

## ESG Brief

# Cybersecurity Skills Shortage: A State of Emergency

**Date:** February 2016 **Author:** Jon Oltsik, Principal Analyst, Doug Cahill, Senior Analyst, and Bill Lundell, Director of Research

**Abstract:** ESG has been researching, writing about, and addressing the cybersecurity skills shortage for a number of years. Unfortunately, this situation continues to deteriorate. In a disquieting development, nearly half of organizations now claim to have a *problematic shortage* of cybersecurity skills. Additionally, a vast majority of organizations acknowledge that it is difficult to recruit and hire cybersecurity talent. ESG believes that this trend represents a national security risk demanding a comprehensive strategy from national governments.

## Overview

ESG recently completed its annual IT spending intentions survey of 633 senior IT and cybersecurity professionals at midmarket (i.e., 100 to 999 employees) and enterprise (i.e., 1,000 or more employees) organizations across North America, Western Europe, and Asia Pacific.<sup>1</sup> As part of this research, ESG asks survey respondents where their organizations have a problematic shortage of specific IT skillsets. For the past four years, information security/cybersecurity topped the list of skills shortages and in 2015, 28% of organizations claimed to have a problematic shortage of cybersecurity skills.

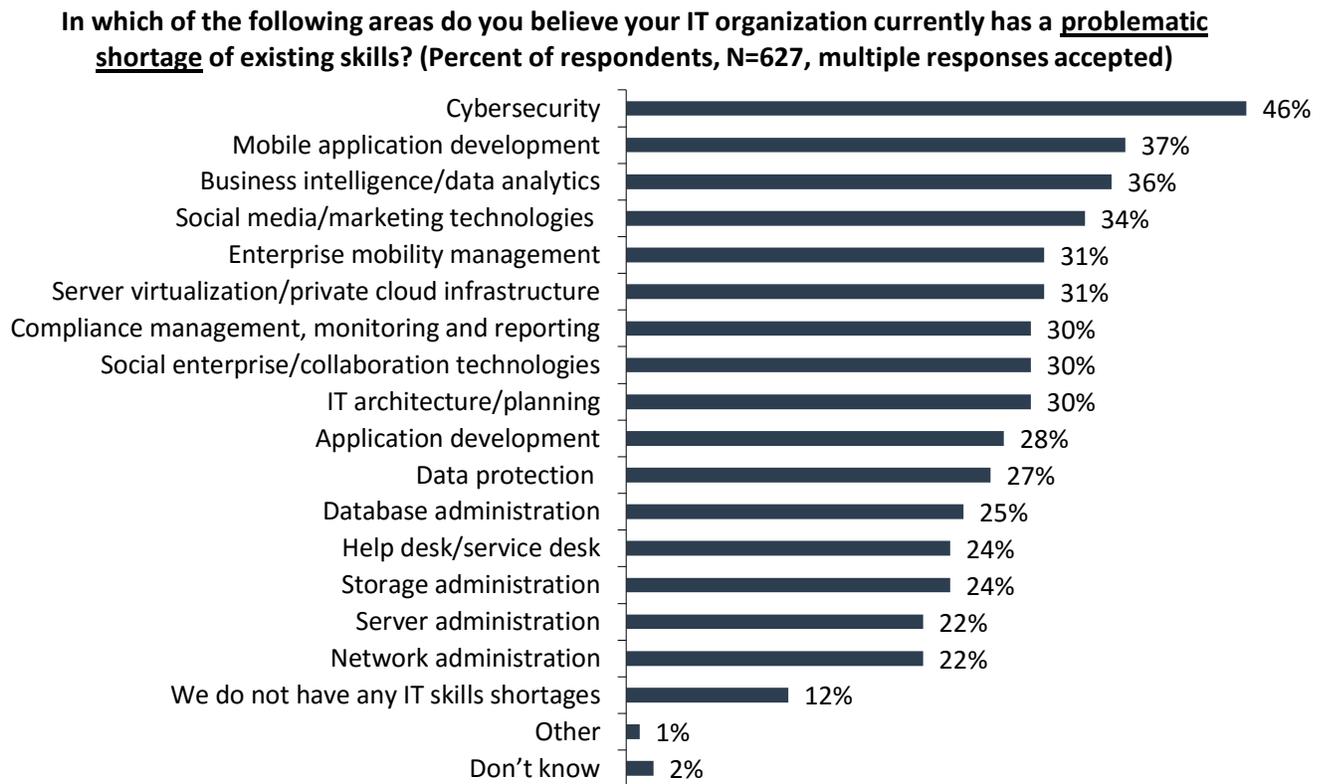
While ESG expected the cybersecurity skills shortage to continue, Figure 1 reveals this year's results to be especially distressing—46% of organizations now claim that they have a problematic shortage of cybersecurity skills, which is up significantly from last year when just more than one-quarter (28%) of respondents categorized their lack of cybersecurity skills as problematic. This is an especially alarming upsurge given more modest annual increases in the past (i.e., 23% in 2013, 25% in 2014, and 28% in 2015).

The cybersecurity skills shortage manifested itself in the form of an opportunity as well. Specifically, when these senior IT and cybersecurity professionals were asked to identify the areas in which skills development would be the *most* beneficial to their employees' career paths, and ultimately to the organization as a whole, 44% pointed to cybersecurity (see Figure 2). To put this into perspective, this is nearly double the number of respondents who said big data analytics, which has been among the most talked and written about subjects in IT over the last several years.

---

<sup>1</sup> Source: ESG Research Report, *2016 IT Spending Intentions Survey*, to be published.

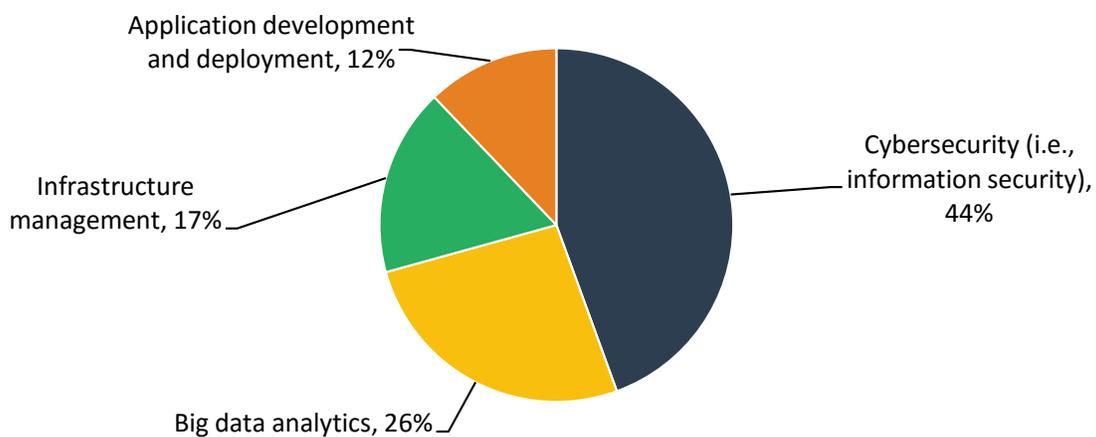
**FIGURE 1. Areas of IT Skills Shortage**



Source: Enterprise Strategy Group, 2016.

**FIGURE 2. Where IT Managers See Career Growth Potential**

**In which of the following functional areas do you believe skills development would be most beneficial to your employees (i.e., IT staff) in terms of their career path and benefit to your organization? (Percent of respondents, N=627)**



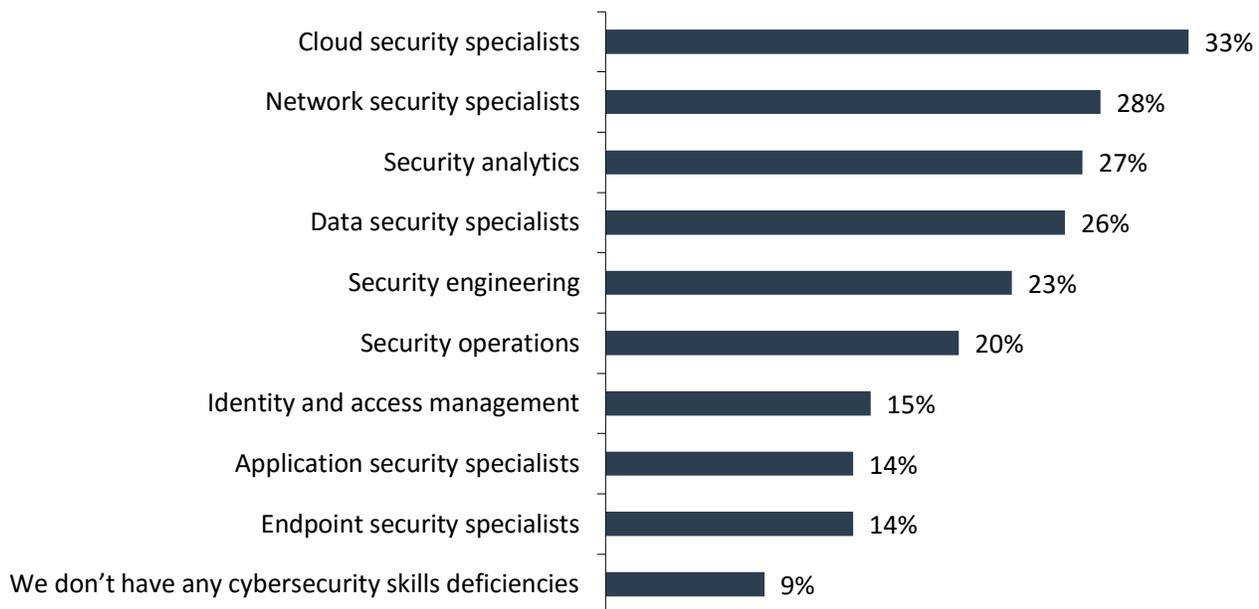
Source: Enterprise Strategy Group, 2016.

## Cybersecurity Skills Trends

Nearly half of all organizations surveyed claim to have a problematic shortage of cybersecurity skills, but are these skills in any particular area? To some extent. As the ESG data illustrates, one-third of organizations say that their biggest cybersecurity skills need is for cloud security specialists (see Figure 3). This shouldn't be particularly surprising since many organizations are aggressively moving workloads to cloud-based environments and thus need to find employees who know how to protect and monitor this activity. Beyond cloud however, ESG is troubled by many of the other needs such as network security specialists, security analysts, and data security specialists. These are standard cybersecurity skills by any measure, so this data indicates that many organizations remain understaffed and under-skilled in core cybersecurity domains.

**FIGURE 3. Cybersecurity Areas with Biggest Skills Deficiency**

**Which areas of cybersecurity would you say that your organization has the biggest skills deficiency? (Percent of respondents, N=299, three responses accepted)**



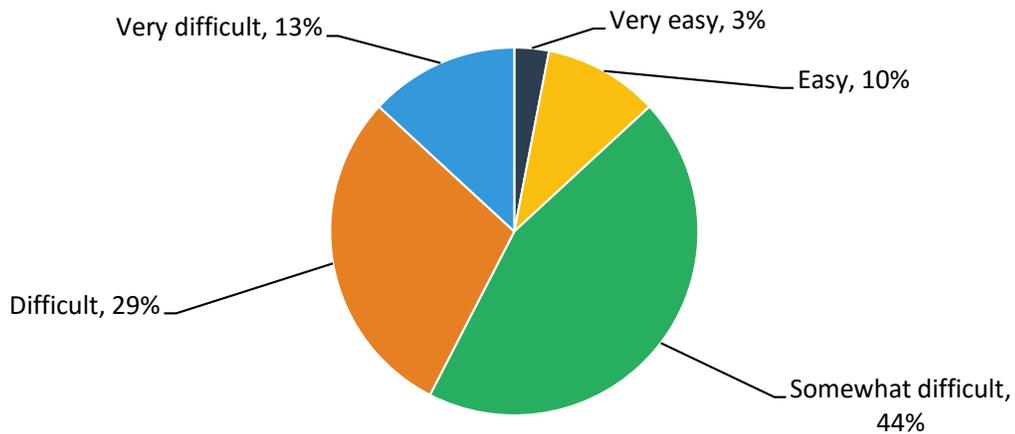
*Source: Enterprise Strategy Group, 2016.*

ESG (and others) have been calling attention to the cybersecurity skills shortage for a number of years, but the data presented in this brief indicates that the situation continues to degrade. This point is further evidenced by the fact that 87% of survey respondents claim that it is very difficult, difficult, or somewhat difficult to recruit and hire cybersecurity professionals (see Figure 4). This is consistent with anecdotal stories in which CISOs claim that open requisitions go unfilled for months at a time while cybersecurity staff complains of being constantly overwhelmed by the amount of work at hand, as well as ahead.

How can CISOs stand out from the crowd and attract cybersecurity talent? Competitive salaries are table stakes when it comes to being competitive in recruiting (see Figure 5). Beyond money, however, ESG data indicates that cybersecurity professionals are attracted to opportunities for personal growth such as the ability to work with leading security technologies and processes, side benefits related to training and skills development, and the ability to work in an organization and/or industry targeted by cyber-threats. Clearly, cybersecurity professionals want opportunities that challenge them, educate them, and support them.

**FIGURE 4. Difficulty in Recruiting and Hiring Cybersecurity Professionals**

**In your opinion, how difficult is it for your organization to recruit and hire cybersecurity professionals? (Percent of respondents, N=299)**



Source: Enterprise Strategy Group, 2016

**FIGURE 5. Factors Most Important to Potential New Cybersecurity Hires**

**When your organization does recruit and hire cybersecurity professionals, which of the following factors do you believe are most attractive to potential candidates? (Percent of respondents, N=299, five responses accepted)**



Source: Enterprise Strategy Group, 2016

Driven by continuing cybersecurity skills shortages, many organizations have no choice but to turn to managed and professional services organizations to supplement internal staff. As Figure 6 demonstrates, more than one-third (35%) of organizations engage these firms in preparation for regulatory compliance audits, while 30% leverage these services to help with strategic cybersecurity planning and/or cybersecurity insurance underwriting, the latter of which is a relatively new services need. Additionally, 23% of organizations will outsource some cybersecurity tasks to an MSSP. Given the pervasive cybersecurity skills shortage, this percentage will most likely grow in the future.

**FIGURE 6. Areas Organizations Will Engage a Third-party Services Firm for 2016 Cybersecurity Initiatives and Projects**

**In which of the following areas do you believe your organization will likely engage a third-party services firm for consultation on 2016 cybersecurity initiatives and projects?  
(Percent of respondents, N=299, multiple responses accepted)**



Source: Enterprise Strategy Group, 2016

### The Bigger Truth

ESG has been one of several organizations tracking the cybersecurity skills shortage and sounding the alarm for many years. While a few tactical programs have attempted to address this shortfall, ESG views them as lip service rather than a real solution. Alarming, the situation appears to be getting much worse—so much so that ESG now believes that the growing cybersecurity skills shortage represents a national security risk. Simply stated, demand for trained and experienced cybersecurity professionals far exceeds supply. Lacking a comprehensive cybersecurity education and training strategy, large organizations will continue to battle highly sophisticated and well-organized cyber-adversaries with their own skeleton crew.



All trademark names are property of their respective companies. Information contained in this publication has been obtained by sources The Enterprise Strategy Group (ESG) considers to be reliable but is not warranted by ESG. This publication may contain opinions of ESG, which are subject to change. This publication is copyrighted by The Enterprise Strategy Group, Inc. Any reproduction or redistribution of this publication, in whole or in part, whether in hard-copy format, electronically, or otherwise to persons not authorized to receive it, without the express consent of The Enterprise Strategy Group, Inc., is in violation of U.S. copyright law and will be subject to an action for civil damages and, if applicable, criminal prosecution. Should you have any questions, please contact ESG Client Relations at 508.482.0188.



**Enterprise Strategy Group** is an IT analyst, research, validation, and strategy firm that provides market intelligence and actionable insight to the global IT community.

© 2016 by The Enterprise Strategy Group, Inc. All Rights Reserved.

