

The Cyber Security Employment Market



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Cyber Employment Market Statistics

1. According to researchers, the potential [cost of cybercrime](#) to the global community by 2021 is a mind-boggling [\\$6 trillion](#), and a data breach will cost the average company about \$13 million.
2. Cybersecurity experts predict there will be [3.5 million unfilled cybersecurity positions globally by 2021](#). While currently, nearly all Information Technology (IT) position is also responsible for cybersecurity which suggests that the cybersecurity workforce shortage is even greater.
3. The cybersecurity unemployment rate has remained at zero percent since 2016 and is expected to remain the same through 2021. “The field of cyber security is the least populated of any field of technology,” according to John McAfee. “[There are at least two job openings for every qualified candidate.](#)”
4. The National Association of Software and Services Companies (NASSCOM) recently estimated [that India alone will need 1 million cybersecurity professionals by 2020](#) to meet the demands of its rapidly growing economy.
5. According to billionaire investor Warren Buffett, [cyber-attacks are the largest threat to mankind](#) — even larger than nuclear weapons.
6. Currently, about [65% of large U.S. companies have a CISO](#) (Chief Information Security Officer) position, up from 50% in 2016. Researchers predict that percentage will grow to by 2021.
7. The cybersecurity industry has a [gender problem](#). Women hold only 11% of cybersecurity positions globally. Yet, they hold 25% of tech jobs, and they make up 50% of the population.
8. Two out of three high-schoolers say the idea of a career in [cybersecurity has never been mentioned to them](#) by a teacher, guidance or career counselor.
9. Only [38% of global organizations](#) claim they are prepared to handle a sophisticated cyber-attack. What’s worse? Over 60% of companies worldwide have admitted that they have experienced one or more attacks in the last 12 months.
10. Since 2018 there has been an [11% increase in security breaches](#). In the last five years, the increase in breaches is just over 67%.

Cyber Skills Gap

A survey conducted by an industry competitor in 2017 examined how organizations are addressing the cybersecurity skills gap.

According to the study, 93% of security professionals are concerned about the cybersecurity skills gap, and 72% believe it is more difficult to hire skilled security staff to defend against today's complex cyberattacks compared to two years ago. Significantly, 81% believe that the skills required to be a great security professional have changed in the past few years.

AMONG THE FINDINGS:

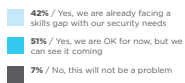
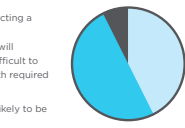
- 91 % plan to supplement their security team by outsourcing for skills
- 88 % said managed services would help solve the skills gap problem
- 96 % said automation will play a role in closing the skills gap; and
- 98 % said that other functions, such as non-security teams, will be more involved in cybersecurity in the future.

SKILLS GAP SURVEY RESULTS 2017

93% ARE CONCERNED ABOUT THE SECURITY "SKILLS GAP"

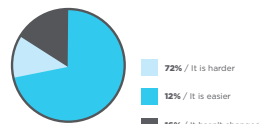
Some experts are predicting a "skills gap" in security organizations where it will become increasingly difficult to staff a security team with required skills and expertise.

In your opinion, is this likely to be a problem?



Almost 3 IN 4 SAY IT IS HARDER TO HIRE SKILLED SECURITY STAFF

How has the ability to hire skilled security professionals changed in the past two years?



Teams have CHANGED SIGNIFICANTLY AND WILL CONTINUE TO CHANGE

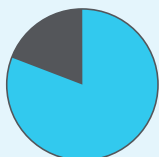
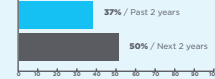
In what ways has your company's security team evolved in the PAST TWO YEARS?

In what ways do you expect your company's security team to evolve in the NEXT TWO YEARS?

We have hired people with expertise that was not security specific



We have invested heavily in training our existing staff



Needed SECURITY SKILLS HAVE CHANGED IN THE PAST YEARS

In your opinion, have the skills required to be a great security professional changed in the past few years?

81% / Yes 19% / No

91%

plan to supplement their team by outsourcing for skills

88%

believe managed services would add value to solving the skills gap problem

98%

expect other functions like non-security teams to be more involved in cybersecurity moving forward

96%

believe that automation will play a role in solving the skills gap in the future

Credit: tripwire.com/blog

Cybersecurity Roadmap

Multiple sources indicate that there will be an unmet need for between one and two million cybersecurity professionals by 2019. This means that the industry needs to create and [update the workforce for this new world in which cybersecurity is an important new discipline.](#)

The cybersecurity jobs market is growing three times faster than are IT jobs. They're [increasing at a rate 12 times that of the overall job market.](#)

[Computer science degrees are no longer enough,](#) the skillset required to work in a cybersecurity position requires a more robust and deeper knowledge of the field itself. Currently, few computer science programs in higher education offer a degree in cybersecurity, but instead, a short class integrated in the computer science program.

This skills shortage is causing a [global crisis](#) for employers looking to fill these positions.

CYBERSECURITY SKILLS CRISIS

TOO MANY THREATS

- US **\$3 trillion** total global impact of CYBERCRIME³
- 62%** increase in breaches IN 2013¹
- 1 IN 5** organizations have EXPERIENCED AN APT ATTACK⁴
- 8 months** is the average time AN ADVANCED THREAT GOES UNNOTICED on victim's network²
- 2.5 billion** EXPOSED RECORDS as a result of a data breach in the past 5 years⁵

TOO FEW PROFESSIONALS

- 62%** of organizations HAVE NOT INCREASED SECURITY TRAINING IN 2014⁶
- 1 OUT OF 3** security pros are NOT FAMILIAR WITH ADVANCED PERSISTENT THREATS⁷
- 83%** OF ENTERPRISES currently lack the right skills and human resources to protect their IT assets¹⁰
- 1 million** unfilled security jobs worldwide⁹
- <2.4%** graduating students HOLD COMPUTER SCIENCE DEGREES⁸

ENTERPRISES ARE UNDER SIEGE FROM A RISING VOLUME OF CYBER ATTACKS.

at the same time, the global demand for skilled professionals sharply outpaces supply. Unless this gap is closed, organizations will continue to face major risk. Comprehensive educational and networking resources are required to meet the needs of everyone from entry-level practitioners to seasoned professionals.

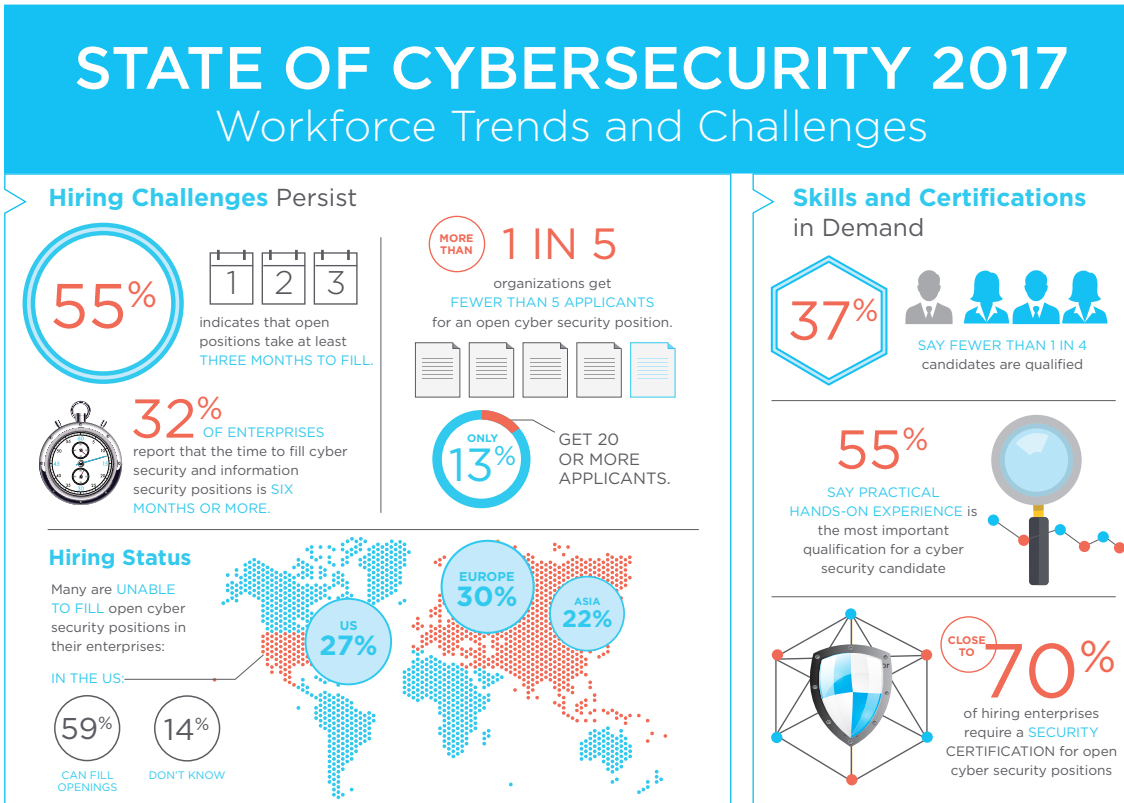
SOURCES: **1.** Increased Cyber Security Can Save Economy Trillions, McKinsey/World Economic Forum, January 2014; **2.** M-Trends 2013: Attack the Security Gap, Mandiant, March 2013; **3.** Increased Cyber security Can Save Global Economy Trillions, McKinsey/World Economic Forum, January 2014; **4.** ISACA's 2014 APT Study, ISACA, April 2014; **5.** Increased Cyber Security Can save Global Economy Trillions, McKinsey/World Economic Forum, January 2014; **6.** ISACA's 2014 APT Study, ISACA, April 2013; **7.** ISACA's 2014 APT Study, April 2014; **8.** Code.org, February 2014; **9.** 2014 Cisco Annual Security Report; **10.** Cybersecurity Skills Haves and Have Nots, ESG, March 2014

Credit: ISACA

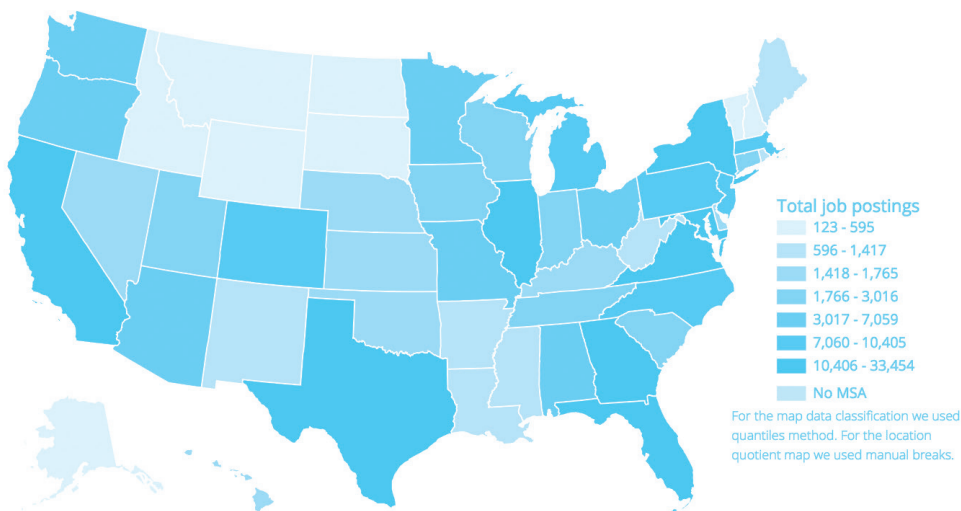
Cyber Workforce Analysis

According to the National Institute of Standards and Technology, the most sought out positions in cybersecurity include: Cyber Security Engineer, Cyber Security Analyst, and Cyber Security Manager.

Fewer job postings are requesting certifications, but instead are [requesting hands-on skills](#).



Credit: ISACA's State of Cyber Security 2017



Ciso Dive

1. More than 60% of IT professionals claim security teams are either understaffed or there is a skills gap, according to an (ISC)2 survey of 3,000 IT professionals from the 2017 Global Information Security Workforce. Only one-third of respondents said their company requires a security certificate.
2. Half of respondents believe company leadership does not grasp the need for thorough security measures and therefore leaves gaps in security protocols. There are 400,000 daily potential malware threats, according to the report, and only 11% of respondents said their company can detect a data breach in real time.
3. There are approximately 300,000 open cybersecurity positions in the United States, and by 2022, it is expected to rise to 1.8 million.

CYBERSECURITY SKILLS SHORTAGE

HOW SMART CISOs ARE DEALING WITH THE CYBERSECURITY SKILLS SHORTAGE

The cybersecurity skills shortage impacts organizations of all sizes, industries, and geographies. This means CISOs should consider the implications of the skills shortage in every decision they make. Smart CISOs are doing their best to cope with this situation by:

CONSOLIDATING AND INTEGRATING SECURITY TECHNOLOGIES. This includes building an integrated security operations and analytics platform architecture (SOAPA) that lets them manage and utilize security technology holistically rather than on a tool-by-tool basis.

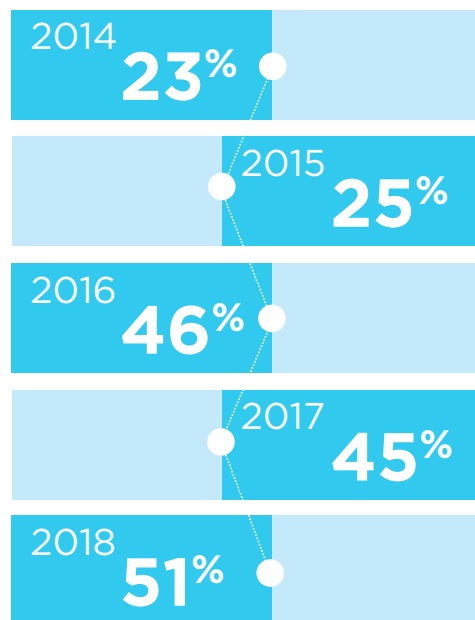
MOVING TOWARD TECHNOLOGIES WITH ADVANCED ANALYTICS. Think of artificial intelligence and machine learning as a helper application that can accelerate security processes and make the staff more productive and utilize security technology holistically rather than on a tool-by-tool basis.

AUTOMATING AND ORCHESTRATING PROCESSES. Cybersecurity grew up with a reliance on manual processes, but these processes can no longer scale to meet growing demands. As a result, security automation/orchestration has become a top priority for many organizations.

TAKING A PORTFOLIO MANAGEMENT APPROACH TO SECURITY. CISOs are taking stock of their people, skills, and limitations and managing accordingly. How? Using cloud computing, SaaS offerings, and managed security services to cut costs, simplify security infrastructure, or delegate specific security controls and operations to third parties.

INVESTING IN THEIR PEOPLE. Experienced infosec pros can change jobs at will and greatly increase their compensation in the process. To safeguard against massive attrition, CISOs are increasing staff compensation, investing in career development, mentoring, and training, providing opportunities for the staff to get involved in security research, and encouraging cybersecurity staff members to network with others through professional organizations, such as ISSA.

PERCENT OF RESPONDENTS CLAIMED THEIR ORGANIZATION HAD A PROBLEMATIC SHORTAGE OF CYBERSECURITY SKILLS



Credit: Jon Oltsik, CSO

CYBER SECURITY SALARY

Average Yearly Salary \$60,000 – \$116,000

Cybersecurity professionals report an average salary up to \$116,000, or approximately \$55.77 per hour. That's nearly three times the national median income for full-time wage and salary workers, according to the Bureau of Labor Statistics.

U.S. BUREAU OF LABOR STATISTICS

There's one clear reason that we're watching Cybersecurity careers - demand for jobs like Cybersecurity Security Analyst and Information Security Analyst has completely taken off in recent years.

According to the Bureau of Labor statistics, jobs in information security are expected to grow 37% by 2022- much faster than most careers. Hot areas for growth are security analytics / SIEM (10%); threat intelligence (10%+); mobile security (18%); and cloud security (50%).

Forbes reported that there were over one million cyber security job openings in 2016. Before we dive into Forbes' findings as far as salaries, let's take a look at median annual salaries as reported by the U.S. Bureau of Labor Statistics (BLS) 2016-17 Occupational Outlook Handbook.

It's important to note the BLS takes an average across the country, not just in large metropolitan areas where salaries will naturally be higher, or tech hubs like Seattle and Silicon Valley. Here are salaries for network security and cyber security-related roles:

MEDIAN ANNUAL SALARY FOR CYBER SECURITY CAREERS

[Information Security Analyst](#) — \$90,120

[Cyber Security Analyst](#) — \$80,314

[Information Systems Manager](#) — \$131,600

THE BLS SAYS CYBER SECURITY ANALYSTS WILL EARN THE HIGHEST PAY IN THESE TYPES OF INDUSTRIES:

[Management and Technical consulting services](#) — \$95,520

[Finance, Banks, Credit Intermediation Services](#) — \$93,840

[Information Management](#) — \$93,710

[Computer systems design companies](#) — \$90,280

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