

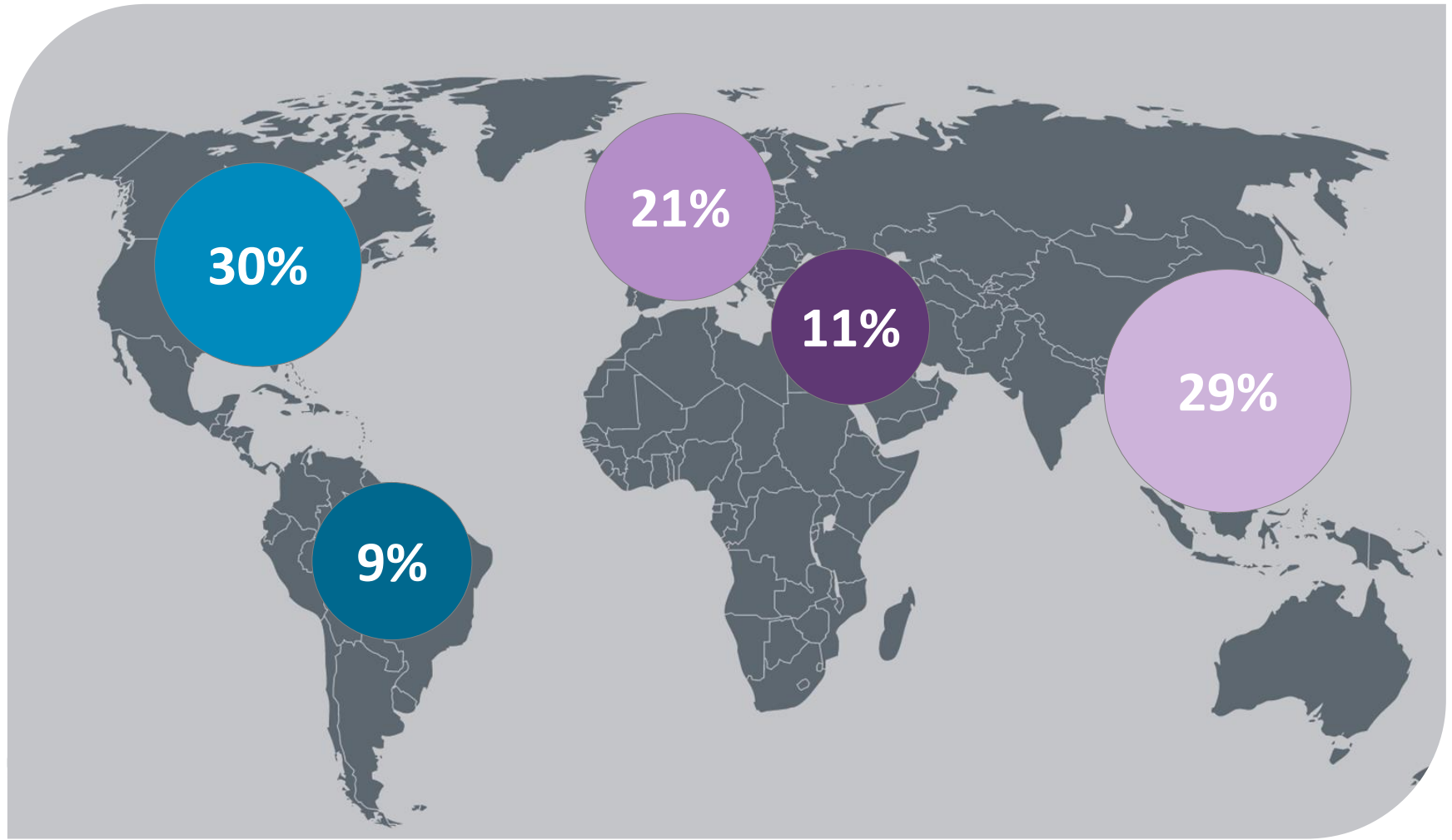
State of IT Skills Gap

2014 Summary

CompTIA®

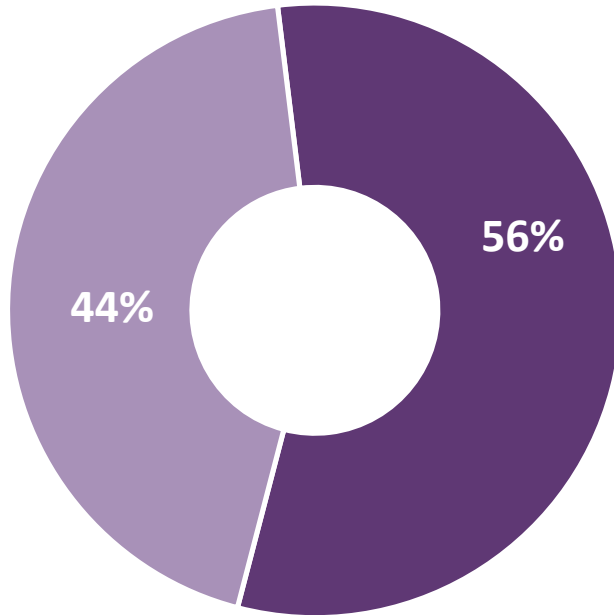
IT Industry Overview

The Global IT Industry: \$3.6 Trillion

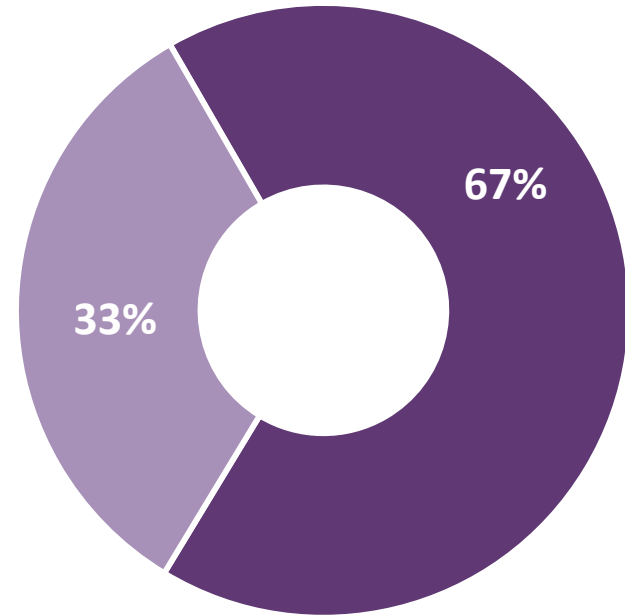


Components of the Global IT Industry


Global IT Market



U.S. IT Market



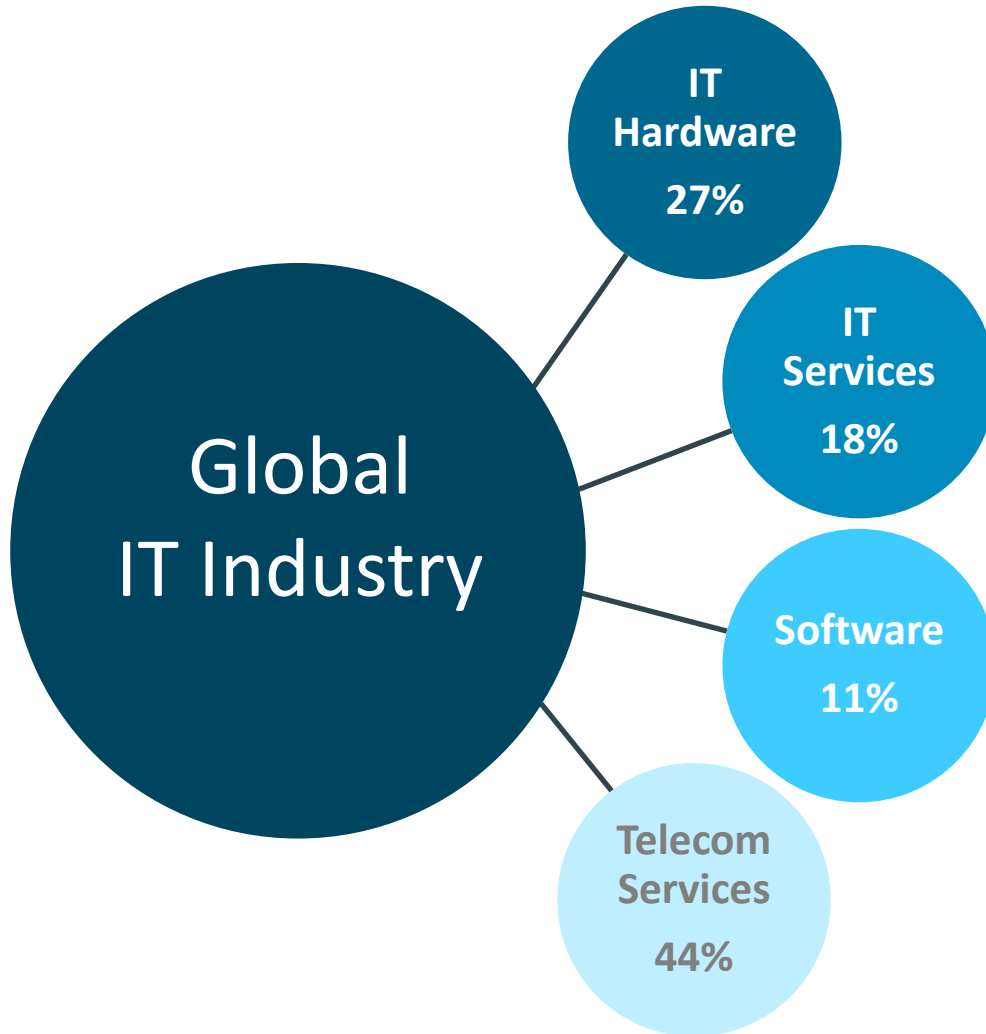
 Telecom Services

 IT Hardware, Software & Services

Telecom services includes fixed and wireless voice and data, covering the consumer and business markets.

Key Industry Segments: Global IT Market

Percentages represent revenue share of the segment



IT Hardware

- Servers
- Personal computers
- Storage
- Smartphones
- Tablets
- Network equipment
- Printers & other peripherals

IT Services

- Planning & Implementation
- Support services
- Operations management
- Training

Software

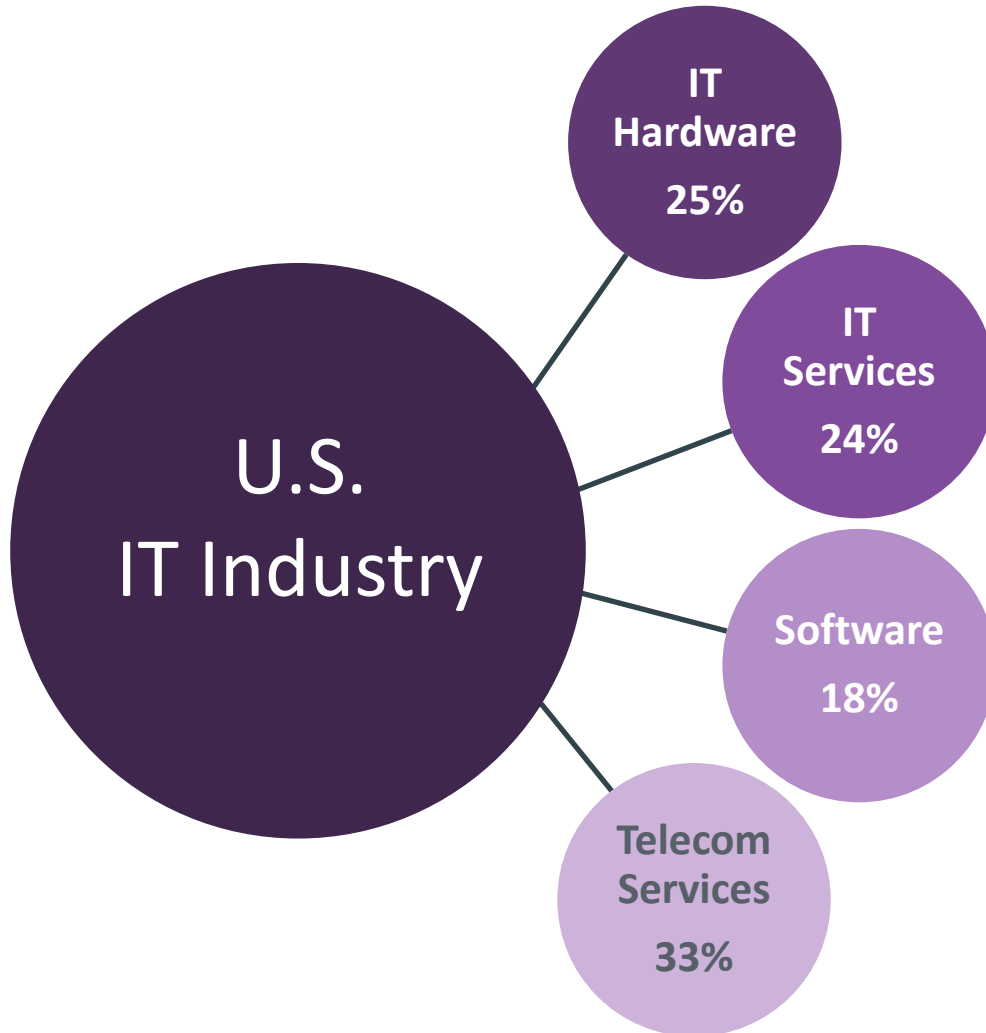
- Applications
- System infrastructure software

Telecom Services

- Fixed voice
- Fixed data
- Wireless voice
- Wireless data

Key Industry Segments: U.S. IT Market

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Telecom Services

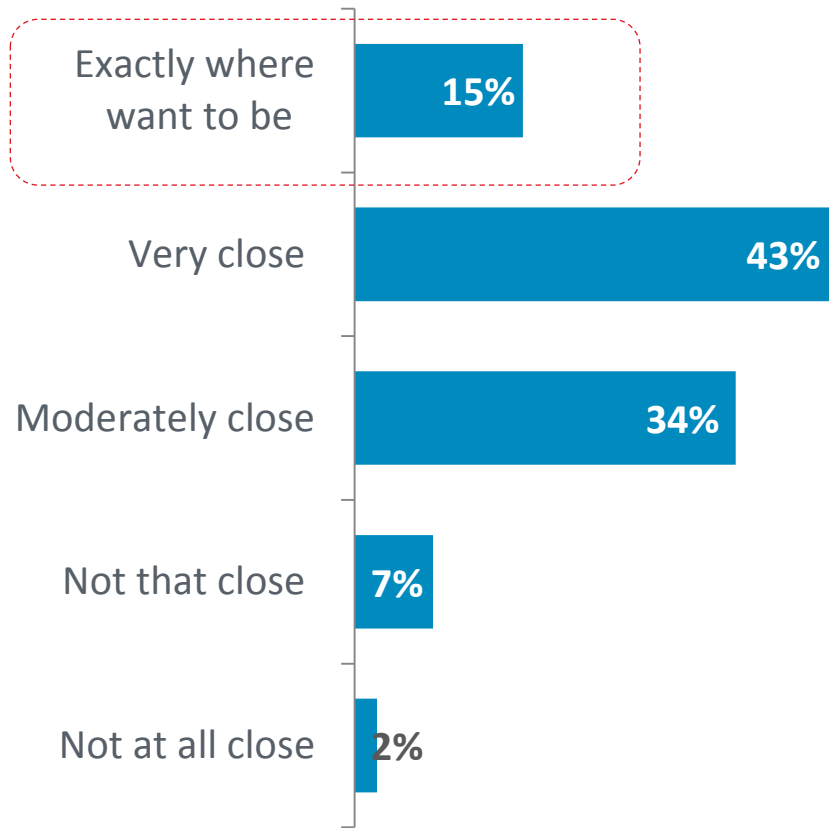
- Fixed voice
- Fixed data
- Wireless voice
- Wireless data

Technology Adoption Progression Never Static



Many Businesses Seek to Improve Their Use of IT

Degree to Which Businesses are “Where They Want to Be” in Using Technology



Top Technology Priorities

1. Security/Cybersecurity
1. Data storage/back-up
2. Network infrastructure
1. Web/Online presence/e-commerce
1. Updating aging computers/software
2. Mobility-related initiatives
3. Automating business processes through technology
1. Data analytics/Big data/Business intelligence

Many Businesses Seek Improvement on the IT Skills Front

16% of businesses report being exactly where they want to be with IT skills, while 40% report being very close.

Consequently, nearly half of businesses (44%) seek significant improvement on the IT skills front.

Top Areas Affected by IT Skills Gaps

1. Staff productivity
2. Customer service / customer engagement
3. Security / defending against malware, hacking, etc.
4. Innovation / new product development
5. Speed to market with new products or services

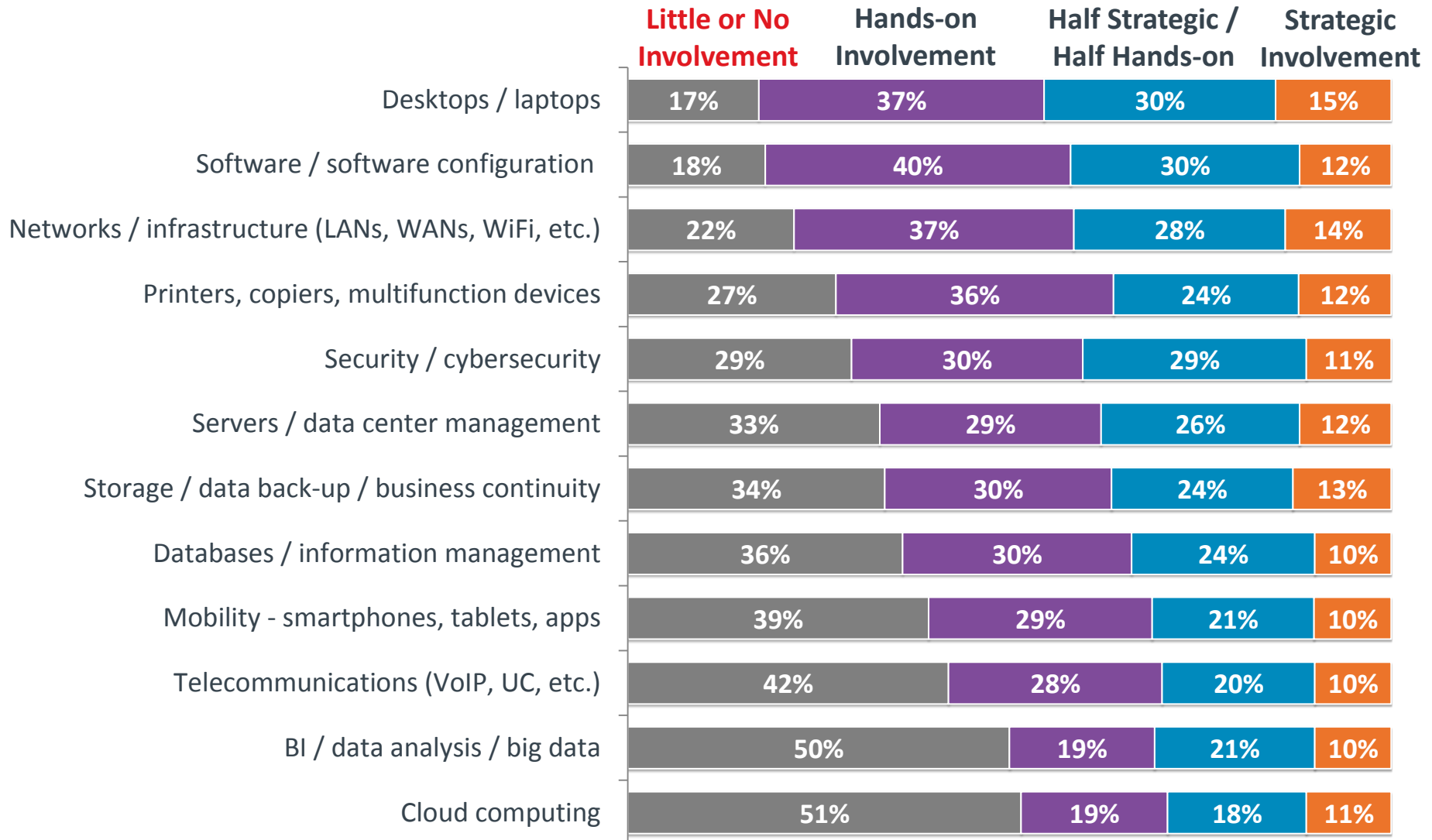
Top Rated IT Skills in Terms of Importance to Businesses

1. Networks / Infrastructure
2. Database / Information management
3. Server / data center management
4. Storage / data back-up
5. Help Desk / IT support
6. Data analytics / Business intelligence
7. Printers, copiers, multifunction devices
8. Security / Cybersecurity
9. Customer relationship management (CRM)
10. Web design / development

Top Rated “Soft” IT Skills

1. Teamwork
2. Customer service
3. Project management

Degree to Which IT Professionals Are Involved in Various Technologies

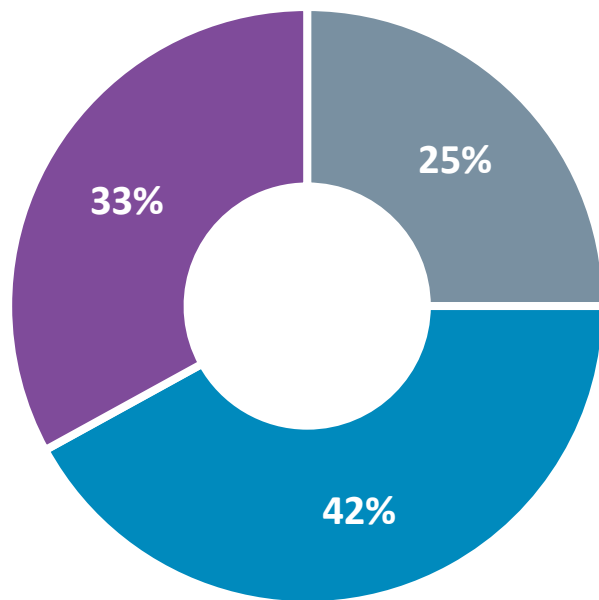


IT Hiring / Jobs

IT Firms Grapple with Understaffing

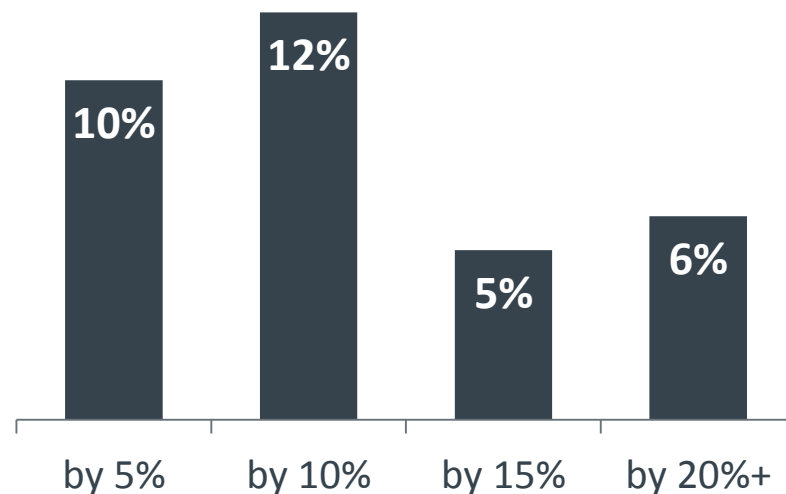
• Q2 2014

Current Staffing Levels



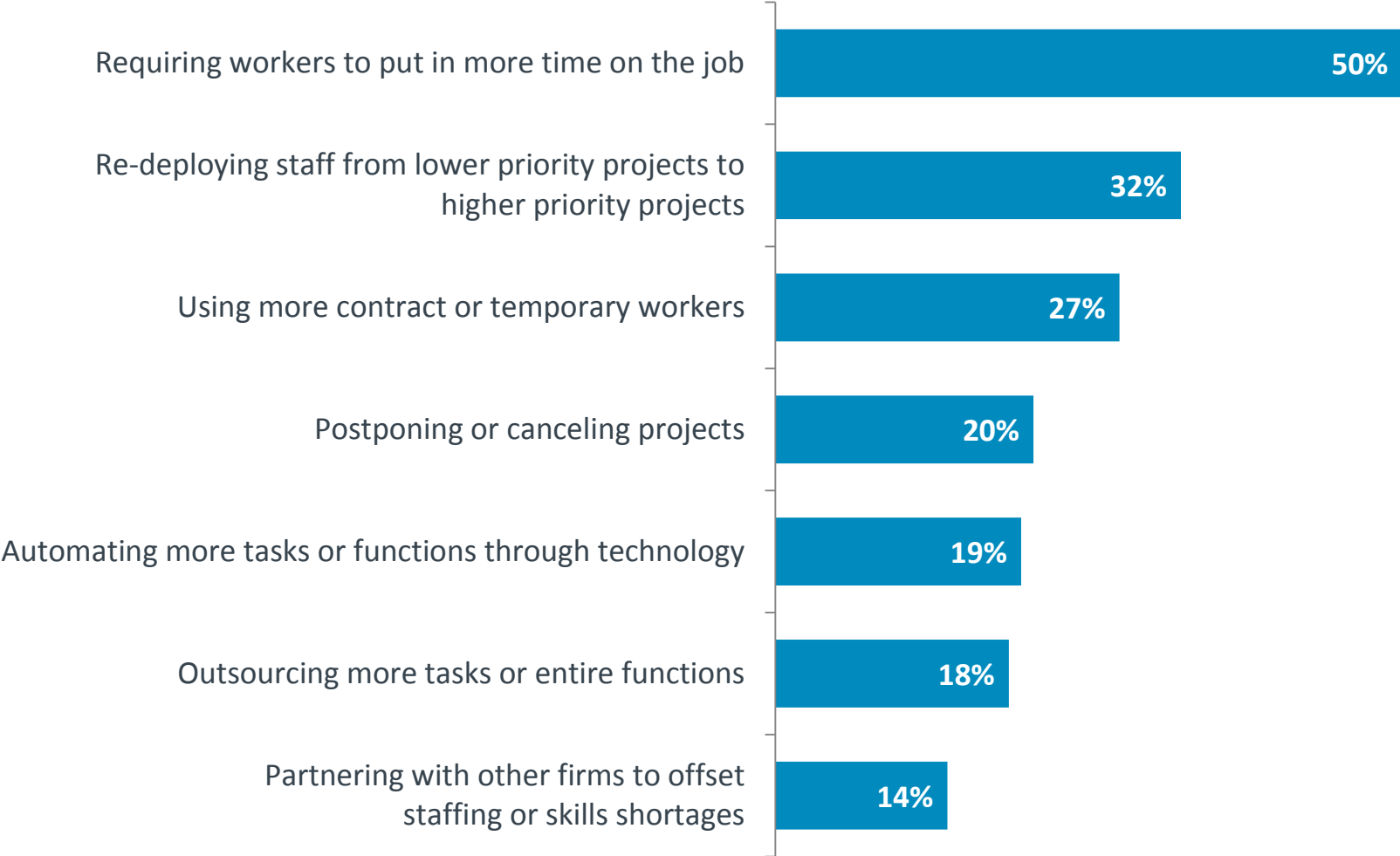
- Fully staffed; no hiring plans
- Fully staffed, but want to hire in order to expand
- Understaffed

Degree to which IT Firms are Understaffed



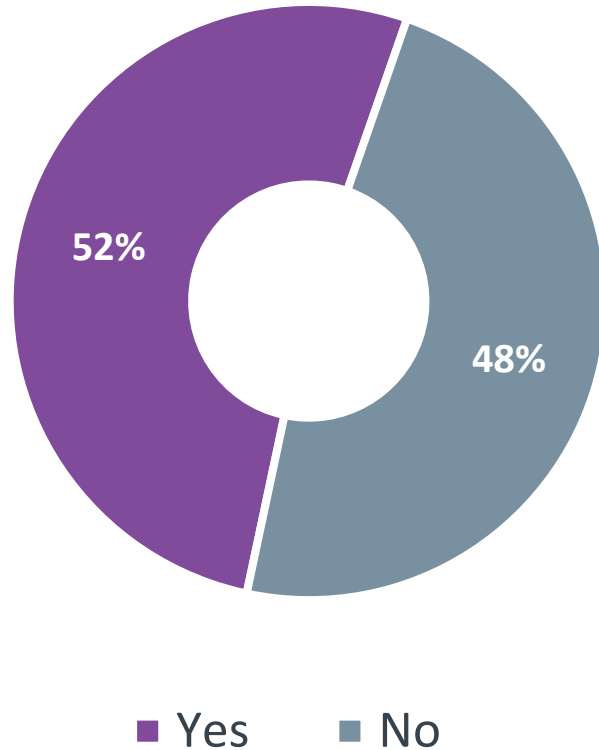
To put into context, an IT firm with 100 employees reporting understaffing of 10% is short 10 workers.

Strategies Used to Manage Understaffing Challenges

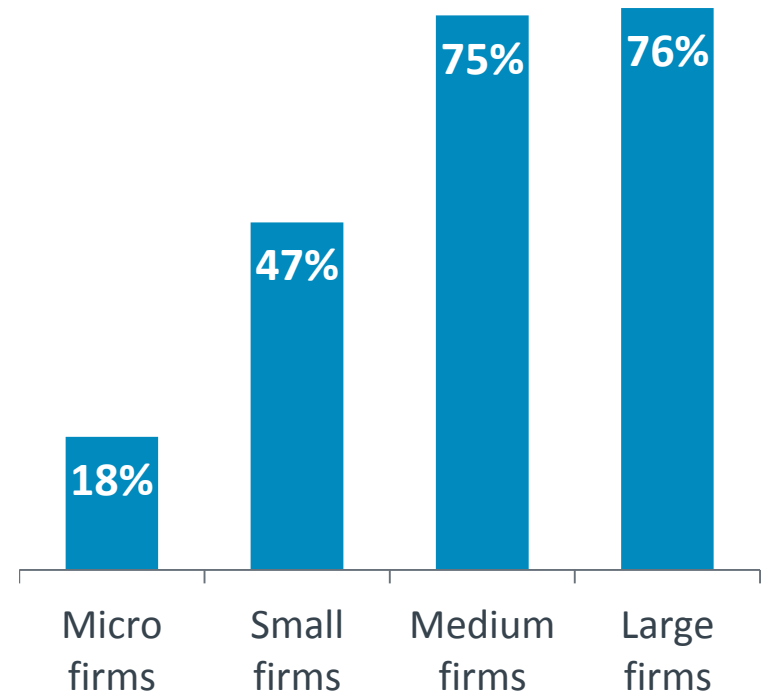


Half of All IT Companies Report Having Job Openings

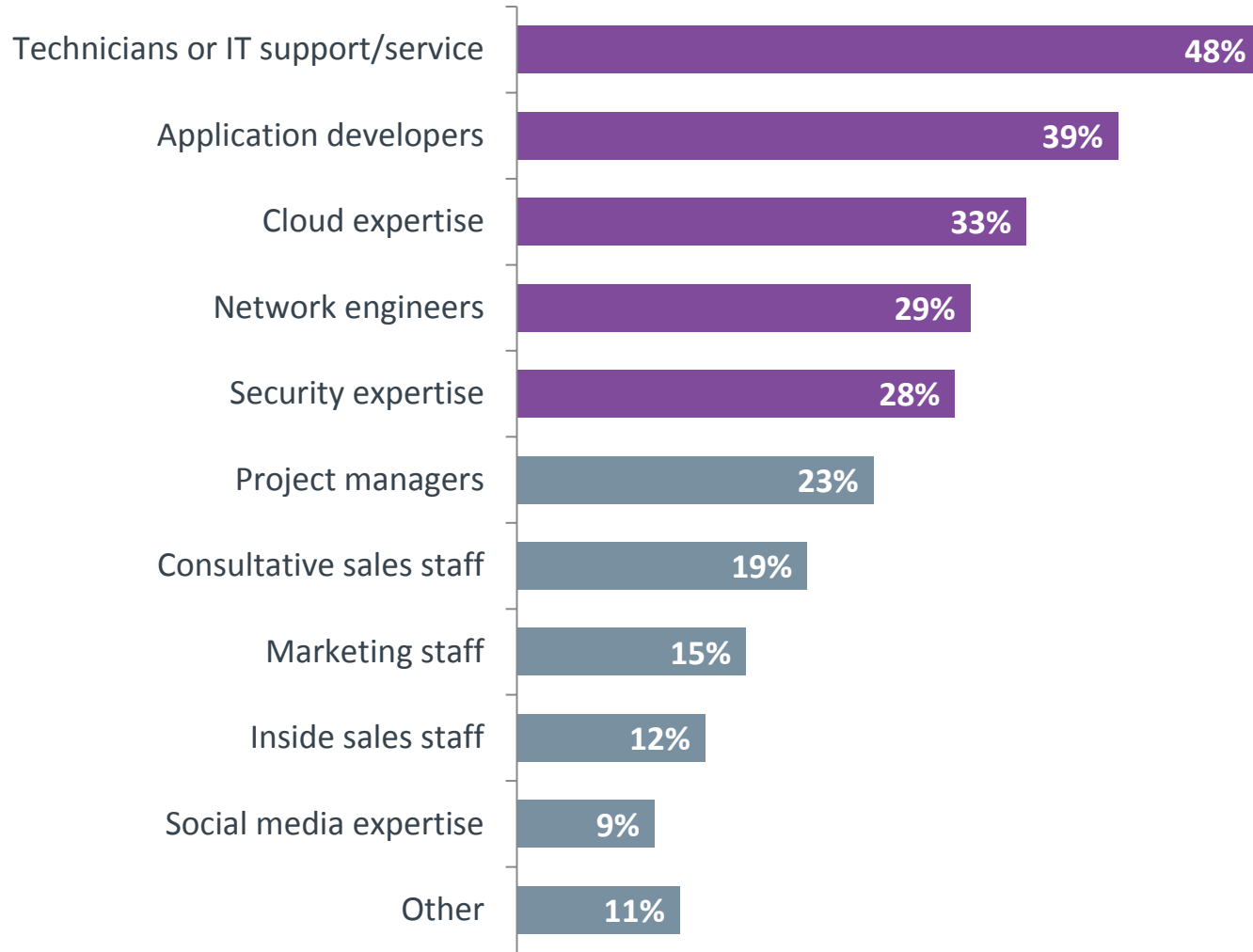
- Openings during Q2 2014



Segmentation of Incidence of Current Job Openings that Need to be Filled



Most IT Firms' Skills/Job Roles Needs Skew Toward Technical Positions



Segmentation of IT Firms' Skills/Job Roles Needs

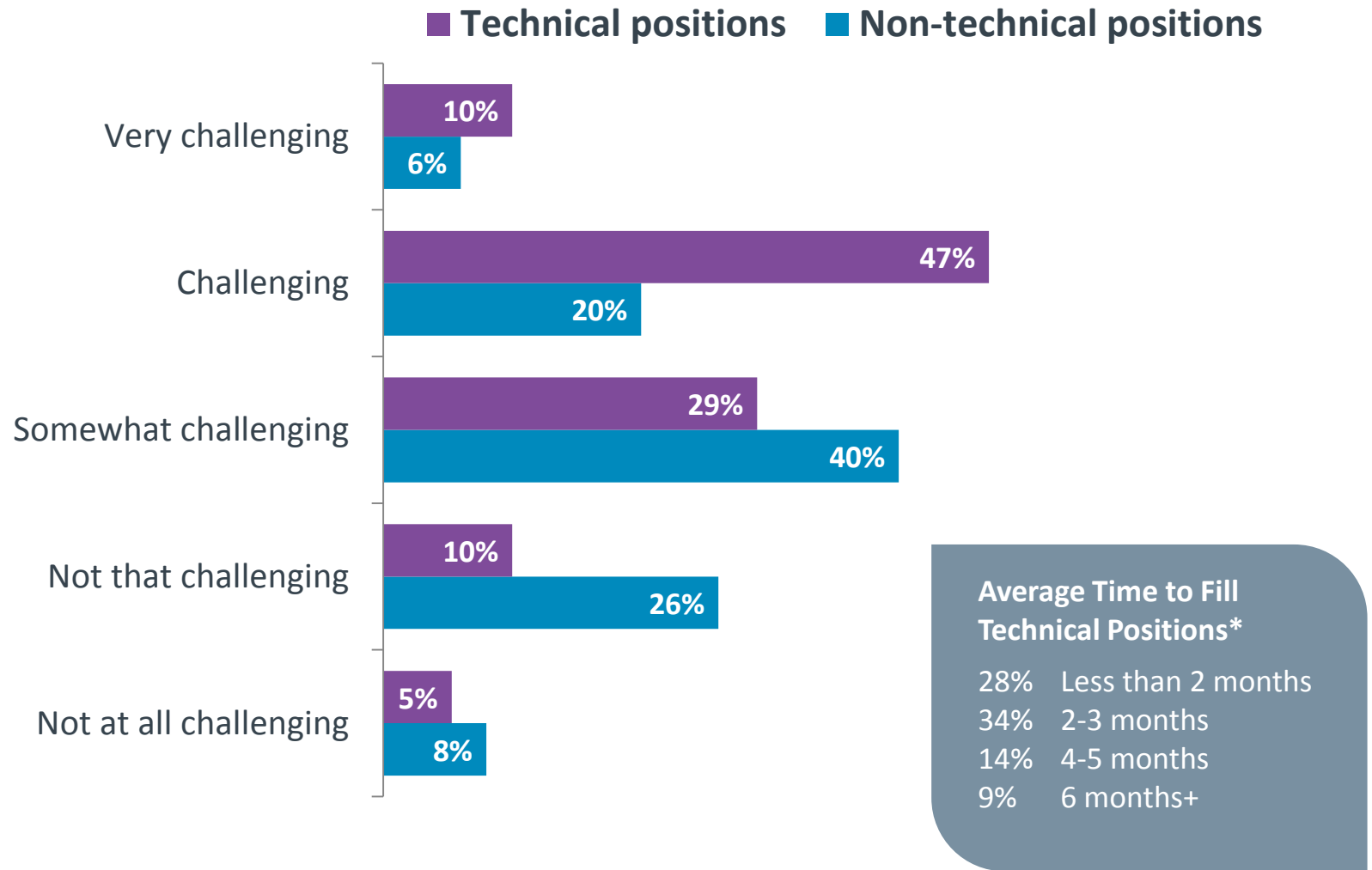
	Overall	Micro IT Firms	Small IT Firms	Medium IT Firms	Large IT Firms
Technicians or IT support/service	48%	42%	42%	54%	57%
Application developers	39%	24%	44%	40%	48%
Cloud expertise	33%	22%	29%	37%	45%
Network engineers	29%	17%	27%	42%	35%
Security expertise	28%	20%	16%	31%	47%
Project managers	23%	9%	26%	33%	28%
Consultative sales staff	19%	20%	29%	13%	13%
Marketing staff	15%	28%	9%	17%	6%
Inside sales staff	12%	16%	13%	12%	8%
Social media expertise	9%	15%	8%	6%	6%
Other	11%	10%	13%	10%	9%

Micro firm = 1-9 employees
Small firm = 10-99 employees

Medium firm = 100-499 employees
Large firms = 500+ employees

Finding Workers with the Right Set of Skills/Experience

A NET 57% of IT firms indicate challenges in hiring technical workers vs. 26% for non-technical workers (e.g. marketing, sales, etc.)

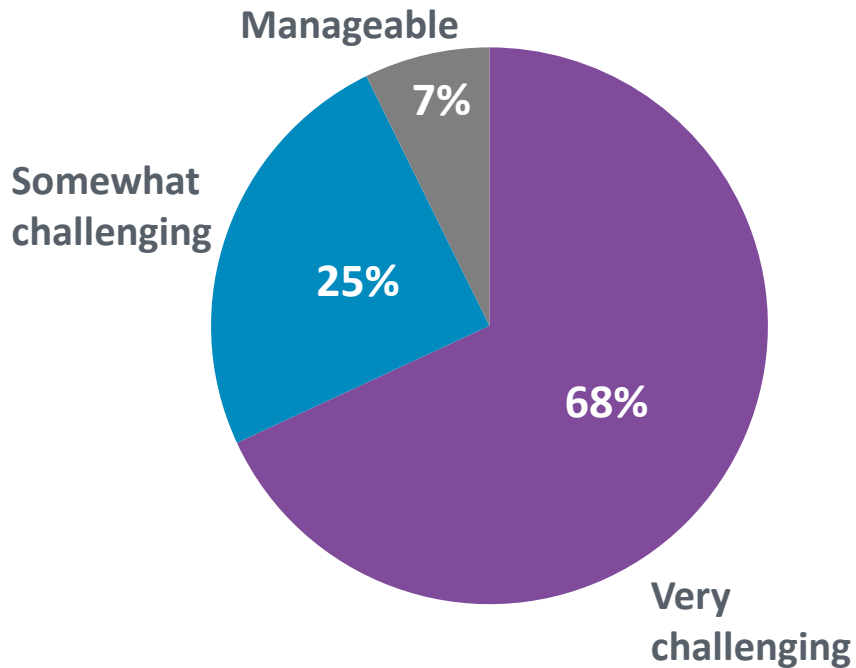


*Don't know response not shown

HR Hiring Challenges

- Across all types of organizations

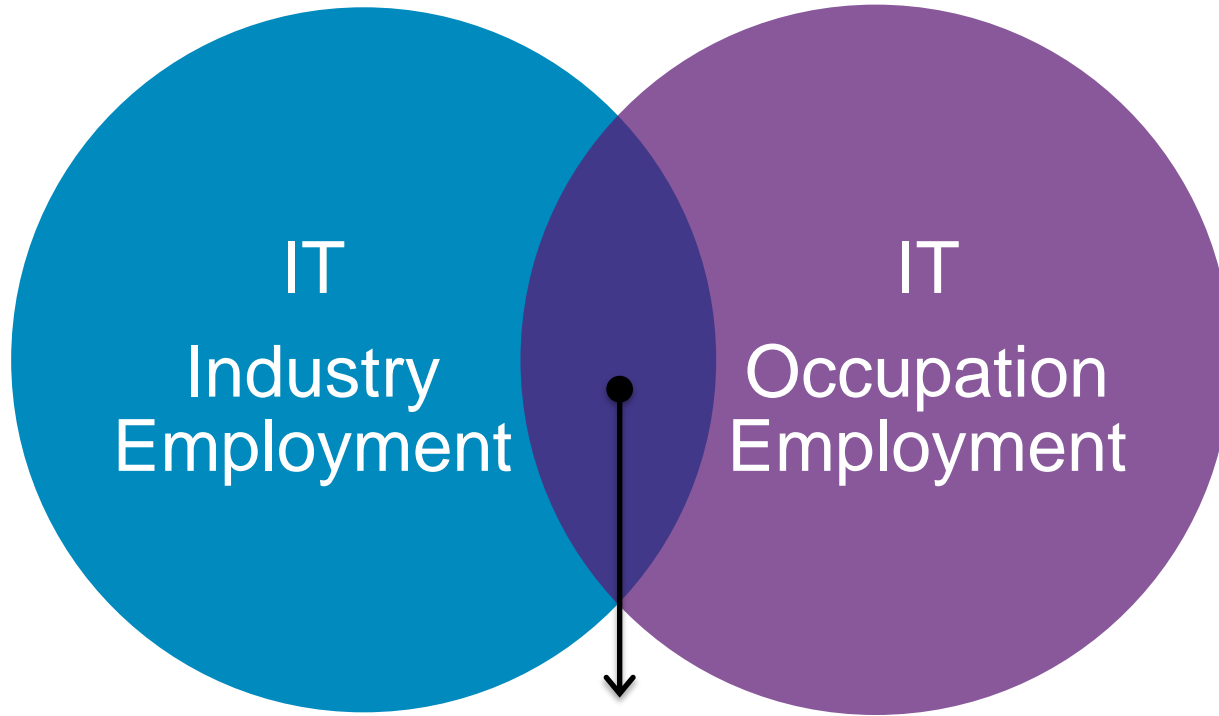
Finding New Staff Over Past 12 Months



Top Challenges in Filling Openings with the Right Candidates

- 44% Right level of experience
- 37% Right “hard” skills
- 37% Availability in local region
- 37% Timely manner
- 36% Right salary range
- 36% Right “soft” skills

IT Industry Employment vs. IT Occupation Employment



An estimated **5.73 million workers** were employed in the U.S. information technology industry in 2013. This includes technical and non-technical positions in employer firms and non-employer firms.

Within the IT industry, there are many IT occupations.

An estimated **4.74 million workers** were employed in core IT occupations, across the full spectrum of U.S. industry sectors and the government sector in 2013. This figure includes non-employers, such as the self-employed or sole proprietors.

Number of US Workers in Core IT Positions

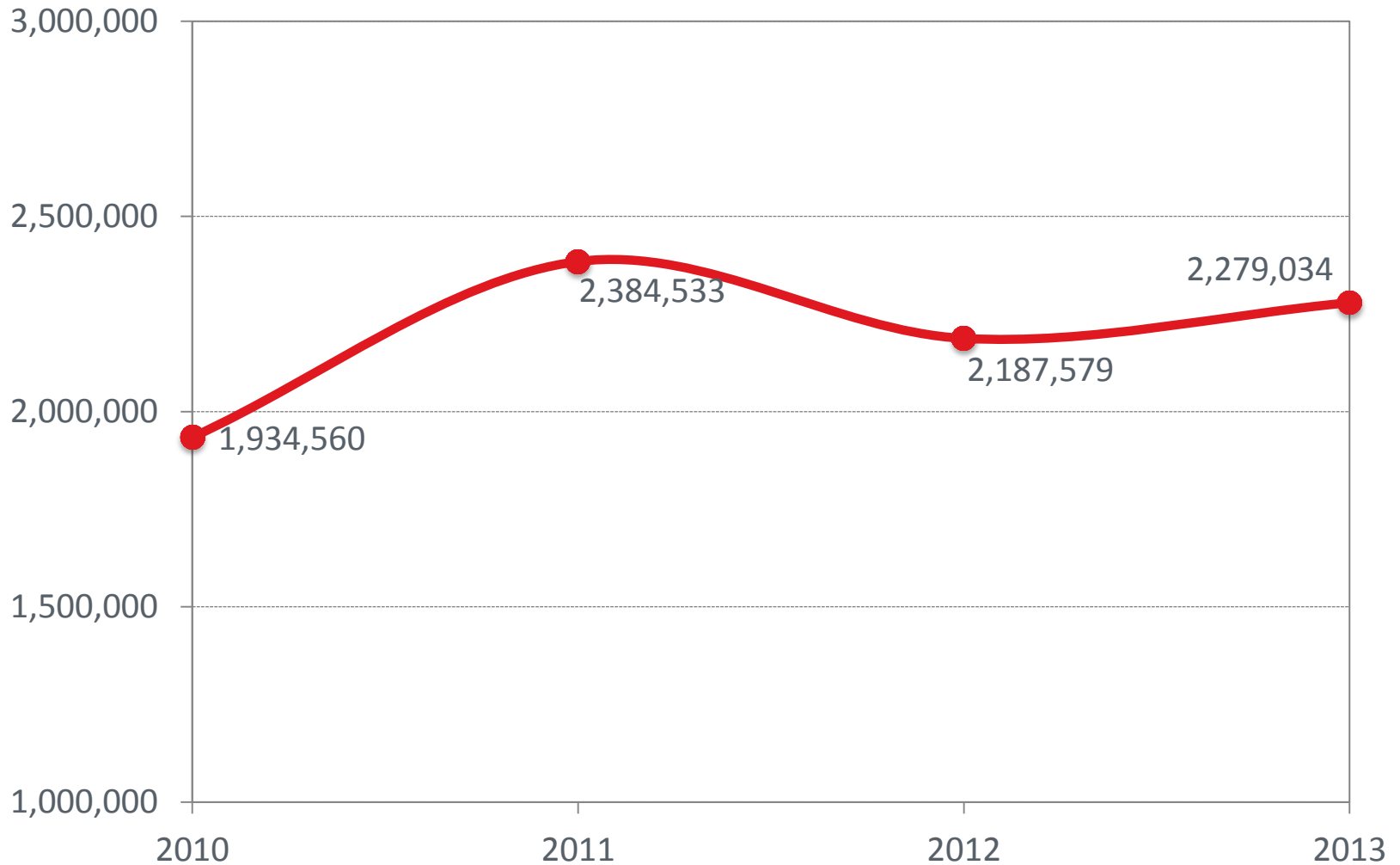
SOC Code	Job Description	Employment Count – Employer Firms	Employment Count – Sole Proprietors	2013 Total
11-3020	Computer and Information Systems Managers	319,852	30,431	350,283
15-1110	Computer and Information Research Scientists	26,839	533	27,372
15-1120	Computer and Information Security Analysts	575,257	94,055	669,312
15-1121	Computer Systems Analysts	499,742	93,365	593,107
15-1122	Information Security Analysts	75,515	690	76,205
15-1130	Software Developers and Programmers	1,453,425	256,248	1,709,673
15-1131	Computer Programmers	324,998	75,776	400,774
15-1132	Software Developers, Applications	610,857	45,244	656,101
15-1133	Software Developers, Systems Software	410,829	27,517	438,346
15-1134	Web Developers	106,740	107,712	214,452
15-1140	Database and Systems Administrators and Network Architects	620,339	43,946	664,285
15-1141	Database Administrators	115,842	11,221	127,063
15-1142	Network and Computer Systems Administrators	361,528	24,391	385,919
15-1143	Computer Network Architects	142,968	8,334	151,302
15-1150	Computer Support Specialists	708,636	128,617	837,253
15-1151	Computer User Support Specialists	536,681	105,386	642,067
15-1152	Computer Network Support Specialists	171,955	23,231	195,186
15-1190	Computer Occupations, All Other	193,522	25,929	219,451
17-2060	Computer Hardware Engineers	81,740	4,289	86,029
49-2010	Computer, Automated Teller, and Office Machine Repairers	112,544	63,164	175,708
	TOTAL EMPLOYMENT	4,092,154	647,212	4,739,366

Salaries and Job Growth for Core IT Positions

		Salaries	10 Year Job Growth Projections	
ONET Code	Core IT Occupation	Average Annual Salary	Projected NET New Jobs 2012 - 2022	2012 – 2022 % Change
11-3021.00	Computer and Information Systems Managers	\$120,950	50,900	15%
15-1111.00	Computer and Information Research Scientists	\$102,190	4,100	15%
15-1121.00	Computer Systems Analysts	\$79,680	127,700	25%
15-1122.00	Information Security Analysts	\$86,170	27,400	37%
15-1131.00	Computer Programmers	\$74,280	28,400	8%
15-1132-1133.00	Software Developers	\$93,350	222,700	22%
15-1134.00	Web Developers	\$62,500	28,500	20%
15-1141.00	Database Administrators	\$77,080	17,900	15%
15-1142.00	Network and Computer Systems Administrators	\$72,560	42,900	12%
15-1143.00	Computer Network Architects	\$91,000	20,900	15%
15-1150.00	Computer Support Specialists	\$48,900	123,000	17%
15-1199.00	Computer Occupations, All Other	NA	7,800	4%
17-2061.00	Computer Hardware Engineers	\$100,920	6,200	7%
49-2011.00	Computer, Automated Teller, and Office Machine Repairers	\$36,620	5,100	4%
	Total	NA	713,500	17%

Historical Total Number of US IT Job Openings

- Year over year



Historical Number of US IT Job Openings

- Year over year

ONET Code	Core IT Occupations	# Postings 2013	# Postings 2012	# Postings 2011	# Postings 2010
11-3021.00	Computer & Information Systems Managers	59,873	51,626	56,939	41,317
15-1111.00	Computer & Information Research Scientists	13,233	11,486	11,104	8,532
15-1121.00-.01	Computer Systems Analysts & Informatics Specialists	282,601	259,277	293,623	231,845
15-1122.00	Information Security Analysts	54,588	49,801	52,786	38,044
15-1131.00	Computer Programmers	99,260	87,910	101,849	88,167
15-1132.00	Software Developers, Applications	601,881	645,630	689,162	566,386
15-1133.00	Software Developers, Systems Software	46,605	44,880	48,265	41,041
15-1134.00	Web Developers	87,183	92,750	98,083	89,627
15-1141.00	Database Administrators	117,010	108,449	124,032	104,434
15-1142.00	Network & Computer Systems Administrators	125,302	130,462	139,063	110,738
15-1143.00-.01	Computer Network Architects & Telecom Engineers	52,028	54,449	63,830	50,332
15-1151.00	Computer User Support Specialists	201,332	157,876	165,577	126,067
15-1152.00	Computer Network Support Specialists	11,675	13,507	14,172	9,886
15-1199.00 -.12	Computer Occupations, All Other	490,684	441,558	486,115	395,210
17-2061.00	Computer Hardware Engineers	7,286	8,015	8,737	7,000
49-2011.00	Computer, Automated Teller, & Office Machine Repairers	28,493	29,903	31,196	25,944
	Total	2,279,034	2,187,579	2,384,533	1,934,570

Top Skills Cited in IT Job Postings

- Q2 2014

Top Specialized Skills Listed in IT Job Ads

1.	SQL
2.	JAVA
3.	Oracle
4.	JavaScript
5.	LINUX
6.	UNIX
7.	Software Engineering
8.	Microsoft C#
9.	Extensible Markup Language (XML)
10.	SQL Server

648,016 US IT job postings in Q2 2014, of which 14% do not specify skills.

Top Skill Clusters in IT Job Postings

1.	Software & Programming
2.	Common Skills: Communication & Coordination
3.	Common Skills: Problem Solving
4.	Common Skills: Business Environment
5.	IT: Programming, Development, & Engineering
6.	IT: Databases & Data Warehousing
7.	Common Skills: Project & Process Flow
8.	IT: Web Design & Technologies
9.	IT: Business Intelligence
10.	IT: Network Administration & Security

648,016 US IT job postings in Q2 2014, of which 16% do not specify skill clusters.

Top Titles Cited in IT Job Postings

- Q2 2014

Top Job Titles Listed in IT Job Postings

1.	Software Engineer
2.	Java Software Developer
3.	Systems Engineer
4.	Network Engineer
5.	.Net Developer
6.	Software Developer
7.	Web Developer
8.	Systems Administrator
9.	Systems Analyst
10.	Data Analyst

648,016 US IT job postings in Q2 2014.

Top Job Titles in Network Administration & Security Skill Cluster

1.	Network Engineer
2.	Systems Administrator
3.	Systems Engineer
4.	Software Engineer
5.	Java Software Developer
6.	Network Administrator
7.	Information Technology Specialist
8.	Security Engineer
9.	Senior Systems Engineer
10.	Senior Systems Administrator

139,385 US IT job postings in Q2 2014 within the IT: Network Admin. & Security skill cluster.

Top 10 IT Skills in Demand for 2014

1 Programming/App. Dev.

2 Help Desk/Tech. Support

3 Networking

4 Mobile Apps./Devices

5 Project Mgmt.

6 Database Administration

7 Security

8 Business Intel./Analytics

9 Cloud

10 Interpersonal

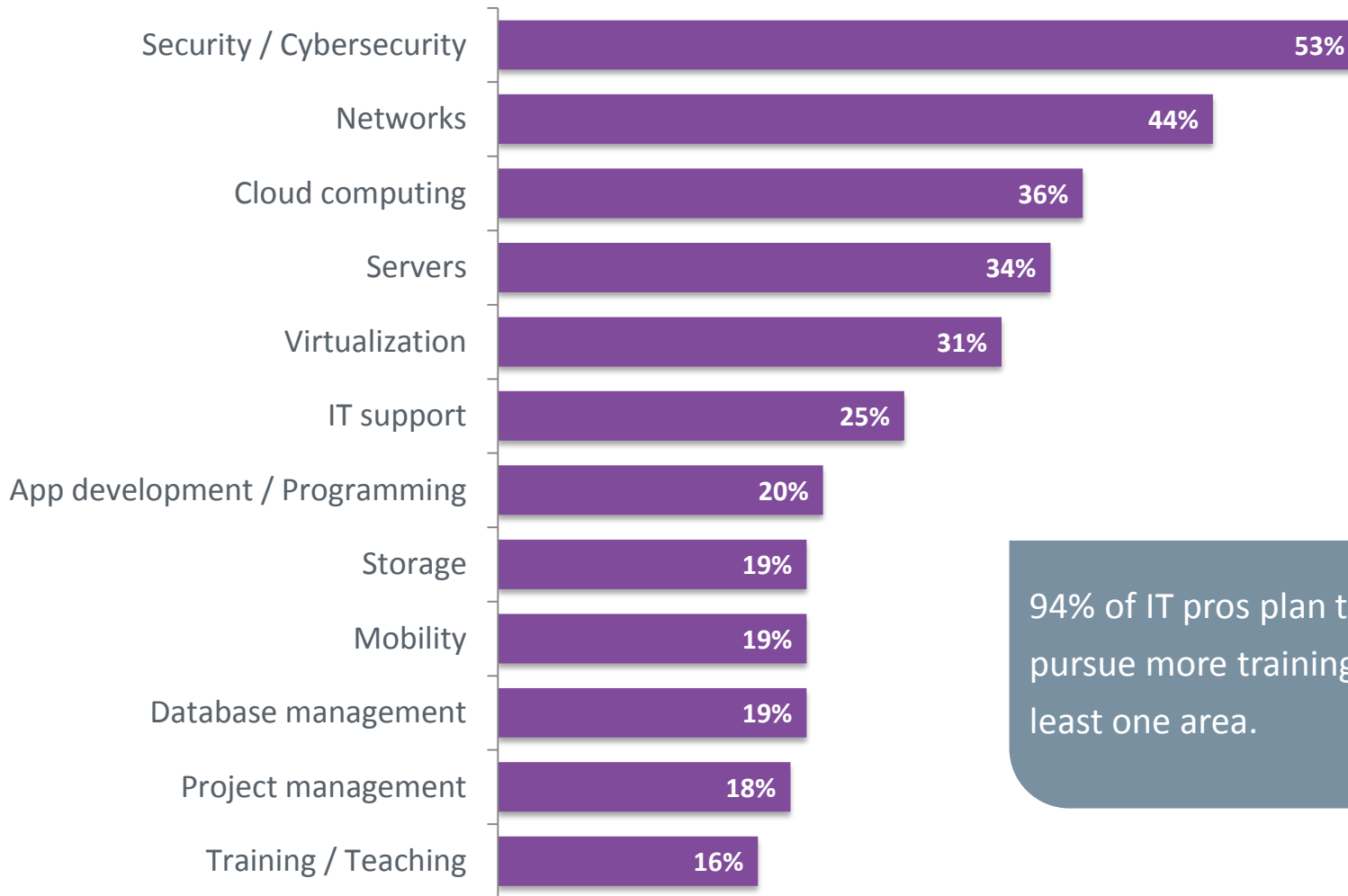
Professional Development

“We have to keep up with changes in technology. If we don’t, then we won’t be able to support our clients or keep our jobs.”



Top IT Skills IT Professionals Plan to Pursue

- IT knowledge / skills IT pros would like to further develop over the next two years

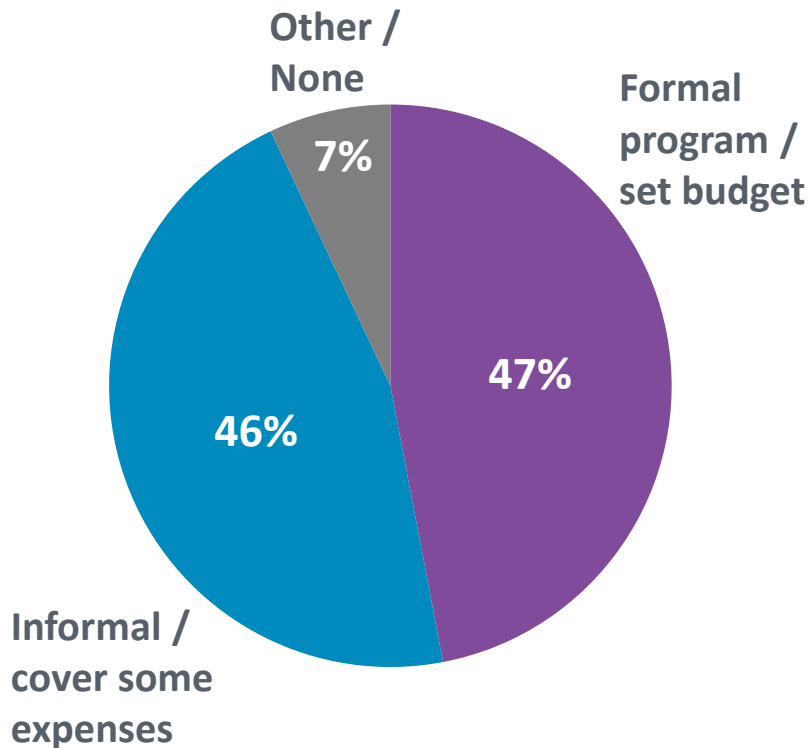


94% of IT pros plan to pursue more training in at least one area.

Note: Nearly all respondents (95%) are already certified in CompTIA A+ (68%), Network+ (51%), or Security+ (48%).

Professional Development Policies

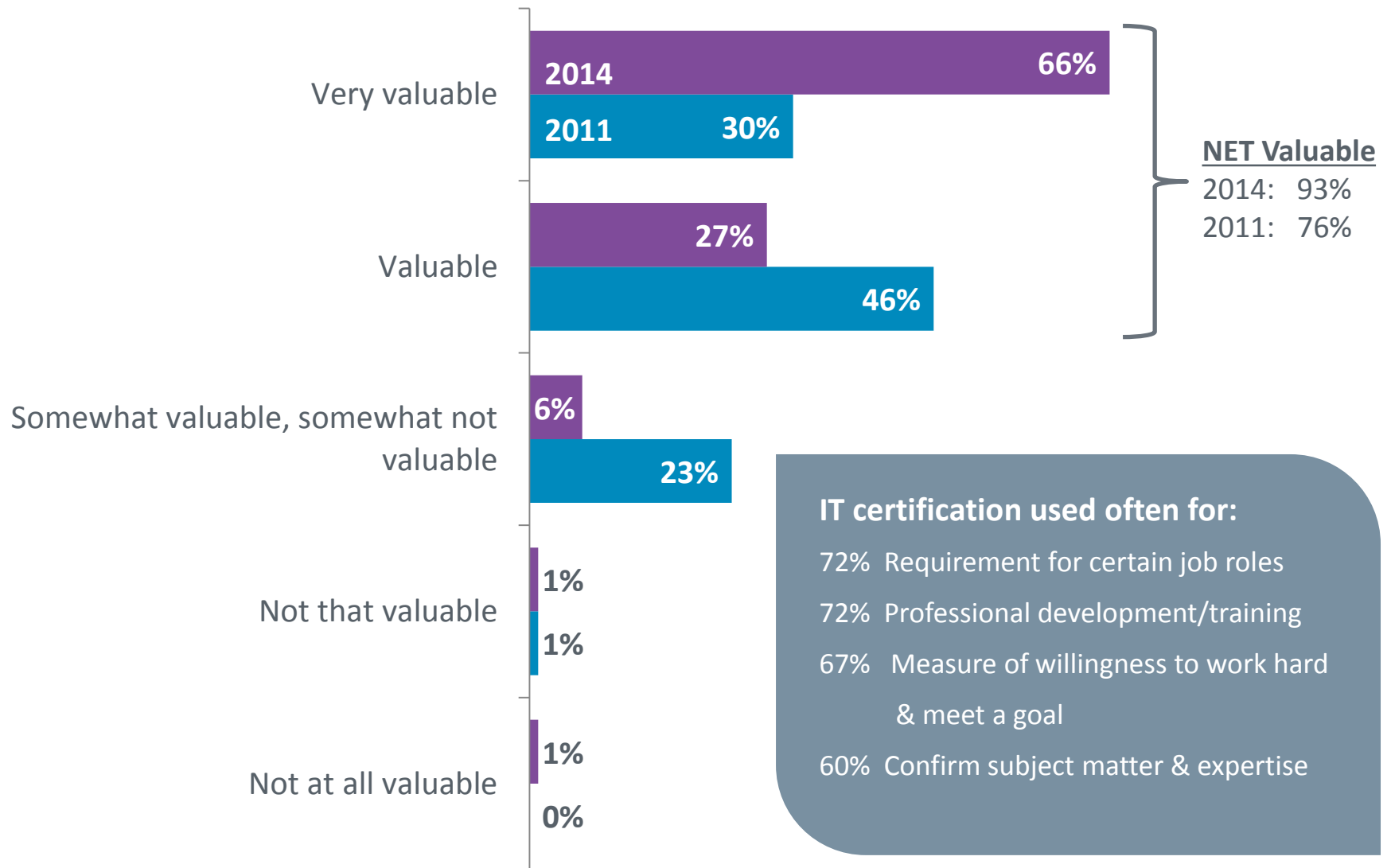
Organizational Support for Professional Development



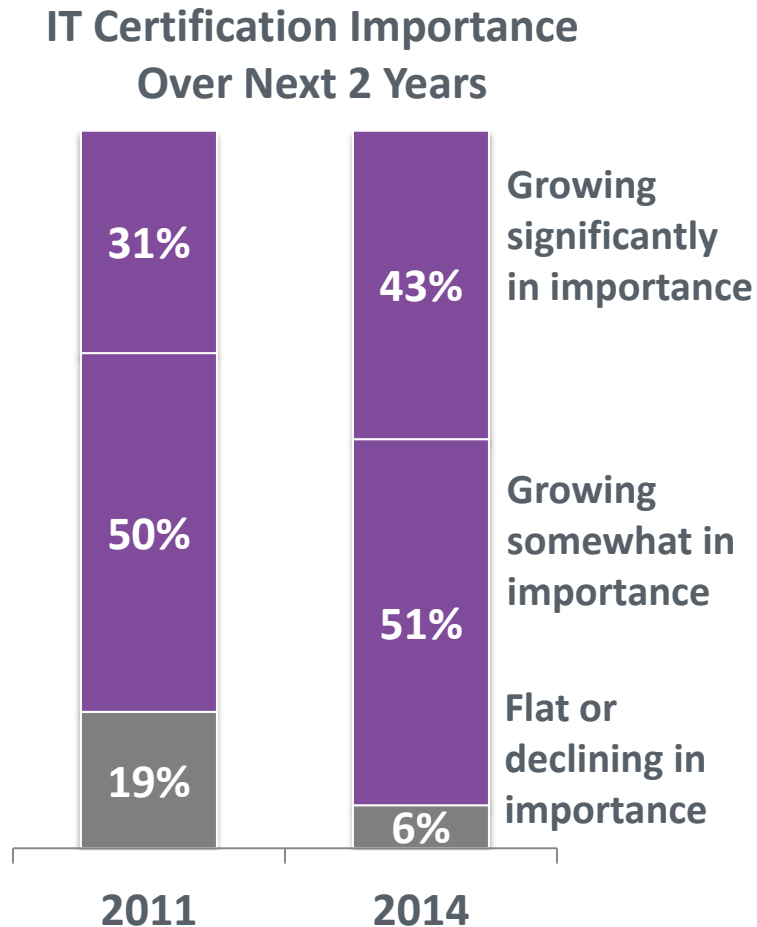
Top Types of Organizational Support for IT Staff Training

- 50% Instructor-led class off-site
- 39% Instructor-led on-site
- 36% Conferences
- 34% IT certification
- 33% College tuition reimbursement
- 20% Online / self-directed

Value of IT Certification Increasing



Growing Importance of Certification



Top Benefits of Testing vs. Training Only

98% Cite one or more benefits to certification testing vs. training alone, such as:

- 40% Better validation of knowledge learned
- 36% Increases value/credibility of the training
- 34% Provides test taker with improved understanding of subject matter
- 33% Demonstrates test taker's abilities

“Is a good baseline validation of what was learned that can be looked at against employee's performance post certification.”

About This Research

CompTIA is a member of the Marketing Research Association and abides by its guidelines for survey best practices and research ethics. CompTIA is responsible for all content contained in this report.

This study and all CompTIA research is one way in which the association re-invests resources in the IT channel. As the voice of the IT industry, CompTIA has hundreds of tools, market intelligence reports and business training programs to help IT channel organizations grow through education, certification, advocacy and philanthropy. The full report is available at no cost to CompTIA members to help them develop and hone their business plans.

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