IT Support and Security Performance: The Impact of CompTIA Certification on Organizational Performance

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IN THIS WHITE PAPER

Information technology (IT) is increasingly essential to successful business operations. Maintaining and increasing IT organizational performance in key areas such as IT support and IT security are important goals for all CIOs and IT leaders. But with constant pressure to meet budget or time constraints, IT leaders can be tempted to hire staff who can't demonstrate the required skills or forgo ongoing training. They wonder if hiring a certified candidate is worth it. They question the value of ongoing training, believing that their staff already have the skills they need. However, new research shows that candidates and staff with industry-relevant certifications like CompTIA A+ and Security+ are more confident and knowledgeable and perform better than staff who are not certified. And that performance advantage not only enables new employees to ramp up faster but also is reflected in the higher domain knowledge of IT professionals with many years of experience.

SITUATION OVERVIEW

> *Performance: The accomplishment of a task measured against known standards of accuracy, completeness, cost, and speed. Performance is also the fulfillment of an obligation.*

Firms of all sizes increasingly rely on the IT organization to provide essential services, maintain critical infrastructure and tools, and safeguard vital business systems and information. In fact, the performance of the IT organization is often critical to enterprise success. IT organizational performance, or how the IT staff perform their roles, relies on many elements, including effective preparation, quality validation of capability, and proper execution of tasks. In research conducted in the summer of 2014 focusing on IT security and IT support functions, IDC found that:

- **Certification preparation leads to confidence:** Well-trained IT professionals are more confident that the skills they possess are appropriate and useful for their responsibilities.

- **Validation reliably attests to the level of knowledge:** Certified employees can be relied on to perform at a higher level and have more domain knowledge than untrained employees.

- **Execution is the performance of important business activities:** Certified employees can be expected to perform assigned tasks more consistently, increasing IT reliability and overall organizational execution.

In all three areas, leveraging CompTIA certifications improves IT results and makes IT employees more capable.

Preparation Leads to Confidence

When IT professionals are confident in their abilities, they are more likely to be forward thinking, proactively anticipating issues and solving problems before they impact performance. Having the right skills gives IT professionals, whether they are working in IT security or in IT support, the confidence to believe they can perform their assigned responsibilities. By conscientiously acquiring specific domain knowledge, IT security and support professionals increase their confidence in their ability to perform their assigned tasks.
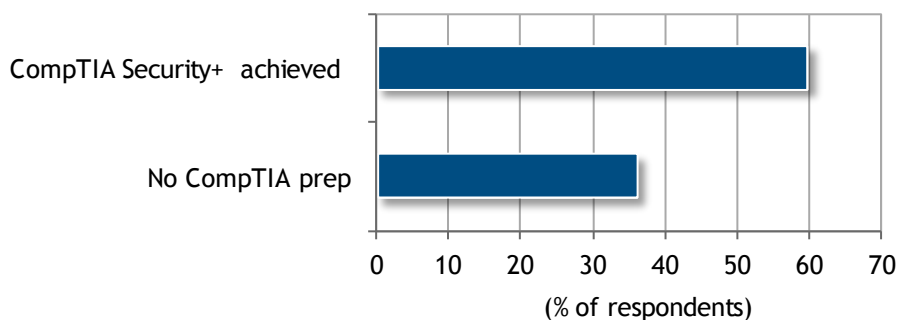
Preparation and IT Security

When it comes to key security tasks such as the establishment and maintenance of security standards, policy compliance, and investigation of security incidents, IT security professionals who achieved certifications are 85% more likely to believe they have the knowledge and skills they need for their jobs (see Figure 1). This confidence helps those professionals properly assess risks, design and implement interventions, and correct policy weaknesses.

Being "certified" and being trained are both essential to being confident in IT security. For employees, getting trained or otherwise preparing for certification adds significantly to their comfort with and confidence in their ability.

FIGURE 1

IT Security Domain Confidence

Q.   Overall, how do you rate your own ability related to IT security compared with your responsibilities?

Note: Data represents the percentage of respondents who described their ability as "exactly or very close to where I need to be."

Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

Preparation and IT Support

Support tasks appear to be different. For the important tasks accomplished by IT support teams such as PC/notebook upgrades, PC backups, and network connectivity tasks, IT professionals who achieved certification and those that did not have about the same confidence in their skills. But, again, as we mentioned previously, confidence isn't the same as competence.

Validation Demonstrates Knowledge

As every parent of a teenager knows, confidence by itself doesn't mean competence. IT managers and CIOs need to be sure their staff have the knowledge and insight they need to make good decisions and perform essential tasks correctly. To be sure that IT staff have the knowledge they need to be successful, some IT leaders rely on the validated knowledge that certifications are based on. The difference in domain knowledge between those with certification and those without certification can be striking.

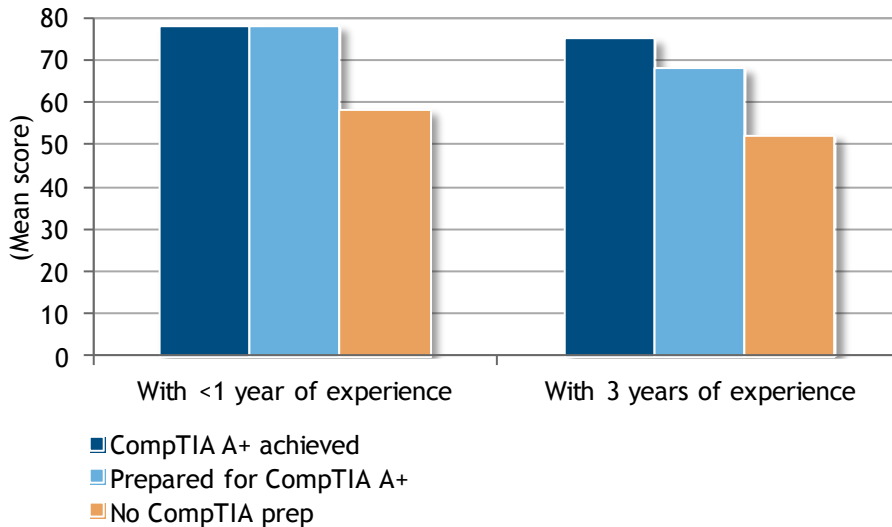## *Domain Knowledge in IT Support*

In support-related activities, CompTIA A+ certified support staff have 37% more core domain knowledge than those without a certification. But this isn't just schoolroom bragging rights; this difference matters to IT organizations in terms of both new hires and experienced staff (see Figure 2).

This difference in support domain knowledge allows new employees to ramp up and achieve proficiency faster in new positions: A+ certified support professionals with one to three years of experience have 40% more domain knowledge than those with the same experience but without a CompTIA certification. In fact, CompTIA A+ certified support staff with less than one year of experience have 52% more core domain knowledge than uncertified staff with three years of experience.

> **A+ certified support staff with less than one year of experience have 52% more core domain knowledge than uncertified staff with three years of experience.**

FIGURE 2

IT Support Domain Knowledge

Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

And the domain knowledge sticks: Even after 10+ years of support experience, CompTIA A+ certified IT staff have 25% more core domain knowledge than those with the same experience but without a CompTIA certification. This appears directly attributable to preparing for or achieving CompTIA A+ certification.

This knowledge advantage allows certified support staff to understand the environment, more clearly communicate issues and opportunities, and add value more quickly than uncertified staff.

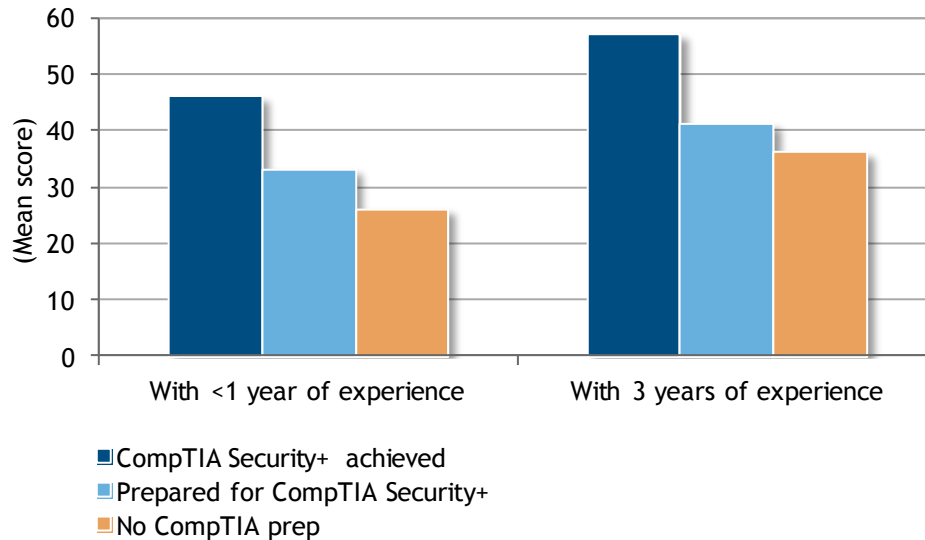## *Domain Knowledge in IT Security*

The same type of domain knowledge difference can be seen in IT security-related activities as well. We found that IT security staff who spent about two weeks preparing to get certified had 25% more core domain knowledge than those without a CompTIA Security+ certification.

And like the support staff, we found that this allows new security employees to reach job proficiency faster: Security+ certified security professionals with one to three years of experience have 58% more domain knowledge than those with the same experience but without a CompTIA Security+ certification (see Figure 3). And CompTIA Security+ certified staff with less than one year of experience have 24% more core domain knowledge than uncertified staff with three years of experience.

After 10+ years of support experience, CompTIA A+ certified IT staff have 25% more core domain knowledge than those without a CompTIA certification.

FIGURE 3

IT Security Domain Knowledge

Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

And as we saw with IT support, IT security knowledge sticks: Security+ certified staff with 10+ years of security experience have almost 20% more core domain knowledge than those with the same experience but without a CompTIA certification. This appears directly attributable to preparing for and achieving CompTIA Security+ certification.

This knowledge advantage allows certified security staff to understand the environment, more quickly identify issues, and generally add value more quickly than uncertified staff.

Certification Leads to Reliable Execution

CompTIA certified IT support employees generally provide better levels of performance across a range of activities compared with employees who have not earned a CompTIA certification. We looked at a range of IT support job roles and a set of specific, objectively measurable tasks and compared the performance of trained and untrained and certified and uncertified IT professionals (see Table 1). Among the tasks that we examined, several stood out:

- PCs/notebooks configured for automatic patch/update management

- PCs/notebooks configured with continuous backup

- Network device malfunctions isolated or repaired within four hours

- Operating system administration activities performed by a device manager

- Networking devices deployed in less than two hours

For these tasks and others, CompTIA A+ certified IT staff performed 9-30% better than staff who had not prepared for a CompTIA certification. Through other questions, we ascertained that they were, in all other respects, trained for their roles.

TABLE 1

Support Activity Performance Comparison: A+ Certified Versus Untrained IT Employees

Metric	CompTIA Certified	Untrained	% Difference
Percentage of enterprise PCs/notebooks configured for automatic patch/update management	74	57	30
Percentage of enterprise PCs/notebooks configured with continuous backup	47	38	24
Percentage of network device or resource malfunctions isolated or repaired within four hours	69	57	21
Percentage of operating system administration activities using a device manager, etc.	55	47	17
Percentage of new networking devices deployed in less than two hours	36	33	9
n =	893	168	

Notes:

Respondents self-identified as being directly responsible for each activity. The number of respondents varies per activity.

"Untrained" employees did not prepare for or achieve a CompTIA certification but were otherwise trained for their roles.

Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

We used a similar analysis to determine if certification impacts performance in the IT security domain as well. We found that CompTIA certified IT security employees generally provide better levels of performance across a range of activities compared with employees who have not earned a CompTIA certification (see Table 2). Among the tasks that we examined, several stood out:

- Security attacks evaluated and responded to within 24 hours of awareness
- The use of "single sign-on" access to network resources
- Vulnerability of wireless networks or mobile devices
- PCs, notebooks, and mobile devices in compliance with security policy
- Security incidents investigated/evaluated using basic forensic procedures
- PCs, notebooks, and mobile devices with secure access to network resources

For these tasks and others, CompTIA Security+ certified IT staff performed 9-53% better than staff who had not prepared for a CompTIA certification.

TABLE 2

Security Activity Performance Comparison: Security+ Certified Versus Untrained IT Employees

Metric	CompTIA Certified	Untrained	% Difference
Percentage of malware, phishing, or other security attacks evaluated and responded to by your enterprise within 24 hours of awareness	66	43	53
Percentage of enterprise users who have "single sign-on" access to authorized network resources	62	43	44
Percentage of detected penetration attempts that exploit wireless networks or mobile devices	43	30	43
Percentage of PCs, notebooks, and mobile devices that access enterprise networks or resources that are in compliance with industry security policy for access control	86	74	16
Percentage of discovered security incidents investigated/evaluated using basic forensic procedures	59	51	16
Percentage of PCs, notebooks, and mobile devices that access enterprise network resources that are secured by a device-level password or similar access control	81	74	9
n =	893	168	

Notes:

Respondents self-identified as being directly responsible for each activity. The number of respondents varies per activity.

"Untrained" employees did not prepare for or achieve a CompTIA certification but were otherwise trained for their roles.

Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

Training Can't Stop with Certification

Unfortunately, over time, organizational performance degrades without sufficient and ongoing training. We found that as the time from the most recent training increased, performance on key tasks consistently declined. In the activities we examined, performance degraded by up to 25% over four years without ongoing training. This puts IT organizational performance and business performance at risk.
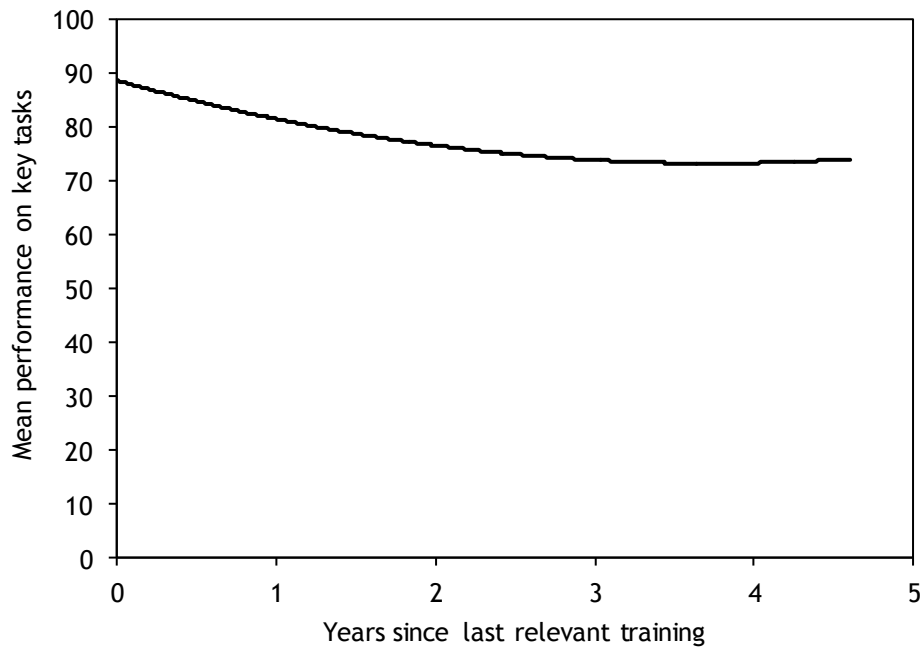
Performance degraded by up to 25% over four years without ongoing training.

In IT support, for instance, when examining those same activities described previously, we found that individual task performance degraded 10-23% over four years. We found that the percentage of enterprise PCs/notebooks configured for automatic patch/update management declined 23% over four years without training. Across all tasks, we found that IT support performance declined about 15% after four years without training (see Figure 4). In addition:

- The percentage of enterprise PCs/notebooks configured with continuous backup declined 10% over four years without training.

- The percentage of PC/notebook hardware repairs or malfunctions repaired or replaced within four hours declined almost 20% over four years without training.

- The percentage of time required to set up a new PC/notebook using an automated tool/process declined 10% over four years without training.

- The percentage of new networking devices deployed in less than two hours declined almost 20% over four years without training.

FIGURE 4

IT Support Performance Over Time

Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

In IT security activities, when examining those same activities described previously, we found that individual task performance degraded 10-25% over four years. We found the percentage of enterprise PCs, notebooks, and mobile devices secured by a device-level password declined by almost 25% over four years without training. Across all tasks, we found that performance on IT security-related tasks declined an average of 15% after four years without training (see Figure 5). In addition:

- The percentage of enterprise PCs, notebooks, and mobile devices in compliance with industry security policy for access control declined 10% over four years without training.

- The percentage of discovered security incidents that are investigated/evaluated using basic forensic procedures declined almost 20% over four years without training.

- The percentage of enterprise users with network/system passwords in compliance with company policy declined almost 10% over four years without training.

As systems, processes, and procedures change, it is essential that skills be maintained to ensure the level of performance the enterprise deserves is achieved.

FIGURE 5

IT Security Performance Over Time
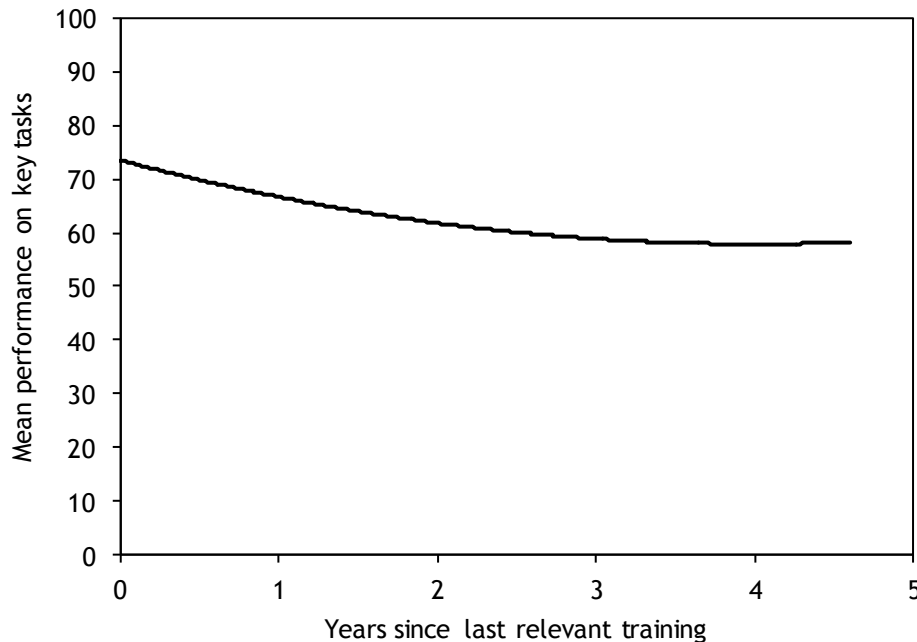
Source: IDC/CompTIA's *Support and Security Performance Survey,* 2014

Preparation, Validation, and Ongoing Skill Enhancement

Validating skills through well-designed certifications like CompTIA Security+ and A+ provides employers and their employees with the knowledge, confidence, and ongoing performance that are essential to the growing importance of IT in business success. CompTIA is a nonprofit trade association that works to advance the global interests of IT professionals and the IT channel with relevant IT certifications, IT education, and resources. Its relevant training portfolio, including support, security, cloud, networking, and a range of other topics, provides IT professionals with the validated knowledge and ongoing career development to begin and maintain their careers with confidence.

CONCLUSION

As IT systems become more essential to business operations, IT organizational performance is increasingly critical to overall IT success. Therefore, IT managers must maximize the performance of all of their IT resources, including their IT support and IT security staff.

One critical component of that performance is hiring skilled candidates and ensuring staff have the right training. This research found that the process of preparing for and achieving CompTIA certification leads to IT staff having increased domain knowledge and confidence in their ability to perform their assigned responsibilities and perform at a higher level in important IT support and IT security activities.

> **CompTIA certification leads IT staff to perform at a higher level in important IT support and IT security activities.**

In addition to certification, ongoing training is essential to maintaining high performance. Organizations must continually train their employees to ensure they maintain the highest levels of performance.

IDC believes that IT leaders should:

- Hire staff with validated, certified skills for key roles.
- Provide relevant, ongoing training for all staff.
- Monitor performance levels of key metrics and address declining performance quickly.

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