development concepts, Cloud Computing Engineers, Sales Engineers, CRM, Security, and SharePoint.
- Future growth areas reported included: Business Analytics, Big Data, Desktop Support, Computer and Software Engineers, and Security specialists.
- All companies reported having difficulty hiring IT professionals with 3- 5 years experience working in an enterprise environment and the ability to be productive from the first day.
- Businesses are requiring talent to do more and have multiple skills.
- Small to mid-size companies that did not have formal new hire training programs reported challenges finding entry level candidates with the necessary technical knowledge.

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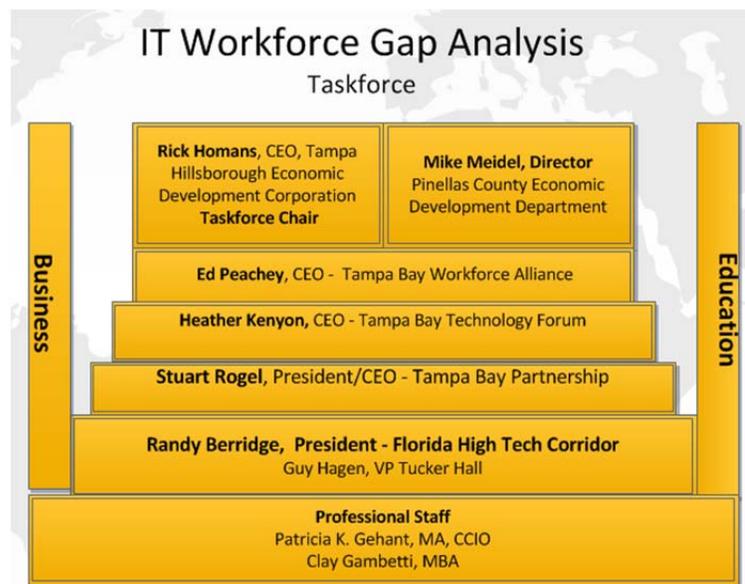
<sup>1</sup> MIG, Inc., IMPLAN System. (2012, July 2011). IT Economic Impact Hillsborough and Pinellas Counties. Hudson, WI.

- IT professionals are required to be lifelong learners because technology changes so rapidly.
- Students need to have more real world technical skills when entering the job market.
- Students have limited knowledge of the local technology job market.
- Business, Education, and students are all willing and interested in working together.

In addition, we found that the community is rich in quality education, innovative business leaders, and willing talent. The solutions recommended by the IT Workforce Gap Taskforce involve strengthening linkages and coordination between business, education, government, and the talent pool, along with new tools. The expansion and strengthening of the connections will have an immediate impact, or simply put – creating solid lines where only dotted lines exist.

## The Process

The Tampa Hillsborough Economic Development Corporation, Pinellas County Economic Development, Tampa Bay Technology Forum, Tampa Bay Partnership, Tampa Workforce Alliance, and the Florida High Tech Corridor Council joined forces to address concerns that area employers were facing challenges finding skilled talent for IT-based jobs. The Hillsborough-Pinellas IT Workforce Gap Analysis was to assess the extent of the challenges and to develop solutions. Tampa Bay WorkForce Alliance provided funds to hire two professional staff to conduct the study and the Florida High Tech Corridor Council provided funding for a professional research consultant.



### Interviews

The analysis began with more than 60 interviews with employers and educators to understand which IT skills and job functions are important to Hillsborough and Pinellas employers and relationships with educational programs.

### Surveys

An online survey was distributed with targeted emails to more than 140 IT employers in Hillsborough and Pinellas counties, along with team members sending the survey to their constituents through targeted emails and newsletters. There was also a website dedicated to the survey that explained the analysis and provided a link to the survey (<http://www.tampabayitworkforcesurvey.org/>)

Sixty-four companies representing 26% of the IT workforce in Hillsborough and Pinellas counties completed surveys. The survey development process sought to include a variety of industries with IT services or back office operations, as well as a stratified response set based on company size and county.

### ***Focus Groups***

Focus groups were held to confirm and clarify the survey responses – they included students, HR/Hiring Managers, CEOs/CIOs, and educators. Solutions were socialized and refined based on input from the participants. The sessions were closed and all comments were held in confidence. Many of the focus group participants also completed the survey and some of the focus group participants were part of the 60 interviews conducted. The comments and ideas expressed have been incorporated into the recommendations.

## **Results**

The initiative's recommendations (Appendix 1) will be undertaken by local businesses, educational institutions, economic development groups, or a collaboration of partners. The recommendations seek innovative ways to fill the talent gap through strengthening the connections between business, education, government, and community partners. The recommendations are grouped into four key focus areas with recommended timeframes. The following recommendations will be initiated in the first year:

### ***Real-world training for high demand jobs***

- a. Create a series of Exploration Labs that allow students to practice technical skills
- b. Rapidly deploy continuous training in high demand skills
- c. Business professionals working alongside educators to define and deliver current technical skills

### ***Streamlining internships for tomorrow's workforce***

- d. Develop process to use LinkedIn (*LinkedIntern*) to connect students to internships in area businesses
- e. Expand internship opportunities
- f. Conduct Internship Fairs
- g. Train business on best practices for effective internships

### ***Innovative career development, recruitment, and retention practices***

- h. Engage local user groups and Meet-Ups
- i. Develop a *Talent Satisfaction Index* to quantify job/life/career satisfaction related to job retention
- j. Recruit Veterans into the IT high demand skills

### ***Regional marketing and external recruiting***

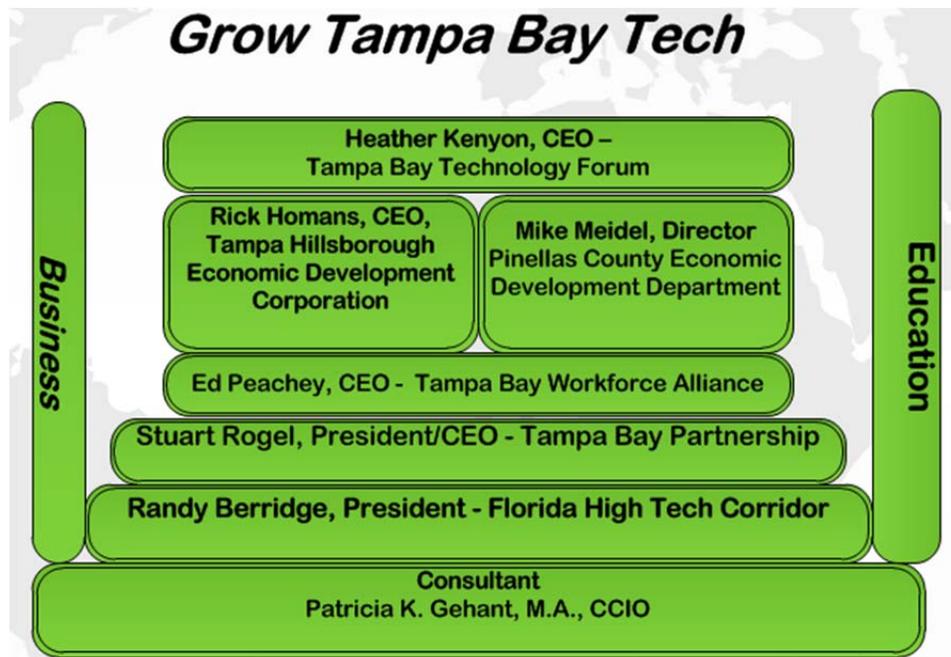
- k. Conduct community challenges i.e. hack-a-thons, code builds, etc.
- l. Introduce TBTF Chapters in area colleges and universities
- m. Grow partnerships between businesses and K-12 school systems
- n. Market area to increase in-migration of IT Talent
- o. Train HR/Recruiters to sell the area to external talent

## Implementation

The IT Workforce Taskforce recommends an ongoing program - ***Grow Tampa Bay Tech*** - that will provide a central point of contact for partners to initiate contact with business and education, and to serve as the umbrella for coordination and implementation of the first round of recommendations critical to creating the desired change. Tampa Bay Technology Forum will take the lead in the implementation phase.

The IT Workforce Taskforce will operate in an advisory role to ***Grow Tampa Bay Tech*** and assist in the monitoring of implementation progress. ***Grow Tampa Bay Tech*** will communicate with taskforce and community partners on the progress, coordinating with business, education, governments, and community partners to achieve the outlined recommendations.

***Grow Tampa Bay Tech*** will design a process for measuring and reporting progress made on each recommendation.



***Community Involvement Can Bridge the Gap:***

Solving the current challenges and closing the gaps will require a combined community-wide effort between businesses, economic development organizations, colleges and universities, K-12 and public/private partnerships. If you are interested in participating in leading or sponsoring any of the activities presented in this study, please contact Heather Kenyon, CEO, and Tampa Bay Technology Forum at [hkenyon@tbtf.org](mailto:hkenyon@tbtf.org)

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Please visit [www.TampaBayITWorkforceSurvey.com](http://www.TampaBayITWorkforceSurvey.com) to view a full copy of the report.

## Summary of Recommendations

 Monitor

 Attention

 Critical

	Timeframe	Resources	Lead
<p>➤ <b>Real World Training for High Demand Jobs</b> - Employers reported a need to fill positions requiring specific technical skills. Students reported the desire to practice the technical skills they learn and to have access to the most current and BETA versions of new technologies. Small and mid-size employers reported the need for graduates to have more technical skills.</p>			
<p> 1. Create Exploration Labs for students to practice new skills learned in the classroom, boot camps, and online courses. Similar labs exist within specific colleges and focus on technology taught in the classroom. These labs will cross the boundaries of the individual institutions and engage student, faculty, and businesses in classroom learning, business use cases, and community competitions. ExLab should include in-market and BETA versions of software and hardware and are intended to be a community wide partnership between educational institutions and business.</p>	Short	Funding/ Coordination	Business Leader
<p> 2. Develop technical training programs - online and boot camp style - opportunities for current high-demand skills; Java, .NET, Agile development, cloud computing engineers, sales engineers, CRM and SharePoint. Prepare training in future areas of expansion including business analytics, big data, desktop support, computer and software engineers. Boot camp and online training should be supplemented with student focused seminars to reinforce the skills learned. Market to IT Professionals that are seeking re-skilling, updating skills, or seeking employment.</p>	Short	Coordination	Colleges TBTF Online Private Educations
<p> 3. IT professionals will coordinate with educators to develop business use cases for high demand technical courses including boot camp style sessions, classroom coursework, and Exploration Labs.</p>	Medium	Coordination	TBTF Business Education
<p> 4. Offer quarterly webinars by business experts on new technology to assist faculty to engage with vendors regarding the application of the technology in the workplace.</p>	Medium	Coordination	TBTF

	Timeframe	Resources	Lead
 <p>5. Expand recruitment of returning Veterans and provide supplemental technical training. Current efforts are underway in the Tampa Bay area. Increased coordination of career pathways and jobs available should be expanded. Businesses are interested in hiring qualified Veterans.</p>	Medium	Coordination	Business Leader Workforce Boards
 <p>6. Participate in Department of Education-recognized apprenticeships programs for high- demand jobs.</p>	Long	Funding/ Coordination	Education WorkNet Tampa/ Workforce Alliance
 <p>7. Expand the use of IT Competency Model, Framework for 21st Century<sup>2</sup> skills and STEM<sup>3</sup> to provide both soft and technical skills for high school and college students to increase readiness to work.</p>	Long	Coordination	Education
<p>➤ <b>Streamline Internships for Tomorrow’s Workforce</b> – <i>New hires need to have more real world experiences with technologies, knowledge of enterprise systems, possess the right mix of academic and workplace competencies<sup>4</sup>, and be proficient in multiple areas. Students are requesting more internship opportunities to allow for multiple internships to build a portfolio for graduation. Small to mid-size business are willing offer internships but do not have the structure.</i></p>			
 <p>8. Encourage use of a standards-based social marketing tool, such as LinkedIn, to advertise opportunities that would allow companies to post opportunities, faculty to recommend students, and students to find opportunities. Create a team of students, business owners, and educators to define the functionality and process of the online solution.</p>	Short	Funding/ Coordination	TBTF
 <p>9. Expand internship opportunities at all postsecondary institutions. While internships are offered at local colleges and universities, when students begin to increase participation through marketing efforts, more opportunities will be needed.</p>	Short	Coordination	TBTF Education

<sup>2</sup> **Framework for 21<sup>st</sup> Century Learning** – a holistic view of 21<sup>st</sup> century teaching and learning that combines a discrete focus on 21<sup>st</sup> century student outcomes, blending specific skills, content knowledge, expertise, and literacy’s. <http://www.p21.org/overview>.

<sup>3</sup> **STEM Education** - is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply science, technology, engineering, and mathematics in contexts that make connections between school, community, work, and the global enterprise enabling the development of STEM literacy and with it the ability to compete in the new economy (Tsupros, 2009).”

<sup>4</sup> **Competency Model Clearinghouse – IT Industry Competency Model.** Academic Competencies include; Reading, Writing, Math, Science, Communication & listening, Critical & Analytical Thinking and base Computer skills. Workplace Competencies include - Collaboration, Planning & Organization, Innovative Thinking, Problem Solving & Decision Making, Working with Tools & Technology, and Business Fundamentals.

		Timeframe	Resources	Lead
	10. Provide training to businesses on best practices for setting up internships. Include discussion with students to provide feedback the “best” and “worst” internship experiences including feedback from students on internship process.	Short	Coordination	TBTF
	11. Conduct internship fairs to connect students with employers. Motivate students to seek multiple internship opportunities throughout their college experience that will expand their knowledge, technical skills, and awareness of local businesses.	Short	Coordination	TBTF
	12. Increase the capacity of career centers to provide students with career pathways <sup>5</sup> and to be prepared to compete for internships earlier in their education.	Long	Coordination	Education
	13. Businesses are requiring employees to have a broader range of leadership and technical skills. Motivate students seeking non-technical degrees to seek a double major/minor in the technology field.	Long	Coordination	Education
➤ <b><i>Innovative Career Development, Recruitment, and Retention Practices</i></b> – to be competitive in the global market, business productivity requires the continuous acquisition of new skills that expand industry-wide technical competencies. New skills can be obtained through a variety of continuously available training modalities.				
	14. Leverage existing or new channels to recruit IT Talent. Market the numerous communities of interest that will support the skills development of staff. Examples include: SQL, Oracle SharePoint, JAVA, .NET, and other programming and IT skill areas. Market the many job board options to employers; connecting the unemployed with the available opportunities; and, coordinate job placement activities in situations where companies downsize.	Medium	Coordination	EDO’s Workforce Boards Business
	15. Develop a <i>Talent Satisfaction Index</i> that will quantify job/life/ career satisfaction and job retention. Begin to measure why talent remains loyal to the company.	Medium	Coordination	Private/Public Partnership
	16. Explore practices to encourage and support talent development and career growth (mentoring, lifelong learning, IT leadership training, and apprenticeship programs).	Medium	Coordination	Business
	17. Modify degree programs to accommodate students returning for a technical degree but have already completed non-technical degrees and have job experience.	Long	Coordination	Education

<sup>5</sup> **Career Pathways** – a framework for connecting a series of educational programs with integrated work experience and support services. The goal is to provide a seamless system of career exploration, preparation, and skills upgrades linked to academic credits & credentials, available with multiple entry and exits points spanning middle and secondary school, post secondary institutions, adult education, and workplace education. Career Pathways as a Systematic Framework, League for Innovation in Community College, January 2007.

		Timeframe	Resources	Lead
	18. Explore the range of practices that will support healthy collaboration between businesses to foster an innovative community	Long	Coordination	TBTF
<b><i>Regional Marketing and External Recruiting-</i></b> Companies are seeking talent with 3-5 years experience and knowledge of enterprise level development logic requiring little supervision. Marketing the variety of IT career pathways will increase the local talent pool. The strengthening of relationships between education and business will increase the success of transition from school to the workforce. Innovation is a catalyst for an expanding the technology community along with engaging students, and attracting/recruiting an experienced talent.				
	19. Establish relationships with student organizations such as TBTF Chapters at colleges and universities in Tampa Bay. Set up a virtual TBTF for Tampa Bay students that are attending colleges outside of the area. Engage them in webinars, internships and seasonal activities.	Short	Funding/ Coordination	TBTF
	20. Initiate recruiting trips around high demand skills by conducting marketing campaigns to target cities and by attending convergence events, universities, or virtual events to increase the in- migration of IT talent by marketing Tampa Bay nationally. Efforts will be coordinated with EDC groups to identity market information and resources. The campaign will use social media and technology networks.	Short	Coordination	EDO's
	21. Provide training to HR, recruiters, and career placement professionals to increase knowledge of how to market the Tampa Bay area to prospective candidates. Provide talking points and other collateral resources.	Short	Funding/ Coordination	EDO's
	22. Conduct technology challenges/competitions for students and professionals to test their problem solving and technical skills such as Hack-a-Thons, code builds, etc., similar to the Capture the Flag sponsored by Mitre in cooperation with the CTEF.	Medium	Coordination	TBTF Student Chapters
	23. Nurture and grow partnerships between K-12, universities, colleges, and community colleges and all size businesses to expose students to career options by conducting career exploration fairs connecting to programs such as <i>TechPath</i> <sup>6</sup> .	Medium	Coordination	Education

<sup>6</sup> **techPath** – Cultivating tomorrow’s workforce. <http://www.floridahightech.com/techpath.php>

		Timeframe	Resources	Lead
	24. Managing a “Listening Post” that has continual feedback on the linkages between students, education, and business. Measure the progress on the implementation of the strategies.	Medium	Coordination	TBTF
	25. Conduct a parent / business event that will bring parents and business and educational leaders together to discuss career options.	Medium	Coordination	TBTF Chapters
<b><i>Implementation and Coordination</i></b> – <i>The framework for creating the generating energy to sustain the change.</i>				
	26. Establish a Business-Education Collaboration Team of area EDCs, business and education professionals to review implementation activities.	Short	Funding/ Coordination	TBTF/ IT Workforce Taskforce
	27. Establish a measurement structure.	Short	Coordination	TBTF
	28. Implement recommendations.	Long	Coordination	TBTF/ IT Workforce Taskforce