A Regional Research Initiative

WORKFORCE NOW

IT Employment in Southwest Florida: Opportunities and Challenges

PREPARED BY:

WORKFORCE NOW RESEARCH TEAM
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Johnson School of Business

WORKFORCE NOW INITIATIVE

PREFACE

Workforce Now is a regional research initiative to identify current and future talent requirements for the five counties of Southwest Florida. The initiative was created in October 2012 as an outcome of the Education Summits produced by The News-Press Media Group. It is envisioned as a systematic, strategic, multi-year focus on understanding and meeting critical workforce needs. The initiative is designed to provide better information on workforce gaps including skills and characteristics desired by regional employers. The plan is to study up to six industries or sectors per year to provide a continuous stream of information from employers to educational institutions and to look for ways to create dialogue and new partnerships between businesses and educational institutions. The quality of the regional workforce is a primary competitive factor in the region's ability to grow and prosper in a competitive global marketplace.

This study, "IT Employment in Southwest Florida: Opportunities and Challenges" examines information technology related fields; the education, certification, and experience required for employment in those fields; the employment outlook for those who would seek employment in IT; and prospective positions resulting from emerging technologies. The study covers employers in the five counties that comprise Southwest Florida - Charlotte, Collier, Glades, Hendy, and Lee - and clusters employers into four groups ranging from 1-5 to greater than 500.

The Workforce Now research team expresses its sincere appreciation to those companies that gave of their time and effort to complete the surveys in a rapid fashion.

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EXECUTIVE SUMMARY

This study examines information technology related fields; the education, certification, and experience required for employment in those fields; the outlook for those who would seek employment in IT; and prospective positions resulting from emerging technologies. The study covers employers in the five counties that comprise Southwest Florida - Charlotte (16%), Collier (56%), Glades (4%), Hendy (13%), and Lee (47%) - and clusters employers into four groups ranging from 1-5 to greater than 500.

Key findings include the following:

- 62% of companies responding outsource some or all of their IT functions, including hardware, software, and training. A majority of workers (71%) performing some or all IT functions in-house are full time and the remainder are part time.

- While 68% of employers reported no difficulty filling IT-related positions, among the 32% who did have difficulty, areas such as computer programming, wireless and mobility services, database administration, systems analysis, and security presented the greatest challenges.

- The major IT job classifications requiring the most positions included support areas such as help desk, network support, application software

support, multimedia support, and operating systems support. Consistent with the finding above, programming, security, systems engineering, and data analytics, represent significant numbers of positions.

- Effectively all companies reported using office productivity software and more than 50% also reported using business management or operational software to manage accounting, database, and/or web content operational areas. About 25% reported more specialized applications usage such as statistical analysis software and/or enterprise resource planning software.

- A slight majority of respondents indicated a preference for baccalaureate degrees in an Information Technology field when considering an applicant for an IT position while a moderately smaller number recommended an Associate in Science degree in an Information Technology discipline. Additionally, industry certifications such as those awarded by Microsoft, Cisco, and Comp-TIA were desirable.

- Only 1 in five respondents reported offering internship opportunities to students studying an IT discipline.

- While respondents identified no dominant pattern of emergent technologies, they listed cloud computing, application development, data

security, and business efficiency and/or productivity applications as the most important for businesses in SWFL.

- Employers forecast that the fastest growing employment in the IT sector over the next 6 years will be in the areas of network , telecom, wireless, and mobility services; web development; and database, document, and content management.

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IT Employment in Southwest Florida: Opportunities and Challenges

Introduction

Workforce Now is a regional research initiative designed to help better understand Southwest Florida's labor market and what employers cite as their needs, critical employment gaps, and specific skills desired.

The job market is dynamic in the short run and defined by trends in the long run. This is especially true for Information Technology jobs as the necessary skills are constantly evolving. Training in the information technology area is continuous as new technologies are developed and existing technologies refined.

Given the existing and rapidly growing economic importance of information technology, the jobs it creates and the community's mandate at last October's Market Watch event, Workforce Now conducted a research project to identify opportunities and requirements for jobs in IT in Southwest Florida. Workforce Now researchers designed a survey to focus on critical issues such as (1) IT job classifications, (2) Training requirements, (3) Software skills required, (4) Future growth areas in IT, and (5) Hiring challenges. (See the appendix at the end of this report for the survey).

The results of this research   provide valuable information for both   employers and potential employees in the IT area. The survey has provided insights into the employment opportunities and requirements necessary for information technology jobs in Southwest Florida. It is the researchers' intention that these results can be used to provide educational institutions, the community, and organizations with information that will enhance the success of meeting the IT needs in the region.

Sampling Methodology

In order to produce representative results, a stratified sampling procedure was employed using data provided by Reference USA. The stratified sample was comprised of companies based in the five counties (Collier, Charlotte, Lee, Hendry, and Glades) that define SWFL and also on company size (by number of employees). From a population of companies in those counties, a weighted sample of 615 was determined from four company sizes as shown below. The stratification methodology applied to the classifications results in the following:

Number of Employees	No. of Firms	No. of Employees	Percent	Sampling Method	Sample Size
5-19	15,433	185,196	22.9%	Every 96th firm	160
20-99	3,962	235,739	29.1%	Every 19th firm	204
100-499	732	219,234	27.0%	Every 4th firm	189
500+	62	170,500	21.0%	Every firm	62
Totals	20,189	810,669	100.0%		**615**

Six hundred and fifteen calls were made to identify an appropriate IT person that would agree to complete the survey. Of the 615 companies, 132 agreed to complete the questionnaire. The survey was then emailed to these 132 companies and generated a response rate of 34% (45 successfully completed questionnaires out of 132). The findings in this white paper are based on an analysis of the data provided by those 45 respondents.

I-General

Please provide the number of employees in your organization:

As shown in Figure 1 and Table 1, 60% of the respondents represent the organizations with 100 or more employees and 40% represent the organizations with 5-99 employees.

Figure 1: Please provide the number of employees in your organization.
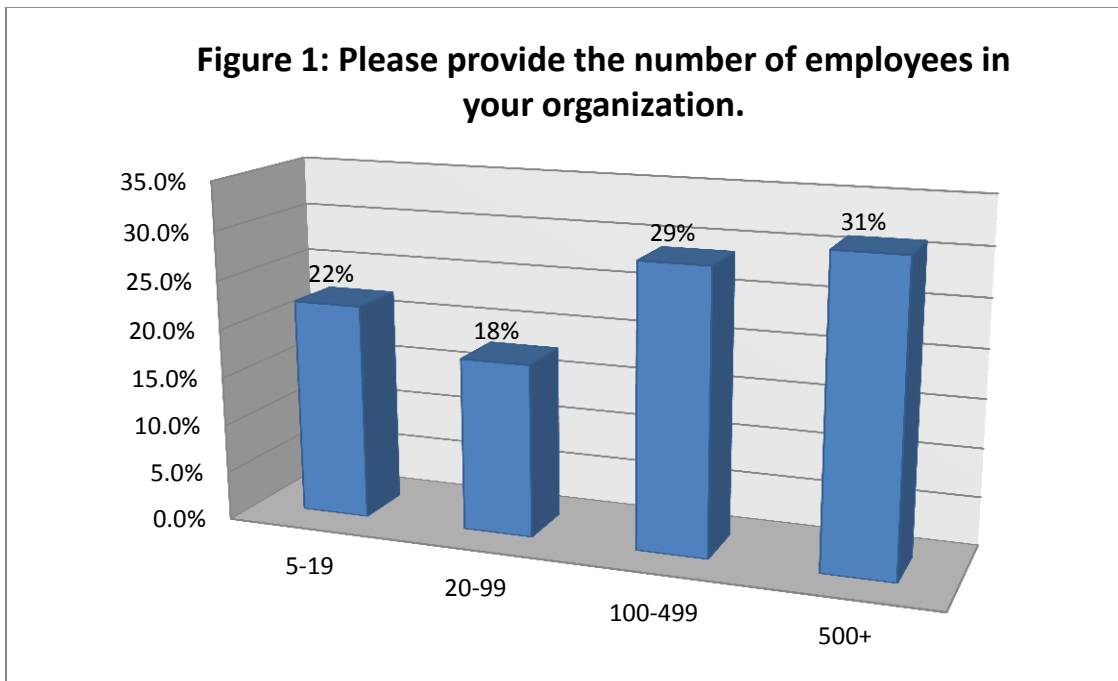
Table 1: Employees in Your Organization	Number of Responses	Percent
5-19	10	22.2%
20-99	8	17.8%
100-499	13	28.9%
500+	14	31.1%
Total	45	100.0%

Please indicate the location of your organization in Southwest Florida: (Select all that apply.)

As shown below in Figure 2 and Table 2, the vast majority of the organizations responding were from Collier (56%) and Lee (47%) with the balance from the remaining 3 counties in the service area.

Figure 2: Please indicate the location of your organization in Southwest Florida
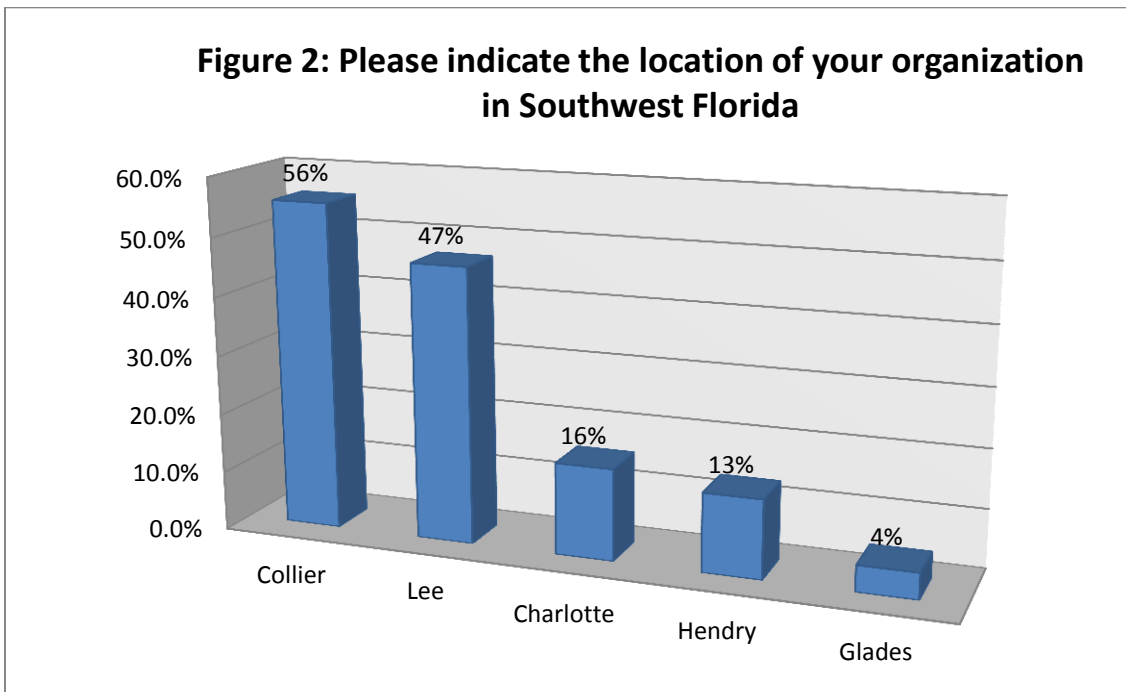
Table 2: Location of Your Organization in SW Florida	Number of Responses	Percent
Collier	25	55.6%
Lee	21	46.7%
Charlotte	7	15.6%
Hendry	6	13.3%
Glades	2	4.4%

II-Type of Service

How does your company currently manage your Information Technology (IT) functions, including hardware, software, and training?

A majority of companies (91%) manage at least some of their information technology functions internally, with 38% managing all of their information technology functions internally. Only 9% outsourced 100% of the management of their information technology functions (Figure 3 and Table 3).

Figure 3: How does your company currently manage your Information Technology (IT) functions, including hardware, software, and training?
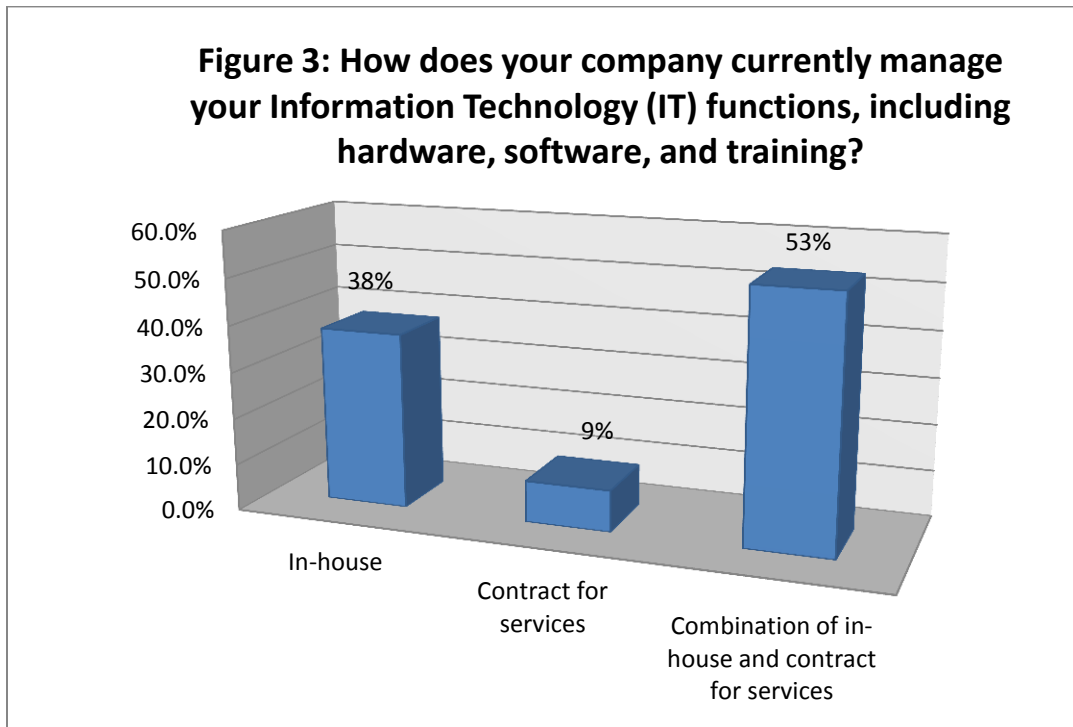
Table 3: Management of Information Technology (IT) Functions	Number of Responses	Percent
In-house	17	37.8%
Contract for services	4	8.9%
Combination of in-house and contract for services	24	53.3%

III-In-house Services

How many IT employees (full-time) work at your location(s) in Southwest Florida?

As shown below in Figure 4 and Table 4, a dichotomy exists with regard to the full time IT workforce in the region. Almost 30% of the respondents reported that their IT needs were met people employed outside of their organizations. The bulk of organizations (44%), employed between 1 and 5 full time employees to perform their IT management and a small number of respondents (9.8%) reported employing 51 or more.

Figure 4: How many IT employees (full-time) work at your location(s) in Southwest Florida?
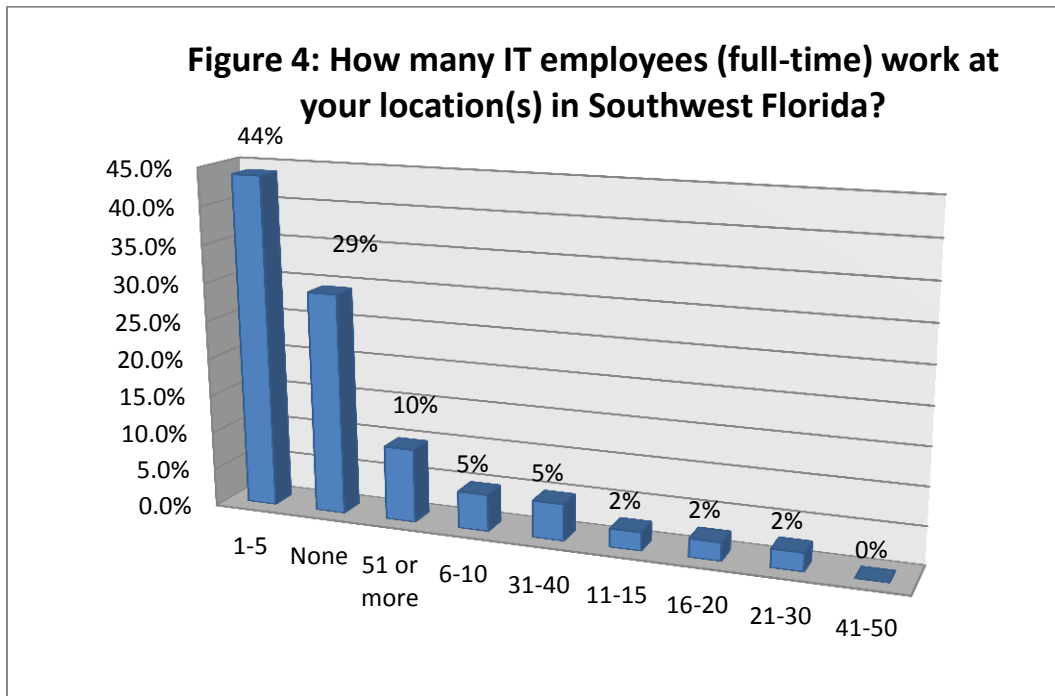
Table 4: Full-Time IT Employees in SW Florida	Number of Responses	Percent
None	12	29.3%
1-5	18	43.9%
6-10	2	4.9%
11-15	1	2.4%
16-20	1	2.4%
21-30	1	2.4%
31-40	2	4.9%
41-50	0	0.0%
51 or more	4	9.8%

How many IT employees (part-time) work at your location(s) in Southwest Florida?

Consistent with the results above, 71% of the organizations responding reported that they employed no part-time IT management workforce. Of the 24% who did report having part time IT professionals on staff, the total number per employer was only 1-5 (Figure 5 and Table 5).

Figure 5: How many IT employees (part-time) work at your location(s) in Southwest Florida?
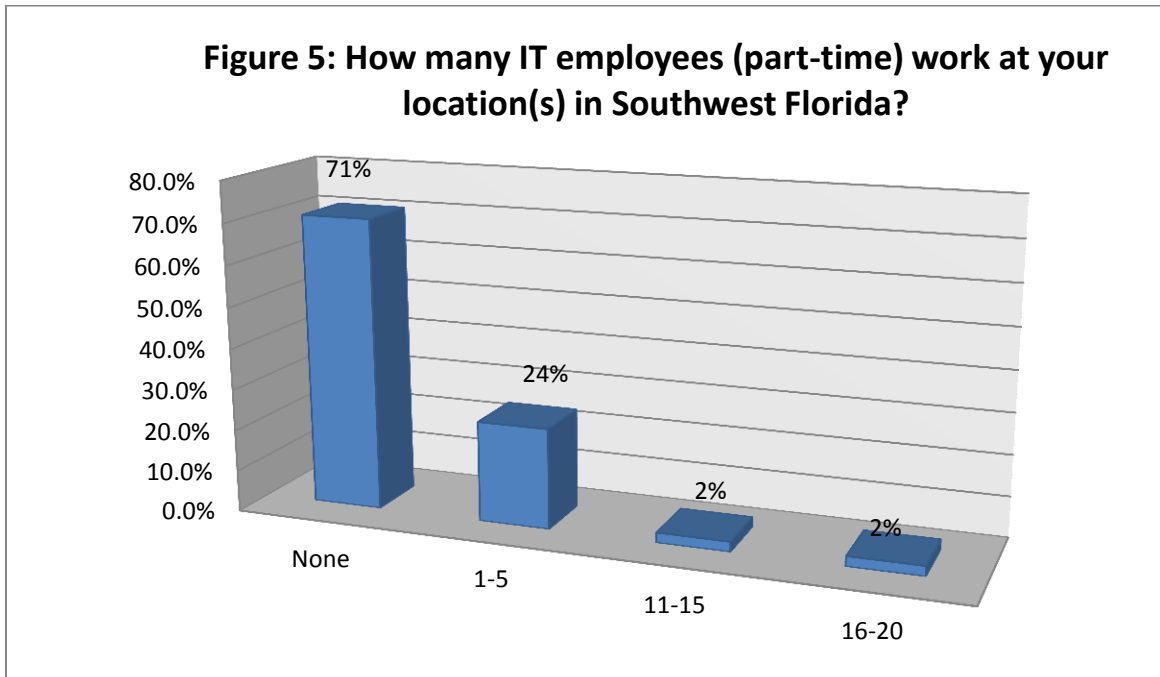
Table 5: Part-Time IT Employees in SW Florida	Number of Responses	Percent
None	29	70.7%
1-5	10	24.4%
6-10	0	0.0%
11-15	1	2.4%
16-20	1	2.4%
21-30	0	0.0%
31-40	0	0.0%
41-50	0	0.0%
51 or more	0	0.0%

What are the major IT job classifications or positions employed by your company in Southwest Florida? (Select all that apply.)

As shown below in Figure 6 and Table 6, 19 major IT job classifications were identified. The classification group requiring the most positions is the technology support area including help desk, network support, application software support, multimedia support, and operating systems support. Database administration was also cited as an area of high demand. Data analytics, network security, and programming, though significant, required relatively fewer positions.

Figure 6: What are the major IT job classifications or positions employed by your company in Southwest Florida?

Position	%
User Support (help desk)	61%
Network, Telecom, Wireless, Mobility Services	61%
Database, Document, Content Management	61%
Application Software	56%
Operating Systems	56%
Management	56%
System Analyst	51%
Web Development	34%
Multimedia Specialist	32%
Computer Programmer	29%
Security Analyst	29%
Enterprise Architecture	29%
Graphics Designer	27%
Systems Engineer/Architect	27%
Business Analyst	24%
Data Warehouse Analyst	17%
Other	12%
Software Quality Assurance Engineeer	12%
Digital Visualization	7%

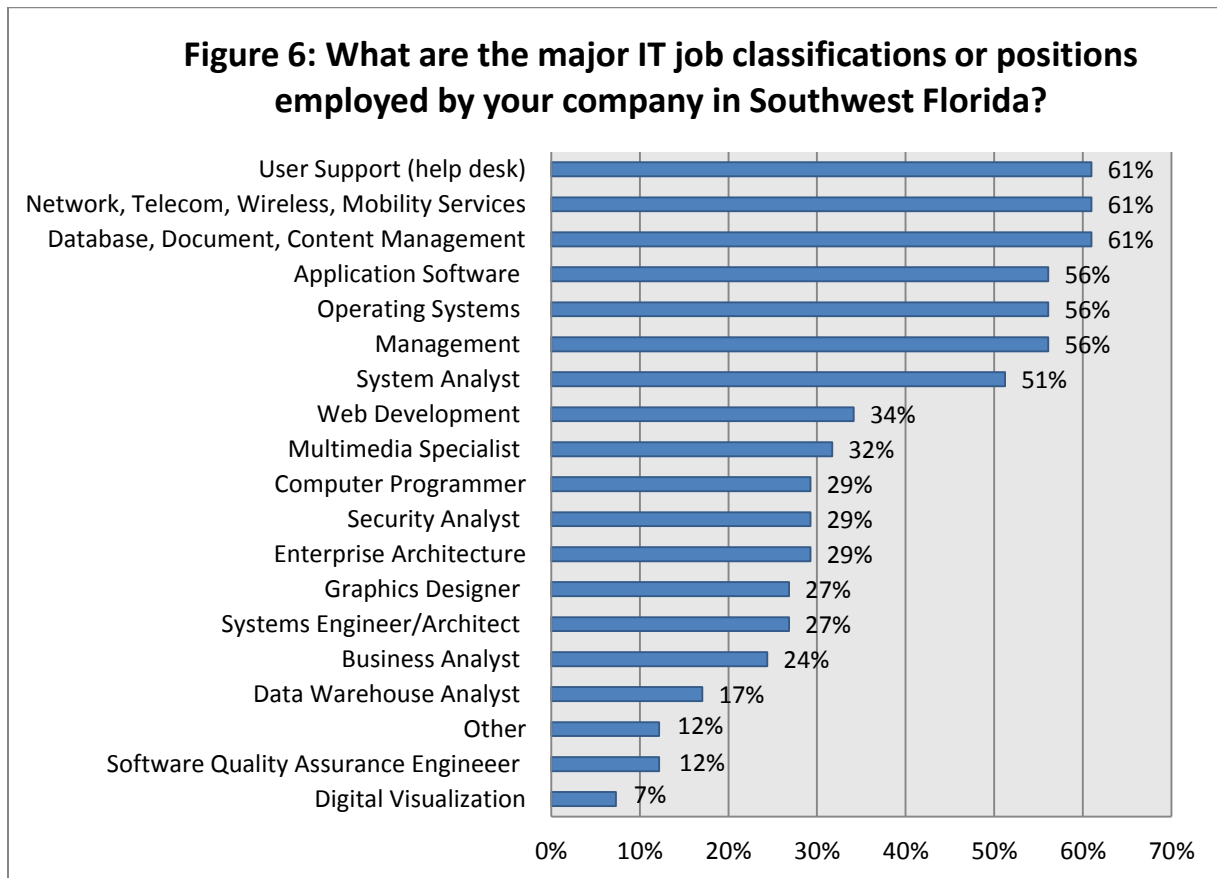| Table 6: Major IT Job Classifications by your Company in SW Florida	Number of Responses	Percent
Database, Document, Content Management (operations/administration/management/specialist)	25	61.0%
Network, Telecom, Wireless, Mobility Services (operations/administration/management/specialist	25	61.0%
User Support (help desk)	25	61.0%
Management (policy/planning/program or project)	23	56.1%
Operating Systems (operations/administration/management/specialist)	23	56.1%
Application Software (operations/administration/management/specialist)	23	56.1%
System Analyst (audit/troubleshoot/analyze)	21	51.2%
Web Development (website design/development)	14	34.1%
Multimedia Specialist (audio/video recording/editing/streaming)	13	31.7%
Enterprise Architecture (domain infrastructure)	12	29.3%
Security Analyst (operations/administration/management/specialist)	12	29.3%
Computer Programmer (application design/development)	12	29.3%
Systems Engineer/Architect (system design/development)	11	26.8%
Graphics Designer (digital design and graphics/branding)	11	26.8%
Business (intelligence) Analyst (research, collate and synthesize trend data()	10	24.4%
Data Warehouse Analyst (operations/administration/management/specialist)	7	17.1%
Software Quality Assurance Engineer (test, analyze and document program functionality)	5	12.2%
Other *	5	12.2%
Digital Visualization (produce and optimize digital diagrams, maps, animations, 3D models and 360 panorama)	3	7.3%

*Other:
- Most of it contracted out
- Web design content, Editing, Social Media, e-newsletters
- a help desk tech is expected to have good knowledge of web development, databases and wireless
- none
- we have front desk and management jobs that require computer skills, but have no IT dedicated person

Have you had difficulty filling your IT positions in Southwest Florida?

While a majority of respondents (68%) indicated no difficulty in filling IT positions, a significant number of the companies (32%) did report that IT positions were difficult to fill in Southwest Florida (Figure 7 and Table 7).

Figure 7: Have you had difficulty filling your IT positions in Southwest Florida?
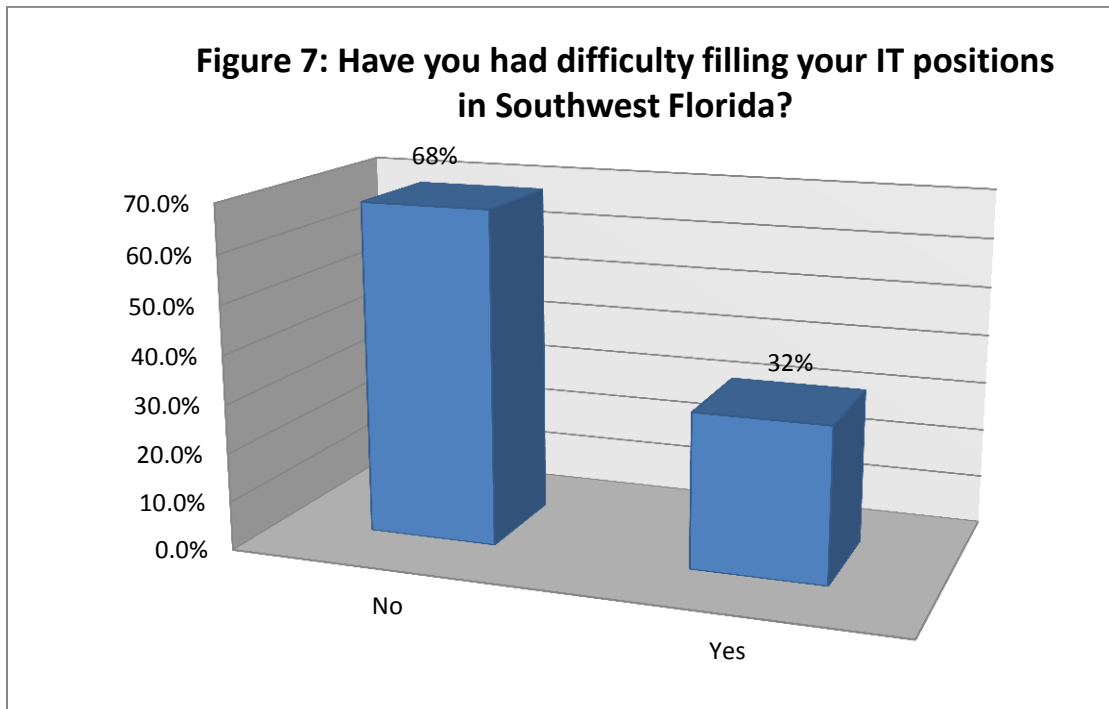
Table 7: Difficulty Filling IT Positions in SW Florida	Number of Responses	Percent
No	28	68.3%
Yes	13	31.7%

What IT positions/jobs are you having difficulty filling? (Select all that apply.)

Employers who did cite difficulty in filling positions found programmers to be the most difficult to find (54% of employers who reported difficulty), with network support and database administrative technicians nearly as difficult to find (Figure 8 and Table 8).

Figure 8: What IT positions/jobs are you having difficulty filling?

Position	Percentage
Computer Programmer	54%
Network, Telecom, Wireless, Mobility Services	46%
Database, Document, Content Management	46%
Application Software	38%
System Analyst	31%
Operating Systems	31%
Systems Engineer/Architect	23%
Security Analyst	23%
Enterprise Architecture	15%
Management	15%
Other	8%
User Support	8%
Digital Visualization	8%
Multimedia Specialist	8%
Graphics Designer	8%
Web Development	8%
Software Quality Assurance Engineeer	8%
Business Analyst	8%
Data Warehouse Analyst	8%

Table 8: Difficult to Fill IT Positions/Jobs	Number of Responses	Percent
Computer Programmer (application design/development)	7	53.8%
Database, Document, Content Management (operations/administration/management/specialist)	6	46.2%
Network, Telecom, Wireless, Mobility Services (operations/administration/management/specialist	6	46.2%
Application Software (operations/administration/management/specialist)	5	38.5%
Operating Systems (operations/administration/management/specialist)	4	30.8%
System Analyst (audit/troubleshoot/analyze)	4	30.8%
Security Analyst (operations/administration/management/specialist)	3	23.1%
Systems Engineer/Architect (system design/development)	3	23.1%
Management (policy/planning/program or project)	2	15.4%
Enterprise Architecture (domain infrastructure)	2	15.4%
Data Warehouse Analyst (operations/administration/management/specialist)	1	7.7%
Business (intelligence) Analyst (research, collate and synthesize trend data()	1	7.7%
Software Quality Assurance Engineer (test, analyze and document program functionality)	1	7.7%
Web Development (website design/development)	1	7.7%
Graphics Designer (digital design and graphics/branding)	1	7.7%
Multimedia Specialist (audio/video recording/editing/streaming)	1	7.7%
Digital Visualization (produce and optimize digital diagrams, maps, animations, 3D models and 360 panorama)	1	7.7%
User Support (help desk)	1	7.7%
Other *	1	7.7%

*Other:
- qualified individuals with multiple knowledge.

In your opinion, what will be the fastest growing IT positions/jobs between 2014 and 2020? (Select all that apply.)

As shown below in Figure 9 and Table 9, employers expect those positions relating to network systems to be the fastest growing with web development, database administration, and security also rapidly growing. They expect these positions to grow at least twice as fast as other IT-related areas such as programming and multimedia specialists.

Figure 9: In your opinion, what will be the fastest growing IT positions/jobs between 2014 and 2020?

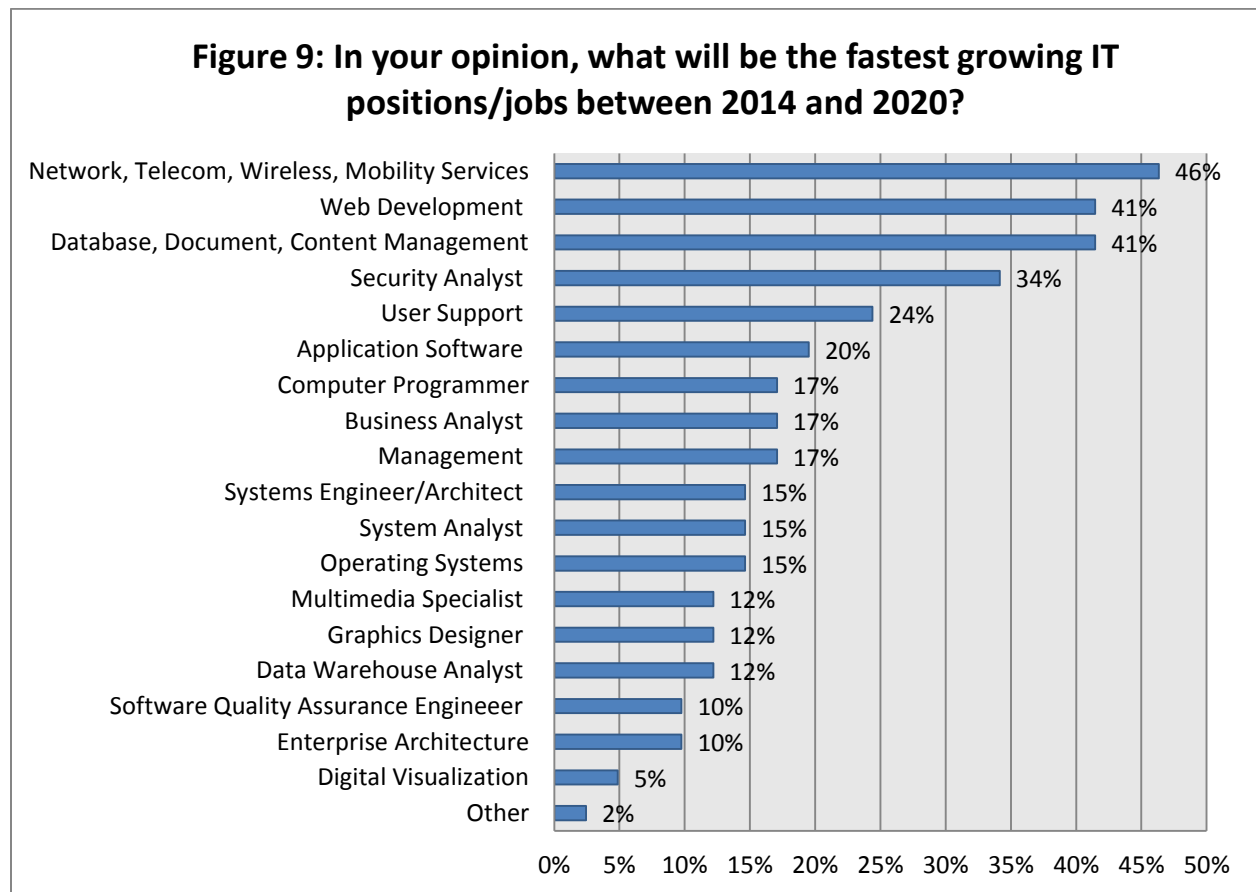| Position	Percentage
Network, Telecom, Wireless, Mobility Services	46%
Web Development	41%
Database, Document, Content Management	41%
Security Analyst	34%
User Support	24%
Application Software	20%
Computer Programmer	17%
Business Analyst	17%
Management	17%
Systems Engineer/Architect	15%
System Analyst	15%
Operating Systems	15%
Multimedia Specialist	12%
Graphics Designer	12%
Data Warehouse Analyst	12%
Software Quality Assurance Engineeer	10%
Enterprise Architecture	10%
Digital Visualization	5%
Other	2%

Table 9: Fastest Growing IT Positions Between 2014 and 2020	Number of Responses	Percent
Network, Telecom, Wireless, Mobility Services (operations/administration/management/specialist	19	46.3%
Database, Document, Content Management (operations/administration/management/specialist)	17	41.5%
Web Development (website design/development)	17	41.5%
Security Analyst (operations/administration/management/specialist)	14	34.1%
User Support (help desk)	10	24.4%
Application Software (operations/administration/management/specialist)	8	19.5%
Management (policy/planning/program or project)	7	17.1%
Business (intelligence) Analyst (research, collate and synthesize trend data()	7	17.1%
Computer Programmer (application design/development)	7	17.1%
Operating Systems (operations/administration/management/specialist)	6	14.6%
System Analyst (audit/troubleshoot/analyze)	6	14.6%
Systems Engineer/Architect (system design/development)	6	14.6%
Data Warehouse Analyst (operations/administration/management/specialist)	5	12.2%
Graphics Designer (digital design and graphics/branding)	5	12.2%
Multimedia Specialist (audio/video recording/editing/streaming)	5	12.2%
Enterprise Architecture (domain infrastructure)	4	9.8%
Software Quality Assurance Engineer (test, analyze and document program functionality)	4	9.8%
Digital Visualization (produce and optimize digital diagrams, maps, animations, 3D models and 360 panorama)	2	4.9%
Other*	1	2.4%

*Other:
- App Development, Project Management

Please list up to five new emerging jobs in IT that could benefit your organization.

While the respondents identified many areas they viewed as emergent, no dominant pattern suggested itself from the data. Many saw mobile (and other) application development and related technologies as continuing to emerge along with accounting, project management, estimating, and other tools for enhancing business efficiency and/or productivity as important.

1 –
- Cloud computer engineering
- Data processing
- Electronic waste disposal planner
- Fundraising software specialist
- Application analyst role with an increasing emphasis on Business Process Improvement skills
- Mobile applications (3 counts)
- Project management
- SAP application analyst
- Security analyst
- VM Virtualization (2 counts))
- Accounting software management
- App developer
- Estimating
- Mobile device programmer

2 –
- Automated OS deployment specialist
- BCP planning
- Digital visualization
- Network analysts with an increasing emphasis on security
- GIS
- ORACLE apps
- Virtualization such as knowledge utilizing VM Ware
- Web designer
- Accounting

- Adaptive web design
- Developing operations software linked to accounting

3 –

- Content management systems
- Data mining
- Data integration specialist
- Mobile app developer
- Management training
- Marketing
- PMo
- Construction foreman
- Development of system wide info gathering and analysis

4 –

- Coordinate data
- Network solutions
- eCommerce
- Improve field ready software and record keeping to be operated by foreman in the field

5 –

- Understanding how to navigate multi-media
- Improve tracking equipment in the field with GPS systems

What type of formal training or college degrees would you recommend to potential IT job candidates?

This question allowed respondents to indicate their preferences in an open-ended fashion. A majority prefers at least two years of technical IT training. Ideally, applicants should hold a baccalaureate degree either in a computer science discipline or in business. Additionally, some respondents specifically recommended that applicants hold one or more appropriate recognized industry certifications.

- BS degree in an information technology discipline such as Information Systems, Systems Analysis, Programming, Security, or general Computer Science (14 Counts)
- AS degree in an information technology discipline such as Computer Networking, Network Administration, Applications Support, Programming, Security, or general Computer Science (10 Counts)
- Industry Certifications (5 counts)
- BS in Business (1 Count)
- AS in Business (1 Count)
- Technical School Certificate (1 Counts)
- Field Experience (1 count)

What type of industry certifications would you recommend to potential IT job candidates?

There is a clear preference noted for Cisco, Microsoft, and Comp-TIA certifications. The certification desired is dependent upon the nature of the job to be performed.

- Microsoft, various certifications (15 counts)
- Cisco, various certifications (10 counts)
- A+ (6 counts)
- Network+ (5 counts)
- Security + (5 counts)
- Project Management Institute, various certifications (5 counts)
- VM Ware, various certifications (2 counts)
- Adobe
- Certified Ethical Hacker
- Quickbooks

- Experience
- Certs do not mean much other than you understand a system that you studied. What we need is candidates with overall knowledge of hard ware, servers, PCs, tablets and the ability to understand how to gather and use information for the enterprises profit and to stay in compliance with the governments ever increasing compliance requirements by developing or adapting to software.
- This will continue to change as time moves forward. I would suggest having as many current Microsoft certifications as possible in their area of interest. I would also suggest those in the creative fields to have Adobe certs as well. Finally hardware certs will be necessary for anyone that wants to work on the hardware or networking side of the house.

IV- Contract for Services

Are you able to find IT contractor service providers in Southwest Florida that meet your company's needs?

Overwhelmingly, respondents reported no difficulty in being able to find qualified companies to outsource IT management to (Figure 10 and Table 10).

Figure 10: Are you able to find IT contractor service providers in Southwest Florida that meet your company's needs?
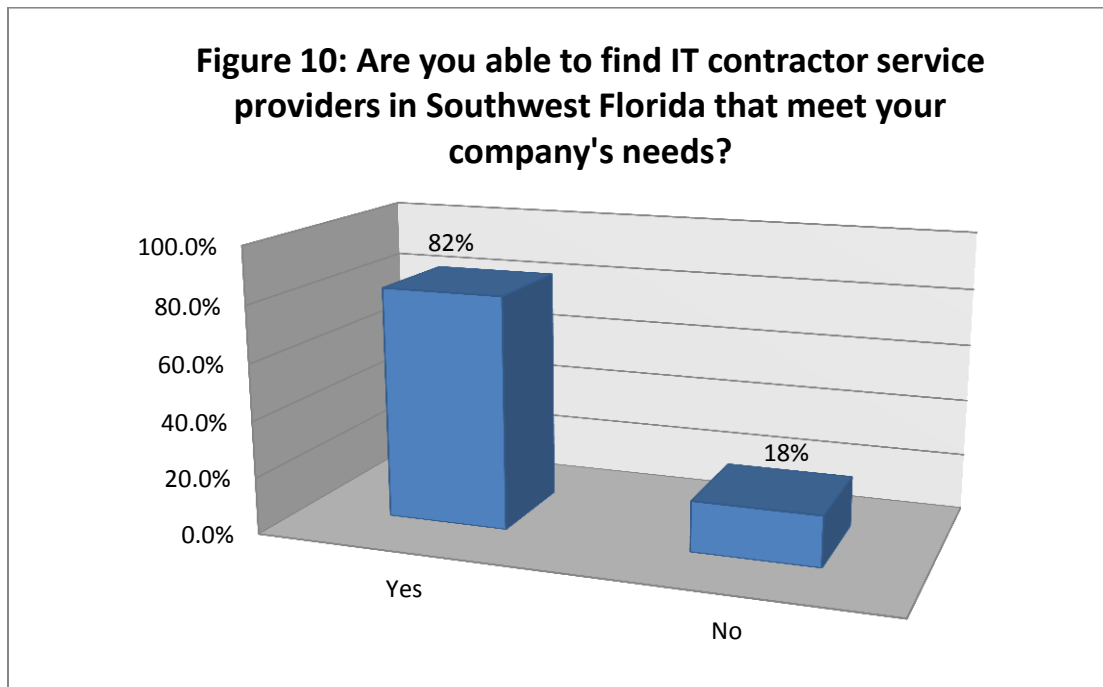
Table 10: Finding IT Contractor Service Providers in SW Florida	Number of Responses	Percent
Yes	23	82.1%
No	5	17.9%

What services are the most difficult to find?

- 1. Sever and PC hardware set up and management. 2. Ability to understand and develop software and link to off the shelf software being used. 3. Able to review custom software already being used and able to add to this software.
- Most external services are obtained via the national marketplace - including IT Risk assessment and auditing services, application software vendors/providers, ASP providers. We do obtain local service for offsite data storage, limited PCI scanning, wiring services.
- Network and software engineer
- Programming, Microsoft specialists
- SAP apps resources

V- Software Applications

What software or program applications are currently being used in your company? (Select all that apply.)

As shown below in Figure 11 and Table 11, effectively all companies reported using office productivity software. More than 50% also reported using accounting, database management, and/or web content management software. About a quarter reported using more specialized software such as statistical analysis software and/or enterprise resource planning software. Several used some industry or company specific software.
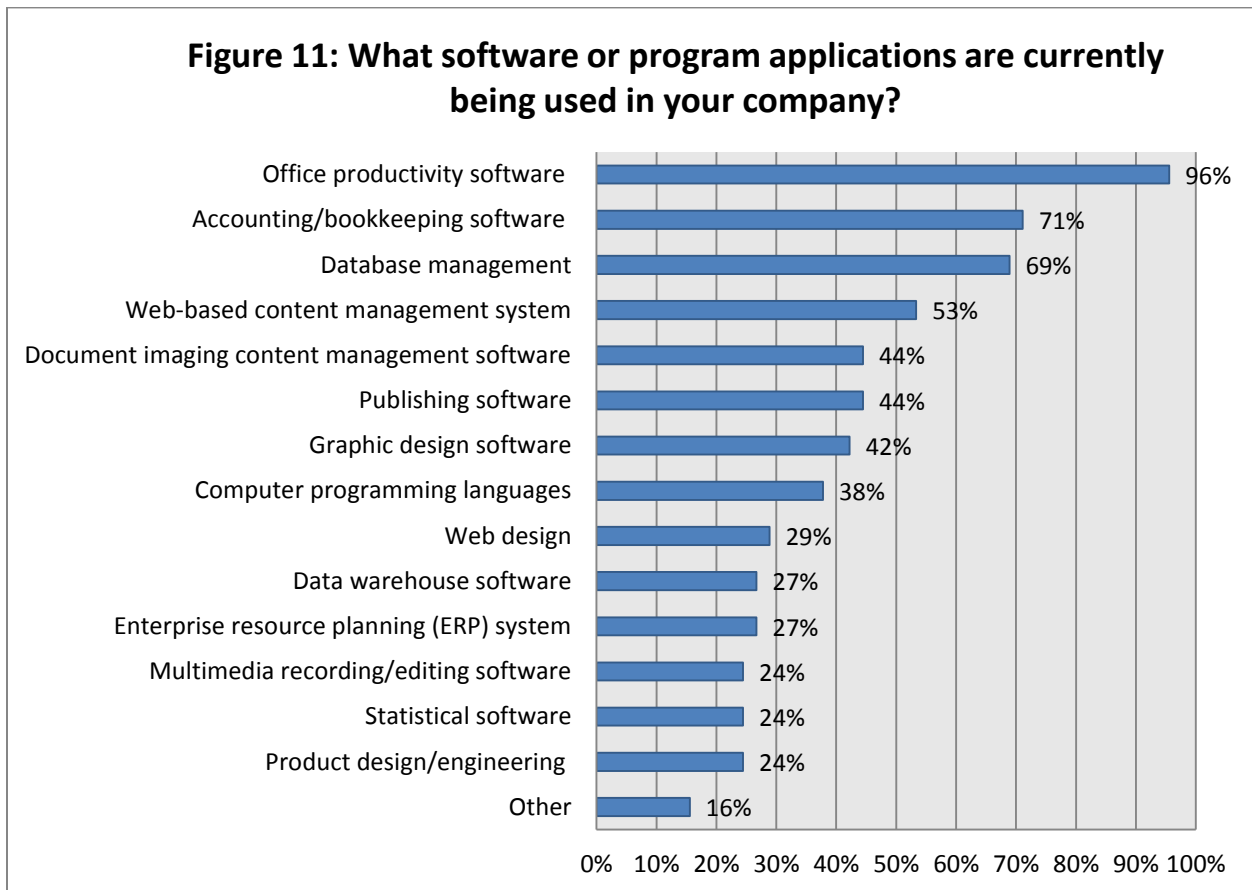
Figure 11: What software or program applications are currently being used in your company?

Software	Percentage
Office productivity software	96%
Accounting/bookkeeping software	71%
Database management	69%
Web-based content management system	53%
Document imaging content management software	44%
Publishing software	44%
Graphic design software	42%
Computer programming languages	38%
Web design	29%
Data warehouse software	27%
Enterprise resource planning (ERP) system	27%
Multimedia recording/editing software	24%
Statistical software	24%
Product design/engineering	24%
Other	16%

Table 11: Software or Program Applications Being Used in Your Company	Number of Responses	Percent
Office productivity software (Word, Excel, PowerPoint, Outlook, etc.)	43	95.6%
Accounting/bookkeeping software (Quickbooks, Peachtree, Multiview, etc.)	32	71.1%
Database management (MySQL, Microsoft SQL Server, Sybase, DB2, Oracle SQL, etc.)	31	68.9%
Web-based content management system (portal / user interface / learning system)	24	53.3%
Publishing software (Adobe InDesign, Microsoft Publisher, QuarkXPress, etc.)	20	44.4%
Document imaging content management software	20	44.4%
Graphic design software (Adobe Creative Suite, CorelDraw Graphics Suite, etc.)	19	42.2%
Computer programming languages (Java, Visual Basic, C#, C++, etc.)	17	37.8%
Web design (Dreamweaver, CoffeeCup, Aptana, Komodo Edit, etc.)	13	28.9%
Enterprise resource planning (ERP) system	12	26.7%
Data warehouse software (business intelligence tools / analytics)	12	26.7%
Product design/engineering (AutoCAD, Revit, AutoSketch, DesignCAD, etc.)	11	24.4%
Statistical software (SPSS, SAS, Minitab, Tableau, etc.)	11	24.4%
Multimedia recording/editing software (Sony Vegas Pro, Adobe Premiere Elements, etc.)	11	24.4%
Other *	7	15.6%

*Other:
- EMR, Clinical, eMAR, Time & Attendance, Payroll, HR,
- ESRI.
- Geographic Information Systems (GIS)
- In house software
- LOTUS NOTES
- Not sure about all systems as my IT consultant does this work
- PMS, CI-TY, Delphi, Springer Miller, Guestware, Diplomat, Sceris, Micros
- Sharepoint
- Student Information System and HR (ERP); Learning Management System (Blackboard)
- Tax Software (Drake)
- We use the Opera hotel front desk operating system that is supported by Micros and Wyndham / Ramada Worldwide. We have 1 systems expert in house...the hotel manager.

What type of software application training do you offer employees? (Select all that apply.)

The results shown in Figure 12 and Table 12 show that most of the training takes place on those software applications used in broad areas of the company, potentially by those who may lack computer proficiency. More specific applications require less training possibly because users are more likely already to be familiar with the programs.
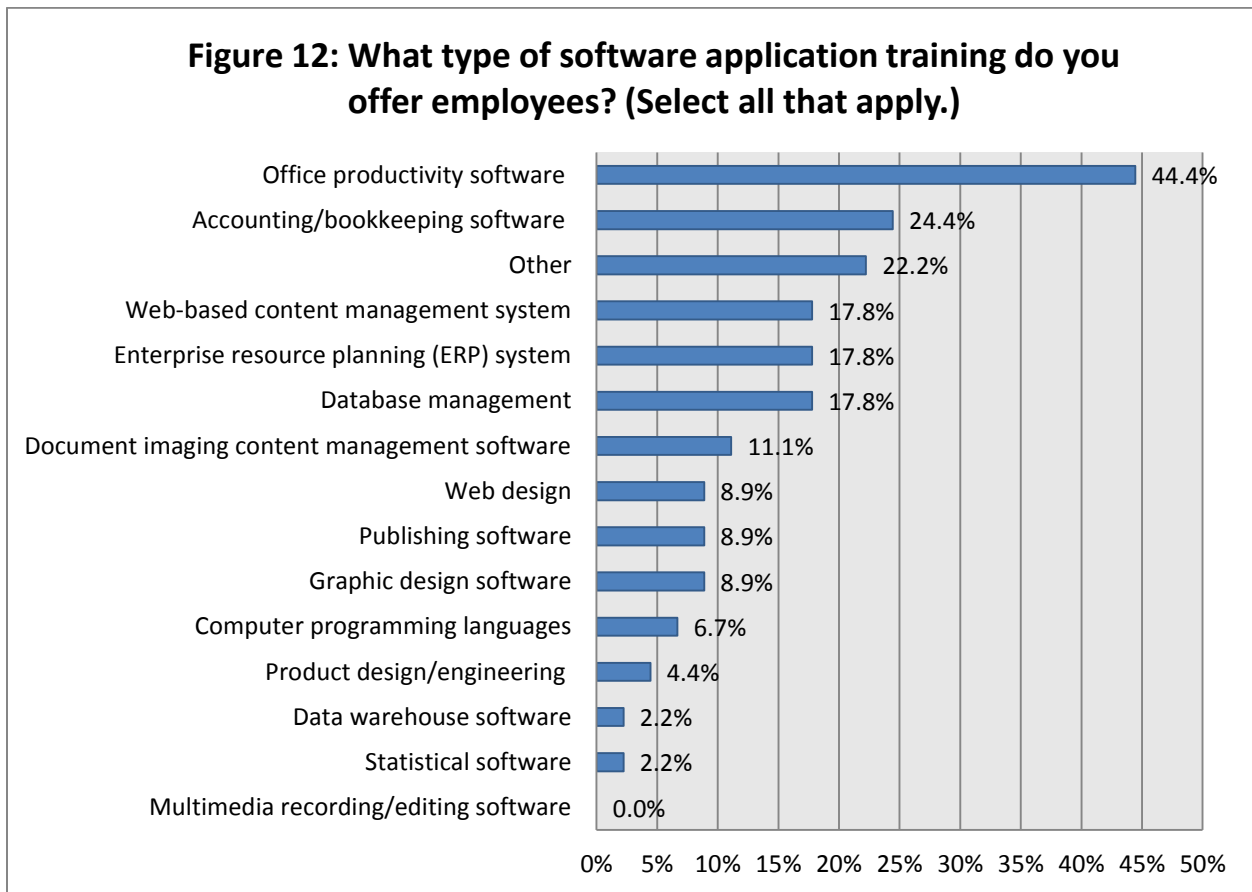

Figure 12: What type of software application training do you offer employees? (Select all that apply.)

Category	Percentage
Office productivity software	44.4%
Accounting/bookkeeping software	24.4%
Other	22.2%
Web-based content management system	17.8%
Enterprise resource planning (ERP) system	17.8%
Database management	17.8%
Document imaging content management software	11.1%
Web design	8.9%
Publishing software	8.9%
Graphic design software	8.9%
Computer programming languages	6.7%
Product design/engineering	4.4%
Data warehouse software	2.2%
Statistical software	2.2%
Multimedia recording/editing software	0.0%

Table 12: Software or Program Applications Being Used in Your Company	Number of Responses	Percent
Office productivity software (Word, Excel, PowerPoint, Outlook, etc.)	20	44.4%
Accounting/bookkeeping software (Quickbooks, Peachtree, Multiview, etc.)	11	24.4%
Other *	10	22.2%
Database management (MySQL, Microsoft SQL Server, Sybase, DB2, Oracle SQL, etc.)	8	17.8%
Enterprise resource planning (ERP) system	8	17.8%
Web-based content management system (portal / user interface / learning system)	8	17.8%
Document imaging content management software	5	11.1%
Graphic design software (Adobe Creative Suite, CorelDraw Graphics Suite, etc.)	4	8.9%
Publishing software (Adobe InDesign, Microsoft Publisher, QuarkXPress, etc.)	4	8.9%
Web design (Dreamweaver, CoffeeCup, Aptana, Komodo Edit, etc.)	4	8.9%
Computer programming languages (Java, Visual Basic, C#, C++, etc.)	3	6.7%
Product design/engineering (AutoCAD, Revit, AutoSketch, DesignCAD, etc.)	2	4.4%
Statistical software (SPSS, SAS, Minitab, Tableau, etc.)	1	2.2%
Data warehouse software (business intelligence tools / analytics)	1	2.2%
Multimedia recording/editing software (Sony Vegas Pro, Adobe Premiere Elements, etc.)	0	0.0%

*Other:
- Not applicable to my work
- SIS/ERP training; Email training; LMS training
- Tax Software (Drake)
- Train users on in-house applications
- Training is not available in house. Employees are hired based on their ability to use the software we already have in place. If new software were acquired, training would be arranged either through the vendor for the software or an out sourced training organization.
- We offer an in-house software and mail system created nationally for our international organization.We train all employees on this system. Lotus Notes.
- cross training offered
- in house training on Opera
- no software training

What basic or fundamental computer software and applications knowledge and skills do you require for an average entry-level employee in your company?

The results of this question closely mirror the results of the previous questions on degree attainment, industry certification attainment, and training. Employers require that IT employees demonstrate the appropriate skill level, with or without an industry certification or a specific degree or training certificate. Those employed in non-IT functions but using hardware and software may require application specific trainings and updates.

- Basic computer skills including Microsoft Office and Microsoft Productivity Suit – Word, Excel, PowerPoint, Outlook ; Adobe; and Quickbooks (26 counts)
- More advanced skills including those covered by industry certifications such as A+, Security+, and CCNA; operating systems such as Apple IOS and Microsoft; and language skills such as Java, SQL, and HTML (5 counts).

VI- Internships

Do you currently offer internships for IT students?

As shown below in Figure 13 and Table 13, 20% of employers provide internship opportunities to students in IT fields.

Figure 13: Do you currently offer internships for IT students?
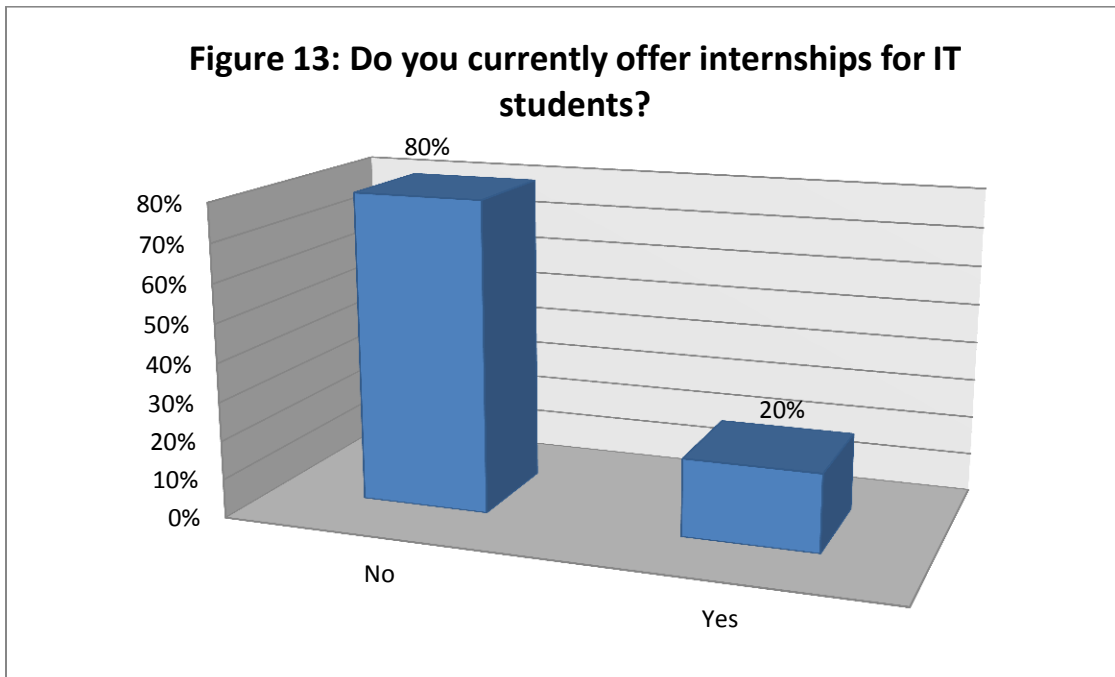
Table 13: Offering Internships for IT Students	Number of Responses	Percent
No	36	80%
Yes	9	20%

How many internships do you anticipate establishing annually?

The number of IT internships varies by company with 56% of respondents offering between 0 and 3 internship opportunities per year and 44% offering 4 or more internship opportunities per year (Figure 14 and Table 14).
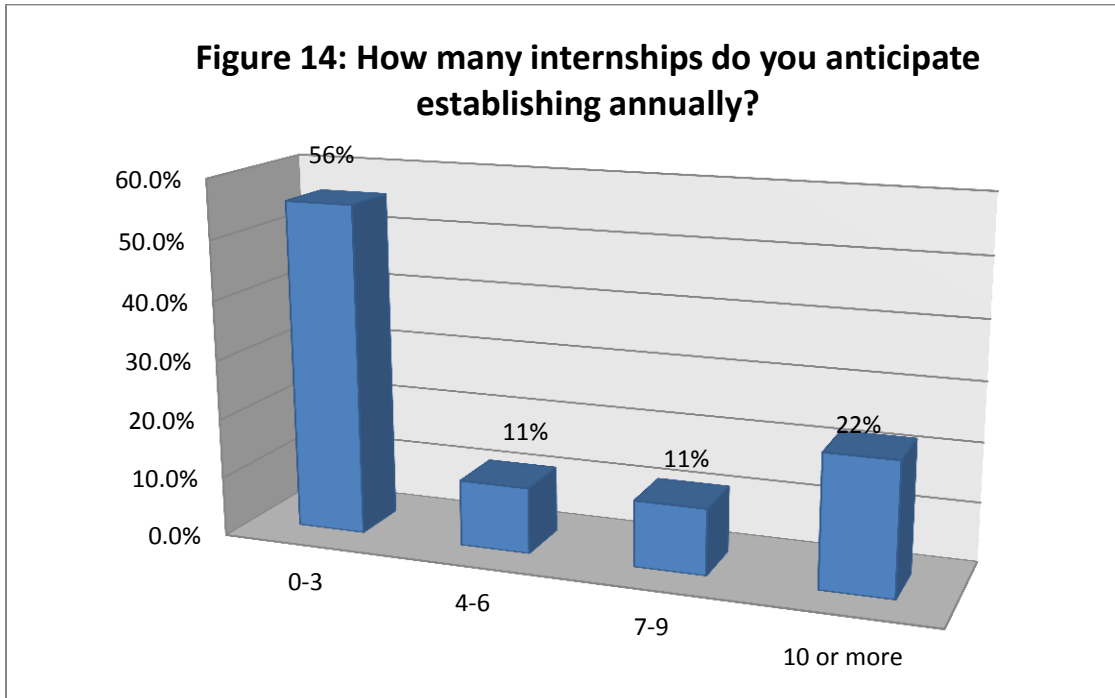
Figure 14: How many internships do you anticipate establishing annually?

Table 14: Establishing Internships Annually	Number of Responses	Percent
0-3	5	55.6%
4-6	1	11.1%
7-9	1	11.1%
10 or more	2	22.2%

What IT positions/jobs would you expect to fill with interns? (Select all that apply.)

As shown below in Figure 15 and Table 15, a majority of employers who offered internships report that internships can result in positions in the network and user-support functions. Others include programming, database management, and security.
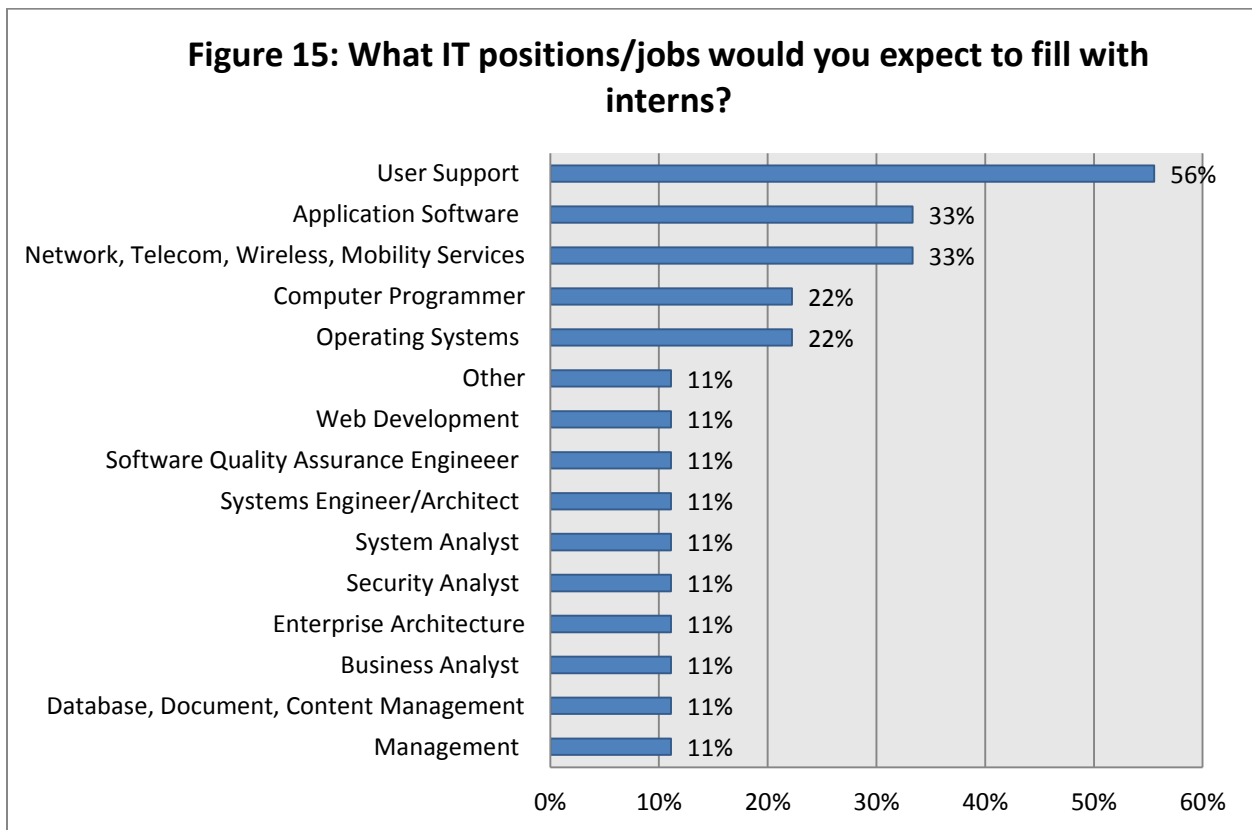
Figure 15: What IT positions/jobs would you expect to fill with interns?

Position	Percentage
User Support	56%
Application Software	33%
Network, Telecom, Wireless, Mobility Services	33%
Computer Programmer	22%
Operating Systems	22%
Other	11%
Web Development	11%
Software Quality Assurance Engineeer	11%
Systems Engineer/Architect	11%
System Analyst	11%
Security Analyst	11%
Enterprise Architecture	11%
Business Analyst	11%
Database, Document, Content Management	11%
Management	11%

Table 15: Expecting to Fill IT Positions/jobs with Interns	Number of Responses	Percent
Use Support (help desk)	5	55.6%
Network, Telecom, Wireless, Mobility Services (operations / administration /management / specialist)	3	33.3%
Application Software (operations / administration / management / specialist)	3	33.3%
Operating Systems (operations / administration / management / specialist)	2	22.2%
Computer Programmer (application design / development)	2	22.2%
Management (policy / planning /program or project)	1	11.1%
Database, Document, Content Management (operations / administration / management / specialist)	1	11.1%
Business (Intelligence) Analyst (research, collate and synthesize trend data)	1	11.1%
Enterprise Architecture (domain infrastructure)	1	11.1%
Security Analyst (operations / administration / management / specialist)	1	11.1%
Systems Analyst (audit / troubleshoot / analyze)	1	11.1%
Systems Engineer / Architect (system design / development)	1	11.1%
Software Quality Assurance Engineer (test, analyze and document program functionality)	1	11.1%
Web Development (website design / development)	1	11.1%
Other*	1	11.1%
Data Warehouse Analyst (operations / administration / management / specialist)	0	0.0%
Graphics Designer (digital design and graphics / branding)	0	0.0%
Multimedia Specialist (audio/video recording / editing / streaming)	0	0.0%
Digital Visualization (produce and optimize digital diagrams, maps, animations, 3D models and 360 panorama)	0	0.0%

*Other:
- Surplus computer recycling.

VII- Comments

- I believe that in today's market it is critical that you have certifications and the ability to produce. For any high level IT position today I would be looking for someone that could provide me with real examples of what they can produce in a proactive manner rather than just how they can react to problems.
- Leave the area to find your own voice. Then return if you must.
- Thank you for the opportunity to participate in this survey. I see great benefit for the Southwest Florida IT community.
- The more knowledge on any subject that a student can attain will be in their best interest going forward. Sorry we can't help more.
- There is a need for IT students to fill jobs in rural Hendry County but must be able to work in a agriculture setting and rural atmosphere with high work ethic and ambition
- We are very much encouraged by progress made in last 5 years or so with IT education provided by the local universities/colleges.
- create partnerships with local businesses for intern ships
- include Quickbooks training in college courses
- it is the future of my industry which is sale and marketing of Real Estate.
- knowledge of big data analytics, virtualization, cloud computing
- lack of skilled resources in Southwest Florida

Conclusion

This Workforce Now study provided primary research on Southwest Florida's Information Technology (IT) workforce requirements including use of contractors, full and part-time employment, IT occupations, difficult to fill IT employment, fastest growing IT positions, emerging IT positions, applications, training, certifications, and use of internships. This was a key Southwest Florida Workforce Now study that was proposed at the 2013 Workforce Summit.

APPENDIX

Workforce Now IT Survey Questions

Workforce Now is a regional research initiative conducted by FGCU, Florida SouthWestern State College, and Hodges University.   This study is not part of a marketing pitch. This is a true research project to help students, families, educators, and companies understand the opportunities and business requirements for jobs in the information technology (IT) area in Southwest Florida.

You have been selected as a key contact for the study by your company, as a representative of one of 400 companies selected out of the thousands of companies in Southwest Florida . The study will help to identify the current and future talent IT requirements for companies in the Southwest Florida as a way to strengthen the local economy and provide a higher-skilled workforce.

Your participation is vital to the success of this study; and we will share the results of the study in a report that will be emailed to you during the summer of 2014 upon the competition of the study.
Workforce Now Sponsors and Southwest Florida Regional Technology Partnership encourage your participation in the regional IT survey.

Question 1: How does your company currently manage your Information Technology (IT) functions including hardware, software, and training?

    a) In-house
    b) Contract for services
    c) Combination of in-house and contract for services
    d) Other, Explain_____.

Branch when response to Question 1 is EITHER a) In-house –OR– c) Combination of in-house and contract for services:

Question 1a: How many IT employees work at your locations in Southwest Florida?

    Full-time _____
    Part-time_____

Question 1b: What are the major IT job classifications or positions employed by your company in Southwest Florida?
(NOTE: Some answer options presented, along with several fill-in text boxes.)

1. IT Manager (policy/planning/program or project)
2. IT Network Services (operations/administration/management/specialist)
3. IT Data Management (operations/administration/management/specialist)
4. IT Operating Systems (operations/administration/management/specialist)
5. IT Application Software (operations/administration/management/specialist)
6. IT Security (operations/administration/management/specialist)
7. IT Enterprise Architecture (domain infrastructure)
8. IT System Analyst (analysis/troubleshooting/auditing)
9. IT Software Engineer (application design/development)
10. IT Web Development (website design/development)
11. IT Multimedia Specialist (audio/video/recording/editing/streaming)
12. IT Graphics Designer (digital design/marketing/branding)
13. IT User Support (helpdesk)
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

Question 1c: Have you had difficulty filling your IT Positions in Southwest Florida?

    a) Yes
    b) No

If answer to question 1c is "Yes," then show Question 1d; otherwise, skip Question 1d:

Question 1d: What IT positions/jobs are you having difficulty filling?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Question 1e: In your opinion, what IT positions/jobs will be the fastest growing between 2014 and 2020?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Question 1f: What are the new emerging jobs in IT that could benefit your organization?

1. _____
2. _____
3. _____
4. _____
5. _____

Question 1g: What type of training, industry certifications, certificates, or degrees would you recommend to potential IT job candidates?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Branch when response to Question 1 is b) Contract for services:

Question 1a: Are you able to find IT contractor service providers in Southwest Florida that meet your company needs? Yes or No

Question 1b: If you are having trouble finding IT contractor services, what services are most difficult to find? Explain. _____

The following questions are to be answered by all respondents:

Question 2: What software or program applications are currently being used in your company? (Check all that apply)

a) Office productivity software (Word, Excel, PowerPoint, Outlook, etc.)
b) Accounting/bookkeeping software (QuickBooks, Peachtree, Multliview, etc.)
c) Product/building design/engineering (AutoCAD, Revit, AutoSketch, DesignCAD, etc.)
d) Graphic design software (Adobe Creative Suite, CorelDraw Graphics, etc.)
e) Data base management (MySQL, Microsoft SQL Server, Sybase, DB2, Oracle SQL, etc.)
f) Publisher (InDesign, Publisher, etc.)
g) Web design (Dreamweaver, etc.)
h) Document/record management software
i) Statistical software (SPSS, SAS, Minitab, Tableau, etc.)
j) Multimedia recording/editing software (Sony Vegas Pro, Adobe Premiere Elements, etc.)
k) Enterprise resource planning (ERP) system
l) Content management system
m) Other, Explain:_____.

Question 3: What type of software and application training do you offer to employees?

1. None
2. _____
3. _____
4. _____
5. _____
6. _____

Question 4: What basic or fundamental computer software and applications knowledge and skills do you require for an average entry level employee outside of IT? Explain. _____

Question 5: Do you currently offer internships for IT students? Yes or No

Question 6: Do you have any other recommendations, statements, or comments concerning IT employment or education in Southwest Florida?
_____

We are building an IT job description file for hard-to-fill IT positions that we can share with educators and summarize in the report.   Would you be willing to share some of these job descriptions with the research team? If so, would you email them to Office of Institutional Effectiveness and Research, Hodges University at ie@hodges.edu.