Digital transformation (DX) is the adoption of fundamentally new strategies and business models that take advantage of changes in digital technologies. A good starting point for a transformational effort is a robust digital platform designed to enable collaboration between business and IT. The creation of such a platform is likely to require technology skills that are in short supply in most enterprises. This may include a need for staff with experience in big data analytics, DevOps, cloud computing, microservices development, data science, machine learning/AI, IoT, mobility, security, and more.

There is steady progress on a yearly basis toward embracing DX. In fact, according to ESG's 2019 Technology Spending Intentions Survey, 57% of respondents have currently implemented/or are implementing initiatives in this area (see Figure 1). And respondents’ expected increases in IT investments around public cloud, AI/ML, security, and public cloud applications reflect the importance these technologies play in an enterprise’s digital evolution. However, while many view technology, organizational dynamics, and budget constraints as their biggest challenges or concerns regarding DX initiatives, 32% of respondents cited a lack of staff with the necessary skills/experience to make it happen as a challenge.¹

¹ Source: ESG Research, 2019 Technology Spending Intentions Survey.
The Skills Required to Enable Enterprises to Digitally Transform Are in Short Supply

The business agility of many enterprises is dependent on the responsiveness of their IT organizations and their ability to embrace DX. This requires staff with the right skills to do the required work—skills for which there is often a shortage of trained personnel (see Figure 2). Therefore, the need to provide skills training in areas such as security, IT architecture, AI/ML, etc., continues to grow as an increasing number of enterprises require the creation and ongoing support of digital platforms. This enables them to embrace a world in which timely access to data can be the difference between their success and failure. Common across most of these technology disciplines is the requirement for security, especially as it relates to securing and protecting applications, infrastructure, and data.

Figure 2. Top Six Areas for Skill Shortages in IT Organizations

<table>
<thead>
<tr>
<th>Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cybersecurity</td>
<td>53%</td>
</tr>
<tr>
<td>IT architecture/planning</td>
<td>38%</td>
</tr>
<tr>
<td>Artificial Intelligence/Machine Learning (AI/ML)</td>
<td>35%</td>
</tr>
<tr>
<td>Data analytics/data science</td>
<td>34%</td>
</tr>
<tr>
<td>IT orchestration and automation</td>
<td>33%</td>
</tr>
<tr>
<td>Application development/DevOps</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: Enterprise Strategy Group

Ibid.
With this in mind, organizations have some critical security skills matters to consider:

- **Security skills are required within IT organizations to enable and protect DX building blocks.** Yet 53% of respondents to ESG’s 2019 Technology Spending Intentions Survey report that there is a problematic shortage of existing security skills within their IT organizations. This shortage of skilled security staff is directly impacting the security posture of many enterprises. In ESG’s most recent The Life and Times of Cybersecurity Professionals survey, 31% of respondents stated that one of the three biggest contributors to security events was a lack of security skills and/or staff. In fact, 96% of those security professionals agree or strongly agree that they must keep up with their skills or the organizations they work for are at a significant disadvantage against today’s adversaries.

In that same survey, it is clear that enterprises are getting the message, as 50% of respondents reported that their employer increased training for their security and/or IT staff, and 46% said their organization increased the size of its security staff. Of note, 76% of security professionals viewed attending security training courses as the most effective method for increasing knowledge, skills, and abilities. However, there is more to be done, as 62% stated that their employer does not do enough in regard to security training in order to keep up with business and IT risk. Given that security is a key component of many DX initiatives, continuous skill development is an absolute requirement.

- **Cloud-based security requires a unique set of skills.** As enterprises continue to evolve digitally, an ever-increasing number of workloads and data are migrating to the public cloud. However, on-premises data security programs are much more mature than cloud, and data loss across cloud services is common. ESG has found that to address this challenge, 60% of organizations have hired a cloud security architect, and another 23% are actively hiring for this position or plan to establish this position within 12-24 months. This new role within IT organizations reflects the unique skills required to address cloud-based security—a role that has emerged with broad responsibilities and influence.

- **Security risk management staffing needs to be increased.** In many enterprises, the ability to provide a detailed understanding of security risks and a plan for how they are managed is a board-level requirement. However, an effective security risk management program requires personnel with a variety of skills that enable them to electronically inventory assets, assess risk, plan and deploy countermeasures, design and implement business continuity plans, test for vulnerabilities, monitor for threats, manage vulnerabilities, detect attacks, and respond. As enterprises embrace DX, the same security risk management practices can extend to third-party organizations, and ESG research shows that 44% of third-party risk management (TPRM) security audit processes lack sufficient resources. So too, the requirement to comply with various regulations is driving the need for new roles with the appropriate security skills/training. Just as the move to the cloud resulted in the creation of the cloud security architect role, so too the need to comply with GDPR has driven the need for data protection officers (DPO). ESG survey results show that 35% of enterprises have a dedicated DPO, while another 23% are actively hiring for this position or plan to establish this position within 12-24 months.

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3 Source: Ibid.
5 Source: Ibid.

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ESG research has found that the security skills shortage is a perennial challenge. Security skills have been the most-cited skills deficit in ESG’s annual spending intentions surveys for the past four years, with the percentage of organizations reporting a problematic security skills gap increasing every year from 2015 to 2019. However, this security skills shortage represents both a challenge and an opportunity for the industry. Fortunately, there are vendors that are working hard to address the problem.

**Enter Skillsoft**

Skillsoft aligns with today’s need for security professionals who can support digital transformation initiatives.

Skillsoft is headquartered in Dublin, Ireland with their US headquarters in Nashua, NH. The company’s mission is to prepare the global workforce to leverage the building blocks of the modern digital economy, and its Technology and Developer solutions cover a range of focus areas, content, and consumption models that IT organizations can leverage to up-level skills. These multimodal learning solutions reflect a growing investment in IT/developer learning and training content for DevOps, cloud, microservices, security, and data—key areas of skill development required to support DX initiatives.

Skillsoft’s training resources include courses, videos, hands-on live practice labs, virtual mentoring, a large library of books and audio-books, as well as certification prep exams and assessments. In total, this content can provide technical professionals the skills/knowledge and certification training needed to support an enterprise’s DX initiatives while continuing to do the jobs for which they were hired.

Skillsoft’s learning model is designed to support people in their flow of work, where they can “Watch, Read, Listen and Practice.” Skillsoft believes this approach helps enterprises continually adapt in an age of digital disruption and transformation. The model identifies a learning path for an “aspirational persona” that includes sequenced instruction, practice and application, and in-demand credentials. For example, if someone in the role of security technician aspires to become a cloud security architect, the Skillsoft model will first direct her to learn how to be a security administrator and then a cloud security administrator, before pursuing the role of cloud security architect.

Of note, Skillsoft provides coverage for 100+ professional IT certification exams from leading software, hardware, cloud, and professional organizations, with a tracked pass rate of 90%. And its certification training includes ~20 security certifications including: CISM, CCSP, CISSP, Foundations of Android and iOS Security, Cisco (CCNP or CCNA), and more. Given the current security skills gap discovered in ESG research, this benefit should be attractive for Skillsoft customers.

**The Bigger Truth**

Enterprises exist in a world in which timely access to data is crucial to making informed decisions. A world in which critical business and operational systems are increasingly connected to third-party organizations—systems that can also be accessed remotely by customers, suppliers, partners, etc. This digital evolution is required if enterprises don’t want to find themselves at a significant disadvantage to their competition.

DevOps, the cloud, microservices development, data science, machine learning, and AI are key building blocks upon which these changes are built, with security as a common discipline across each of these areas. Staffing pressures for security experts will continue, as nearly half of security professionals report that they are solicited for new jobs by recruiters at least once per week, and 14% state that they receive overtures regarding new opportunities five times per week or more.9

Given the shortage of people with the skills required to support DX, it is not unreasonable for employees to expect their organization to prepare them for the new roles that DX will require. Increased and more expansive training around security has the potential to raise the overall maturity of an enterprise.

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Forward-thinking organizations are getting more strategic about skills training for their employees. They understand that the knowledge required to enable digital transformation and maintain a digitally evolved enterprise requires ongoing and easily available education. Skillsoft has a long history of successfully delivering just such training. In 2018, its customers consumed ~21M hours of learning content around the world, approximately 21% (4M+ hours) of which was related to security skills training and certification. Moving forward, CISOs may find it worthwhile to provide access to Skillsoft’s training portfolio as part of their employee development programs.