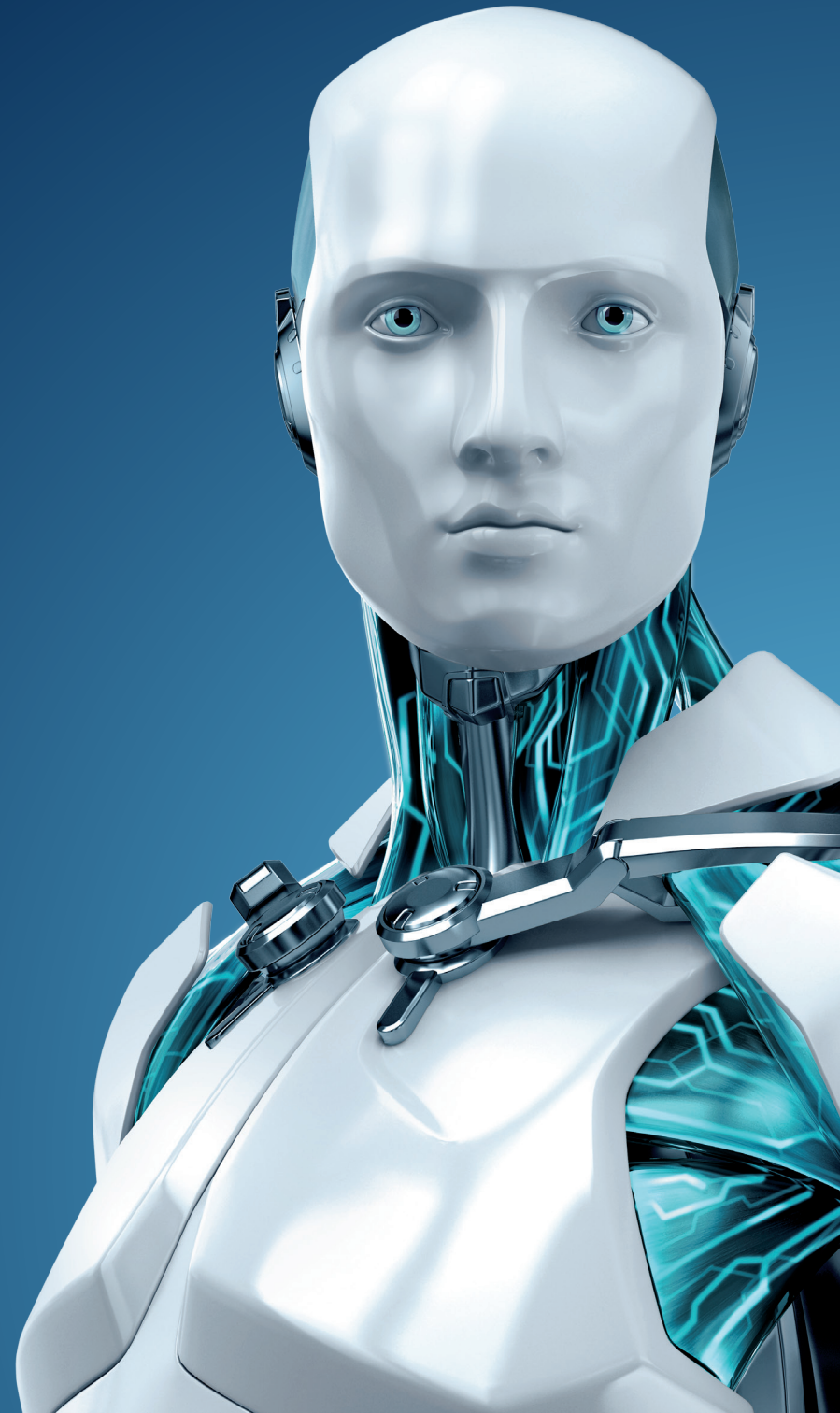# TECH BRIEF

Hottest career?
Cybersecurity.

HOTTEST CAREER? CYBERSECURITY.

By Robin Dishon, ESET Staff

In a world where data leaks, high-profile breaches, and identity theft have become everyday occurrences, it should be no surprise that cybersecurity is being called the hottest career of the millennium.

Digital technology has changed the face of business, creating complex challenges in information management. Data has become a commodity—stolen, bought and sold by petty criminals, nation-states and organized crime syndicates alike. And government compliance regulations have added to the burden of already overworked IT teams.

In short, the need for cybersecurity specialists has exploded.

The only problem? A lack of qualified professionals to fit such 21st-century job descriptions as chief information security officer (CISO), security architect, vulnerability assessor, and cryptanalyst.

- The 2015 Global Information Security Workforce Study projects that the shortfall in the global information security workforce will reach 1.5 million in five years. This shortfall is the difference between projections of the workforce needed to fully address escalating security staffing needs and workforce supply constraints (e.g., a tightening labor market among security professionals).

- According to ESET Senior Researcher Stephen Cobb, estimates of the shortfall of qualified cybersecurity workers in the U.S. alone range from 50,000 well into six figures.

- A survey of more than 500 organizations by the Ponemon Institute showed that almost four in 10 IT security positions went unfilled in 2013. The figure was almost six in 10 for senior cybersecurity jobs.

The 10 Highest-Paying IT Security Careers

Lead Software Security Engineer – $233,333

Chief Security Officer – $225,000

Global Information Security Director – $200,000

Security Consultant – $198,909

Chief Information Security Officer – $192,500

Director of Security – $178,333

Cyber Security Lead – $175,000

Lead Security Engineer – $174,375

Cybersecurity Engineer – $170,000

Application Security Manager – $165,000

Source: Dice.com, May 2015

Two of the main issues are the gradual aging of the cybersecurity workforce and the lack of training in the field for young workers. The Department of Homeland Security reports that 80% of those currently working in cybersecurity are 40 or older, and 32% are eligible for retirement now or within the next three years. Fewer than 6% are 30 or younger.

The good news? There are plenty of opportunities for both newcomers and veterans in the IT industry, as well as students and workers looking to change careers. As a bonus, salaries tend to be well above average.

A 2014 survey by Semper Secure, a partnership in Virginia formed to advance the cybersecurity profession, lists the average annual salary for U.S. cybersecurity professionals at $116,000. That's nearly three times the national median income for full-time wage and salary workers, according to the Bureau of Labor Statistics.

Experts in the information security field agree that not all cybersecurity jobs require degrees (although some do), and that training and certification is a viable path to building the necessary knowledge and skill set.

- Previous technical or computer experience isn't an absolute necessity. Companies surveyed in the Global Information Security Workforce Study about the most important skills and competencies ranked "communications skills" as the most important attribute.

- "Analytical skills" ranked second, ahead of more concrete competencies, such as architecture; incident investigation and response; info systems and security operations management; and governance, risk management, and compliance.

- Teamwork, problem solving, and the ability to explain technical concepts and problems to nontechnical workers were listed as important for any position in cybersecurity.

In the U.S., the cybersecurity employment shortage is being addressed by programs such as the National Initiative for Cybersecurity Education (NICE), whose components focus on different levels of education. Among them are the Education Department and National Science Foundation's formal cybersecurity education component, aimed at students as young as kindergarten and up to 12th grade. Organizations such as San Diego's Securing Our eCity Foundation support these initiatives with competitions, scholarships, and learning events for middle school and high school students. Companies such as ESET, which participates in a yearly cyber boot camp for high school students hosted by Securing Our eCity, are also increasing their efforts to interest young people in IT careers.

College degrees related to cybersecurity range from two-year associate degrees to four-year degrees, master's degrees, and doctoral programs covering an enormous range of topics and specialties. Cloud computing, Bring Your Own Device (BYOD) security, incidence response, and information risk management were all listed in the Global Information Security Workforce Study as rapidly growing fields for employment.

Industry employers also recommend getting IT certifications, ranging from CompTIA Security+ and GIAC Security Essentials to advanced designations such as Certified Information Systems Security Professional (CISSP) and Certified Information Security Manager (CISM) that document your training, experience, and skills.

Before starting a program, see whether your institution has been designated as a National Center of Academic Excellence (CAE) in Information Assurance/Cyber Defense by the National Security Agency (NSA) and Department of Homeland Security (DHS). These centers are recognized leaders in these fields.

Ready to learn more? Resources include:

- National Initiative for Cybersecurity Education (NICE): http://csrc.nist.gov/nice/

- National Institute for Cybersecurity Careers and Studies (NICCS): http://niccs.us-cert.gov/

- WeLiveSecurity.com (ESET's research blog)

- Securing Our eCity Foundation: (SecuringOureCity.org)

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Securing Our eCity Foundation is an award-winning San Diego non-profit focused on cybersecurity awareness and education for businesses and consumers.