IT Trends Report 2019

# Skills for Tech Pros of Tomorrow

March 2019

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# Contents

# Overview

## Today's technology professionals are at an inflection point in their careers.

They have one foot grounded in today's realities, while the data suggests they're also setting their sights on what's to come—often with a bit of trepidation about their ability to manage emerging technologies.

Common technologies of recent history are still top-of-mind for tech pros. They say they want to work on hybrid IT, security management, and software-defined skills for current implementation. However, technologies such as artificial intelligence (AI) and big data analytics, and career paths like data science, and coding fall within the top five technologies or skillsets these pros are looking to develop. What's more, tech pros are eyeing career development goals like leveraging technology expertise to take part in their organization's innovation and strategy—they're learning to speak a new business language as they increasingly seek a seat at the executive table. They're also beginning to consider the effects of emerging tech on their careers, yet feel unequipped to implement and manage impending innovations.

With an understanding of the skillset and career development landscape, it's important to note that not only is more training in these areas needed— it's desired. In addition to lacking full confidence in their ability to manage environments, time- and budget-constrained technology leaders have been unable to meet the demands of tech pros who crave weekly training sessions. The urgency of day-to-day tasks often impedes their ability to participate in learning sessions they find most valuable, like full-day courses, self-guided trainings, or webinars.

The data suggests a greater need to empower skillset and career development for technology professionals, so they can continue helping businesses transform their technology today while also preparing for future disruption.

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**Data suggests a greater need to empower skillset and career development for technology professionals**

*The findings are based on a survey fielded in December 2018, which yielded responses from 966 technology practitioners, managers, and directors from public-and private-sector small, mid-size, and enterprise companies across North America, Australia, Germany, Hong Kong, Singapore, and the United Kingdom.*

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# Key Findings

## Confidence

The majority of technology professionals are not fully confident they have all the skills needed to manage their environments into the near future, especially when it comes to emerging tech.



**Figure 1: Confidence is lacking**

70% of all tech pros surveyed are not "completely confident" in having all the necessary skills to successfully manage their IT environments over the next three to five years—even though 98% of tech pros have worked to develop a skill over the past 12 months.
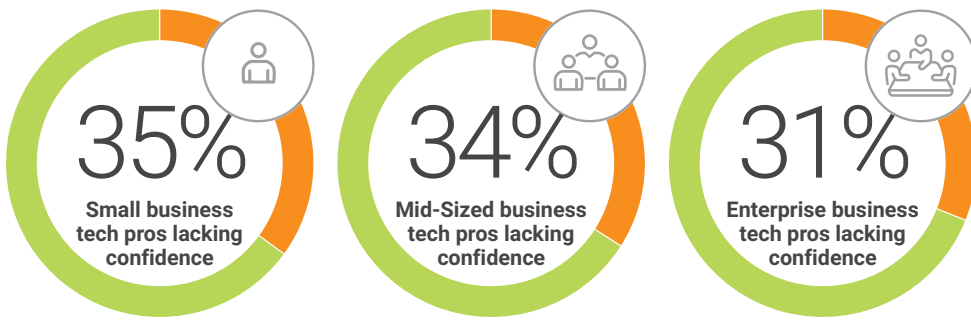
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**35%**
Small business
tech pros lacking
confidence

**34%**
Mid-Sized business
tech pros lacking
confidence

**31%**
Enterprise business
tech pros lacking
confidence

**Figure 2: Need for skills growth is consistent across business size**

35% of small business tech pros are somewhat to completely unconfident in their ability to manage environments into the near future with current skillsets, compared to 34% of medium-size tech pros and 31% of enterprise tech pros who share this sentiment.

When it comes to the idea of implementing or managing specific technologies, emerging tech is a pain point (despite how much mindshare these buzzworthy technologies get in headlines). The top three technologies tech pros feel unequipped to manage with their current skillsets are:
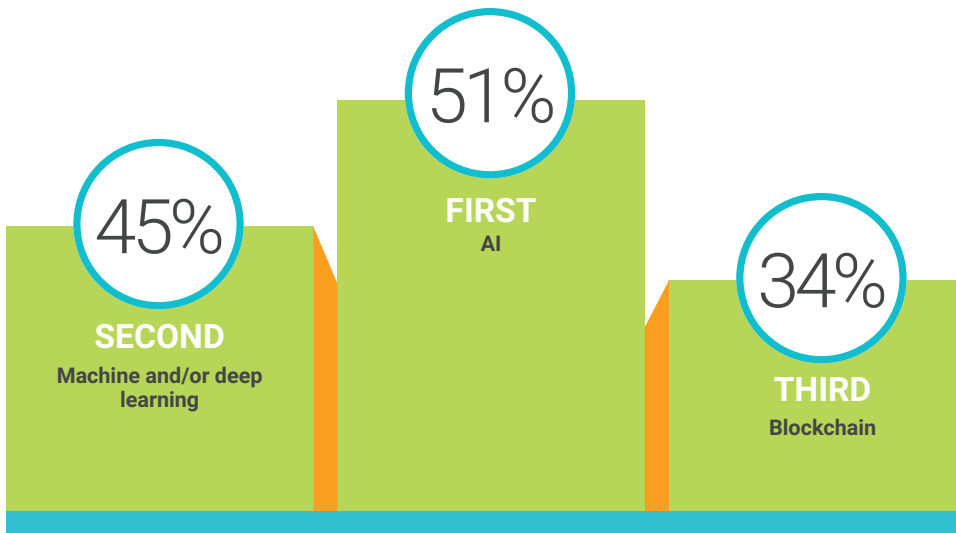
**51%**
**FIRST**
AI

**45%**
**SECOND**
Machine and/or deep
learning

**34%**
**THIRD**
Blockchain

**Figure 3: Emerging tech is a painpoint.**

According to the Gartner® list of strategic technology trends that have the potential to disrupt and are on the verge of becoming more widely used in the next five years, AI and blockchain both rank in the top 10.

There is a great opportunity for tech pros to increase their knowledge of these technologies and to have productive conversations with businesses on the reality of implementation in the near future.

# Skillsets

Tech pros will continue building skills in daily operations with an eye toward areas like data science.

**46%**
Systems and infrastructure management

**44%**
Cloud and/or hybrid IT

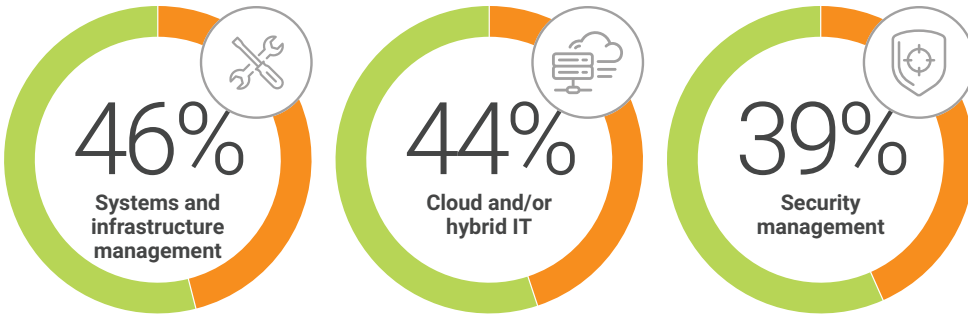**39%**
Security management

**Figure 4: Skill priorities are clear**

In the past 12 months, tech pros have prioritized skills in systems and infrastructure management (46%), cloud and/or hybrid IT (44%), and security management (SIEM, policies, compliance, 39%).

In the next three to five years, the top two skills tech pros plan to develop are security management (49%) and hybrid IT deployment monitoring and management (48%).
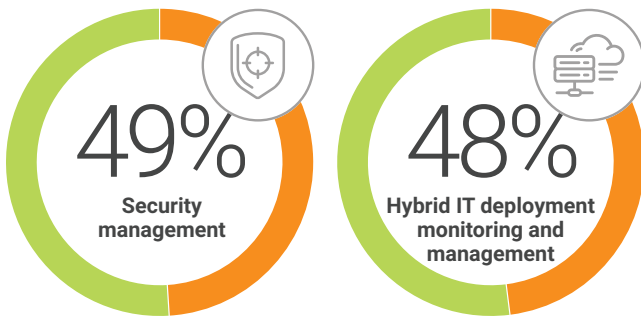
**49%**
Security management

**48%**
Hybrid IT deployment monitoring and management

**Figure 5: Planning ahead**

This is in line with what tech pros say will be most important to their organizations' transformation over the next three to five years (by weighted rank): cloud and/or hybrid IT.

It's also in line with findings from the SolarWinds IT Trends Report 2018: The Intersection of Hype and Performance. Last year, 81% of surveyed tech pros worldwide said cloud and hybrid IT are among the top five most important technologies that will drive their organizations' digital transformation over the next three to five years.

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Tech pros' instincts are correct when it comes to their top two skillset areas as they are expected to see continued growth, according to Gartner:

The firm predicts that the Worldwide Public Cloud Services market will grow by 17.33% in 2019, going from $175.8 billion USD in 2018 to $206.2 USD billion this year.

Gartner research analysts also estimate that global revenue for the information security market will grow at a compound annual growth rate (CAGR) of 7.8% between 2017 and 2022, reaching $143 billion USD in constant currency terms.

Data science and analytics round out the top three skillsets tech pros plan to develop in the next three to five years.

The desire to build skills in data science also hints at tech pros' preparation for emerging tech like AI.

## Career Development

Tech pros say hybrid IT, big data analytics, and AI are the key technologies for career development, which will help achieve higher goals like innovation.
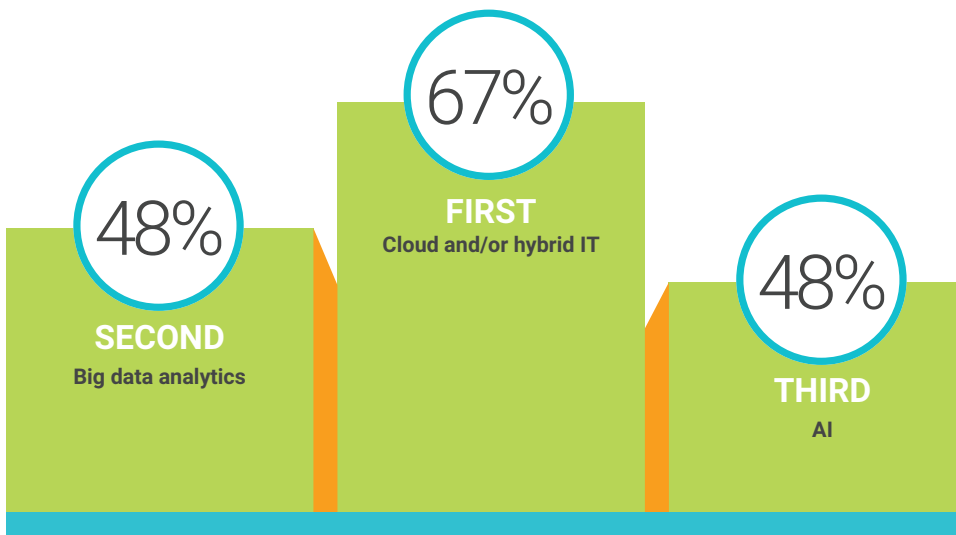


**67%**

**FIRST**
**Cloud and/or hybrid IT**

**48%**

**SECOND**
**Big data analytics**

**48%**

**THIRD**
**AI**

**Figure 6: The most important technologies**

Tech pros say the most important technologies for their career development (by weighted rank) are aligned with the top three technologies for organizations' transformation over the next three to five years:

1. Cloud and/or hybrid IT (67%)
2. Big data analytics (48%)
3. AI (48%).

When it comes to career development goals over the next three to five years, tech pros will look to prioritize (by weighted rank):
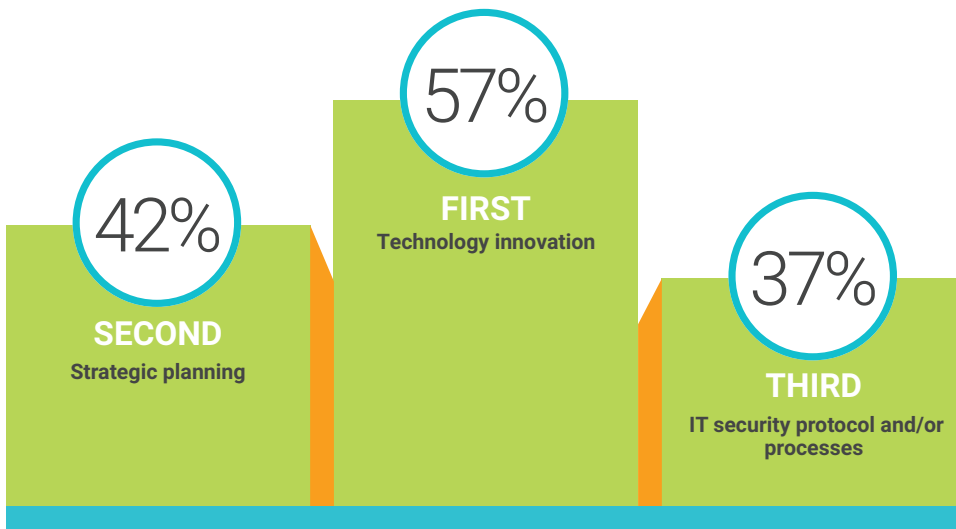


**42%**

**SECOND**
**Strategic planning**

**57%**

**FIRST**
**Technology innovation**

**37%**

**THIRD**
**IT security protocol and/or processes**

**Figure 7: The top three career development goals**

Management/leadership skills (people management) and data analytics and/or data science round out the top five career development goals for the next three to five years.

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# Skillset/Career Development Preferences and Barriers

**Tech pros have an appetite to prioritize career development on a weekly basis but are hindered by factors like time and cost.**

Nearly eight in 10 tech pros (79%) say their day-to-day IT tasks extend into time earmarked for career development, with 25% saying this always happens.
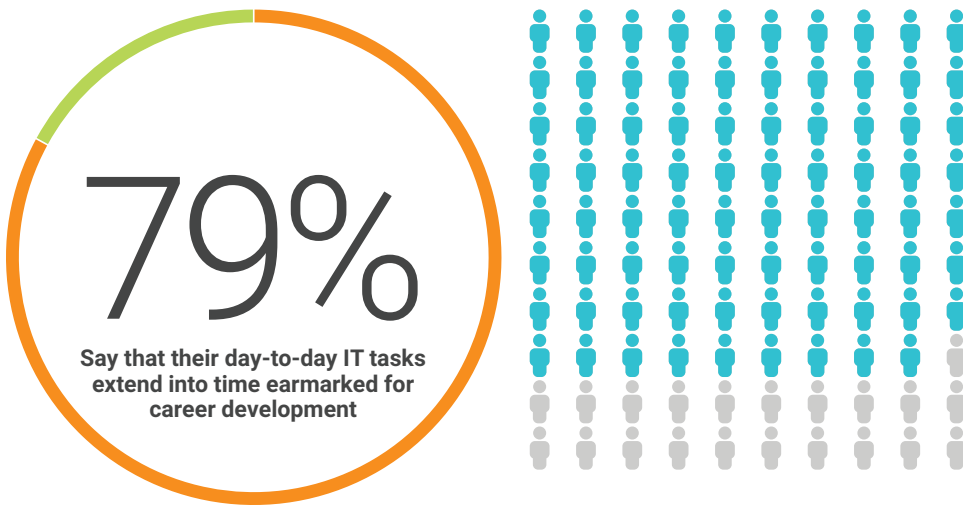


**79%**

**Say that their day-to-day IT tasks extend into time earmarked for career development**

**Figure 8: The day-to-day gets in the way**

This is alarming, considering tech pros enjoy technology skills training, with 53% finding it informative, 32% saying it's engaging and interactive, and 21% reporting it's not long enough.

Currently, tech pros engage in IT skills training and/or career development programs ranging from a few times a year (30%) to monthly (18%) and quarterly (15%); however, if there were no schedule or workload restrictions, most (32%) would prefer weekly training.

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Tech pros cite time and availability (50%) and cost (26%) as the biggest barriers affecting their current ability to participate in IT skills training and career development programs at the frequency they would like.
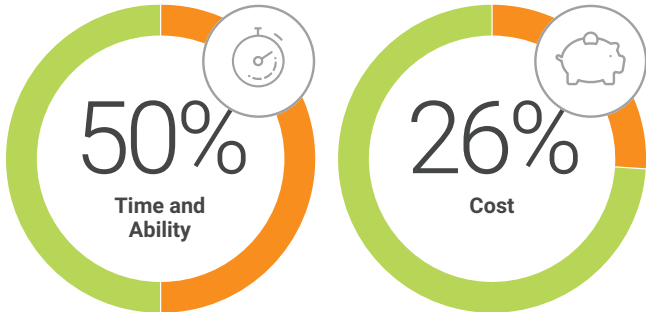
**50%**
Time and Ability

**26%**
Cost

**Figure 9: The biggest barriers**

When it comes to their primary sources for training, tech pros turn to:

**23%**
FIRST
Vendor training

**20%**
SECOND
Online communities/forums

**18%**
THIRD
Industry events
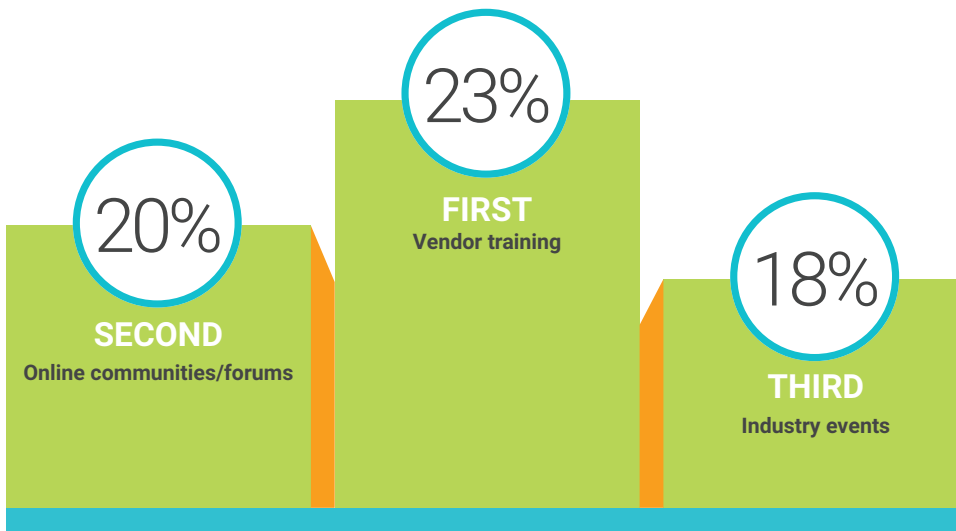
**Figure 10: Where tech pros turn for training**

However, the ideal delivery format for IT skills training according to tech pros is (by weighted rank):

1. In-person workshop/user conference (full-day)
2. Self-guided online course
3. Webinar

# Recommendations

## Prioritize Training in Emerging Tech

Considering the rate of change in modern IT environments, today's technology professionals are routinely faced with an overwhelming number of emerging technologies that should be experimented with, mastered, and adopted. However, upskilling in all the leading areas—from security and hybrid IT/cloud to data science and quantum computing—coupled with tech pros' reported time and resource constraints is a tall order. In the year ahead, tech pros must approach skills development strategically and should prioritize necessary training based on the needs of daily operations and IT environments, as well as skills that translate to career growth.

Tech pros should evaluate their current environments. What leading technology from last year has made its way into today's IT environment? The trajectory from emerging, buzzword-laden technology and its real-world implementation should act as a guide for which technologies are best to pursue trainings in. Similarly, consider the impact of postponing trainings in emerging technology. Many IT departments are laser-focused on reducing technical debt but lose sight of the impact to the department's knowledge base. When it comes time to implement new technology to create efficiencies, there's a steep learning curve that creates double the work.

Instead, tech pros should ask management to define the core competencies of the business as they relate to technology, and then monitor for gaps between importance and training. Is the organization buying new technology purely for testing and experimentation or will it be business-critical? When there's a gap between core competencies and skills in IT management, it becomes much easier to have a conversation about necessary training.

**\* Tech pros should ask management to define the core competencies of the business as they relate to technology**

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## Data Science 101

When it comes to cultivating skillsets over the next three to five years, data science and analytics emerged as a common denominator amongst tech pros, rounding out the top three for both day-to-day operations and higher-level career development. However, it's important to note that while data science is becoming more prevalent in IT environments, today's tech pros shouldn't expect to become data scientists overnight.

Instead, take a parenting approach to data science and learn to walk slowly: the idea being the slower an IT department moves towards an unfamiliar technology with different challenges, the more likely any potential issues will be resolved before the organization considers implementation. The same is true of tech pros and data science principles. It will be critical to develop a sense of data science techniques and how to think about them as more vendors contribute to industry-wide standards, but tech pros should avoid feeling as if they must mandate a platform, strategy, or framework for their organization this year.

Tech pros should also spend time familiarizing themselves with the key tenets of data analytics as part of their awareness of data science principles. Learn how to use Excel spreadsheets and pivot tables, and how to ask questions of the data available. In this way, tech pros will be more empowered in the year ahead to understand how data science will impact or benefit their companies, and ultimately allow the business as a whole to be more strategic.

**\* Tech pros should spend time familiarizing themselves with the key tenets of data analytics**

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# Create a Blueprint for Career Development

Despite tech professionals' best intentions, upskilling in new technologies is all too often put on the backburner in favor of urgent work-related issues or due to resource constraints (both time and money). At the same time, it may feel as though their current IT environment doesn't justify an investment in new skillsets.

But tech pros on the fence about training should consider this: the less proactive the IT environment, the more proactive tech pros should be when it comes to personal development. To truly capitalize on the opportunities presented by emerging technologies—and to ultimately remain successful five years from now—tech pros must commit to the mindset of a lifelong learner by taking a more disciplined, proactive approach to skills and career development.

Start small and set aside manageable, realistic amounts of time to invest in personal development. Learning can happen in short bursts of just five minutes; and five minutes twice a day adds up fast. Tech pros should also take advantage of the variety of avenues available when it comes to trainings—from free, vendor-sponsored programs to convenient online courses or even the library—to further reduce barriers to skill development. By investing in learning as a lifestyle, common challenges such as finding time to sit down and complete a training module become easier to overcome.

Beyond training and career development at the individual level, tech pros should also use the findings and insights from the 2019 IT Trends Report to consider how best to up-level the skills and technical competency of their entire IT team. In the age of greater team collaboration and cross-functionality, multiple careers will need to be developed simultaneously.

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**Start small and set aside manageable, realistic amounts of time to invest in personal development**

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# Learn the Language of Business

As technology becomes increasingly inseparable from business success, the technology department is more important than ever. There's often a misperception amongst tech pros that more work can be accomplished on a command line rather than in PowerPoint, but the opposite is actually true: tech pros who can learn the language of business (and it is a language) will be able to successfully influence technology decisions and up-level their resumes.

Find ways to better understand what the business cares about—typically growing revenue, reducing cost, and removing risk—and how technology can positively affect those three performance indicators. A new monitoring solution, for example, helped the business increase revenue by reducing downtime. Alternatively, if a tech professional feels their organization is making decisions based on risk aversion, understanding the language of business can empower them to quantify the other side of that coin: risk of failure. What is the potential impact of a poor or postponed technology decision to daily operations—downtime, poor user experience, greater vulnerabilities (and risk)? The ability to translate the technological impact of a decision to business objectives will positively influence future innovation and decision-making.

As in past years, it's important for tech pros to pursue upskilling in these types of soft skills that will round out the necessary skillset of tomorrow. IT often gets asked to provide training, but they might need the training to provide training upfront.

Tech pros should look for someone who can help teach them how to translate traditional IT jargon, whether it's a technologist who has experience in business, or a business manager who can share insights and recommendations. This is especially key for any tech pros with aspirations to elevate their career beyond day-to-day management and potentially pursue positions that blend technology and business—like a Chief Digital Officer.

\*
**IT often gets asked to provide training, but they might need the training to provide training upfront**

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## Collaboration Is Key

Building on the results of the SolarWinds IT Trends Report 2018: The Intersection of Hype and Performance, which revealed tech professionals' struggle to overcome the barrier of inadequate training, and echoing the convergence of IT roles from several years ago (de-siloing roles like SysAdmins, NetAdmins, DBAs, etc.), this year's survey continues to suggest that the lines between managed services—either by cloud providers or outsourced—and tools that were formerly considered cloud DevOps and traditional IT tools, respectively, are becoming increasingly blurred. As a result, it's more important than ever for tech pros to embrace collaboration and feel empowered to work with other teams as needed. This holds true when it comes to knowledge sharing, as well. A portion of tech pros around the world prefer to receive trainings primarily from colleagues, and so it's important to remember that knowledge gained could and should be shared amongst peers for the greater good.

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# Study Overview: Respondent Demographics

966 technology practitioners, managers and directors WORLDWIDE from public-and private-sector small, mid-size and enterprise organisations participated in a December 2018 online study.
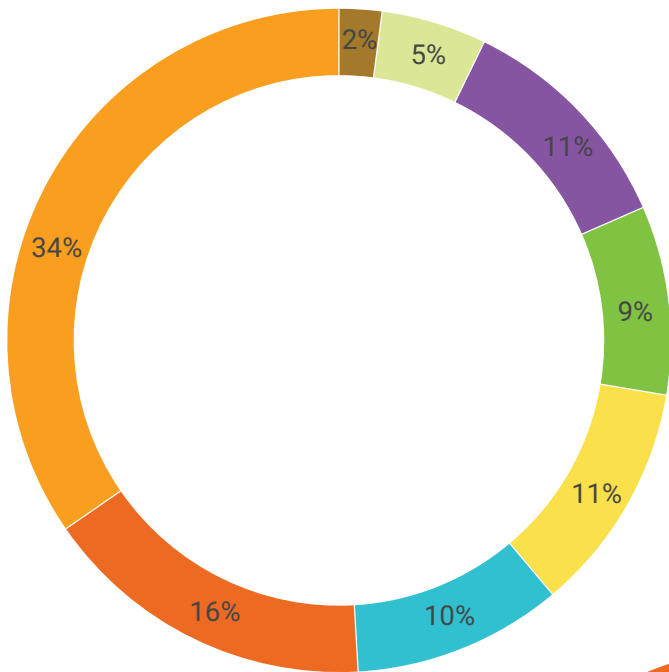
**Figure 11: Organisation Size (Number of Employees)**

- 25-49 FTEs
- 50-99 FTEs
- 100-249 FTEs
- 250-499 FTEs
- 500-999 FTEs
- 1000-1499 FTEs
- 1500-4999 FTEs
- 5000+ FTEs
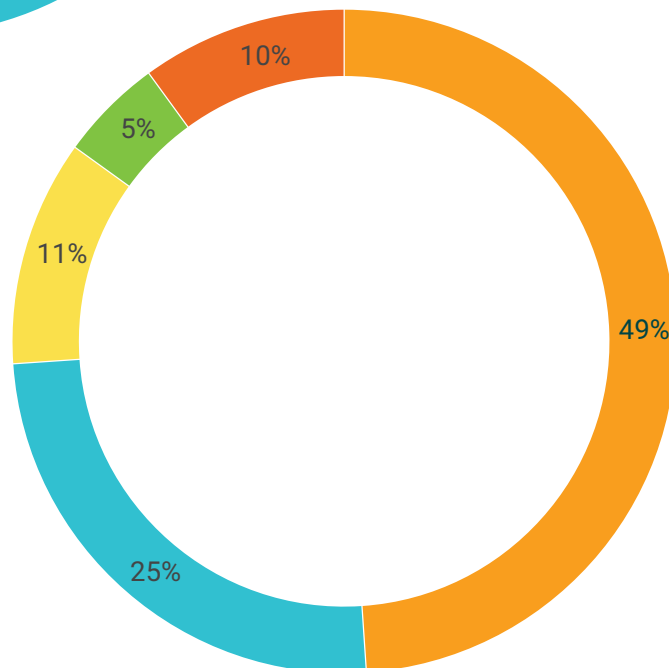
**Figure 12: Tech Pro's Role**

- Practitioner
- Manager
- Director
- Tech Consultant
- Other Tech-related

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# Study Overview: Technology Skills & Training

Tech Pro Confidence in Having ALL the Necessary Skills
to Successfully Manage IT Environment for NEXT 3-5 Years
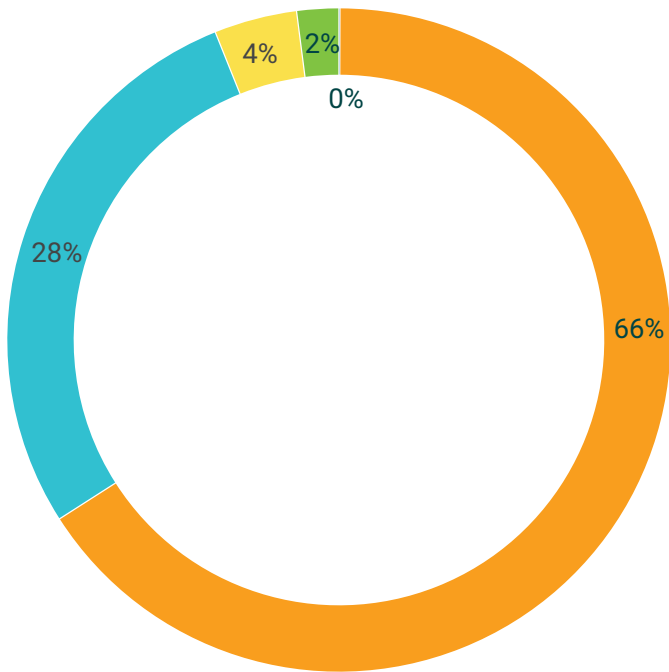


**Figure 13: Tech Pro's Confidence (Overall)**

- Completely Confident
- Somewhat Confident
- Somewhat Unconfident
- Completely Unconfident
- Not sure
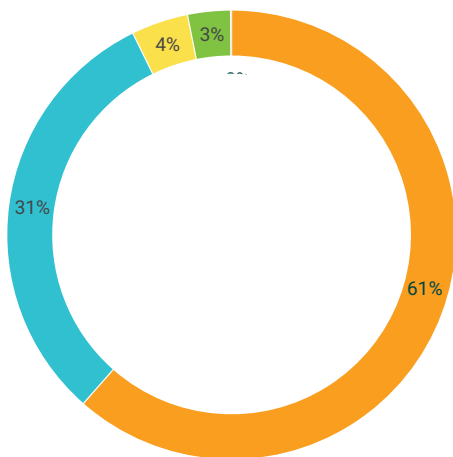


**Figure 14: Tech Pro's Confidence
by Organisation size (Small)**
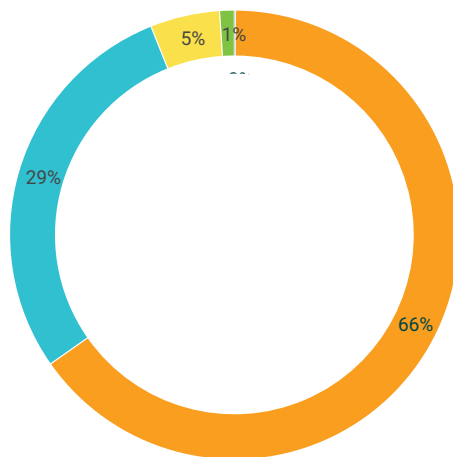


**Figure 15: Tech Pro's Confidence
by Organisation size (Mid-Sized)**
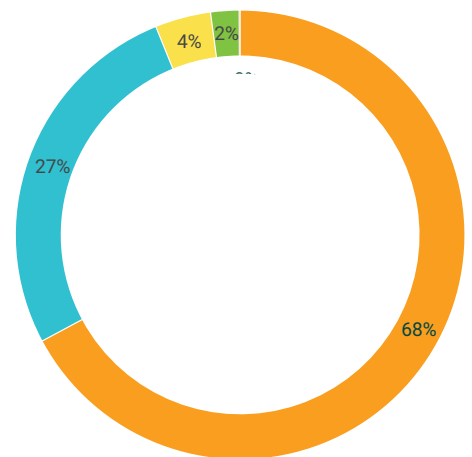


**Figure 16: Tech Pro's Confidence
by Organisation size (Enterprise)**

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# Study Overview: Technology Skills & Training Needed

**We asked:**

What are the FIVE most important technologies needed for your organisation's technological transformation over the NEXT 3-5 years?

**Figure 17: Most Important Technologies for Organisation's Technological Transformation over NEXT 3-5 Years**



Legend: Overall, Small, Mid-Sized, Enterprise
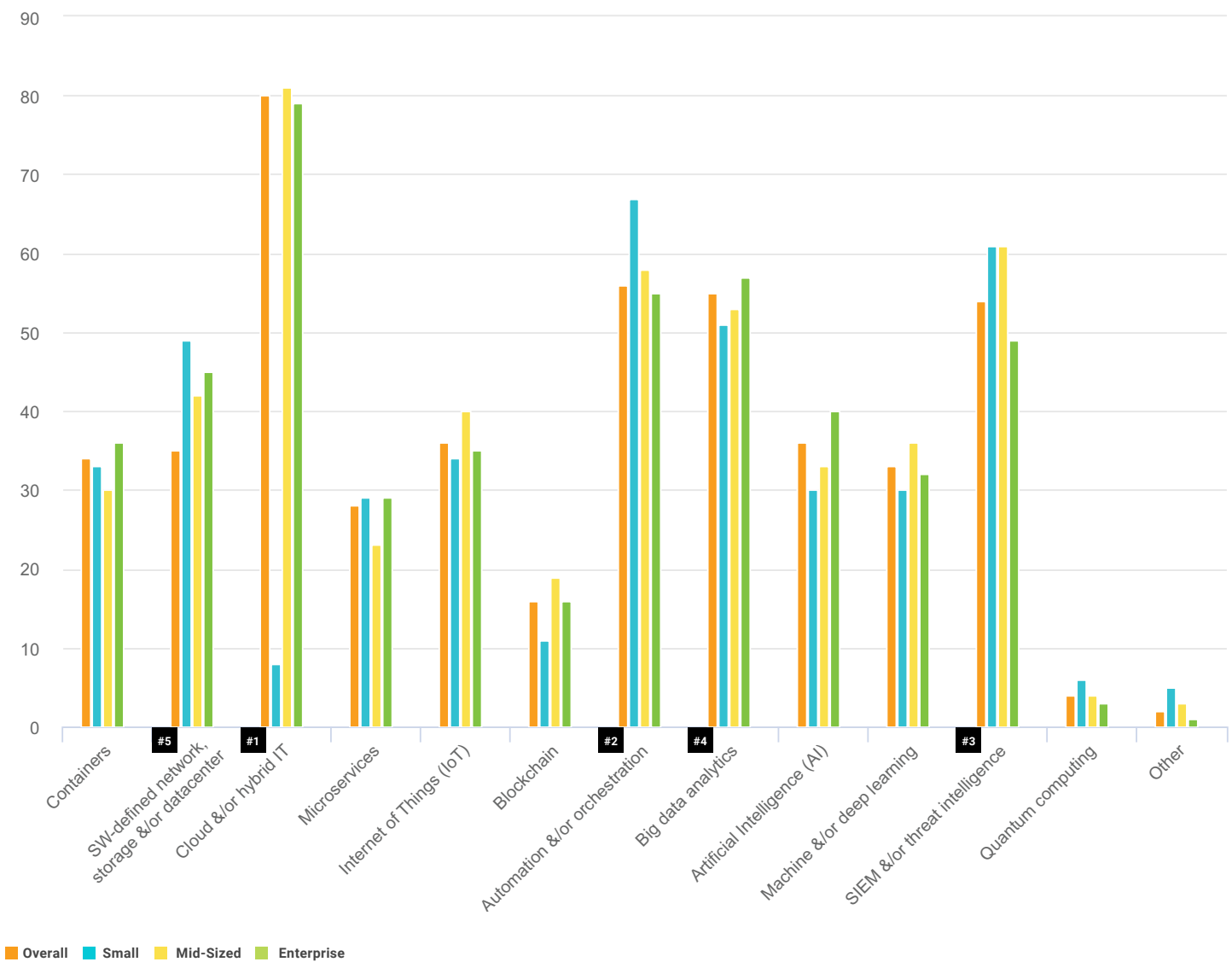
# Study Overview: Technology Skills & Training Needed

**We asked:**

Based on your current IT skillset, which of the following technologies
do you feel unequipped to successfully implement and/or manage?

**Figure 18: Technologies Tech Pros Feel UNEQUIPPED to Successfully Implement/Manage with Current Skillset**



Legend: ■ Overall ■ Small ■ Mid-Sized ■ Enterprise

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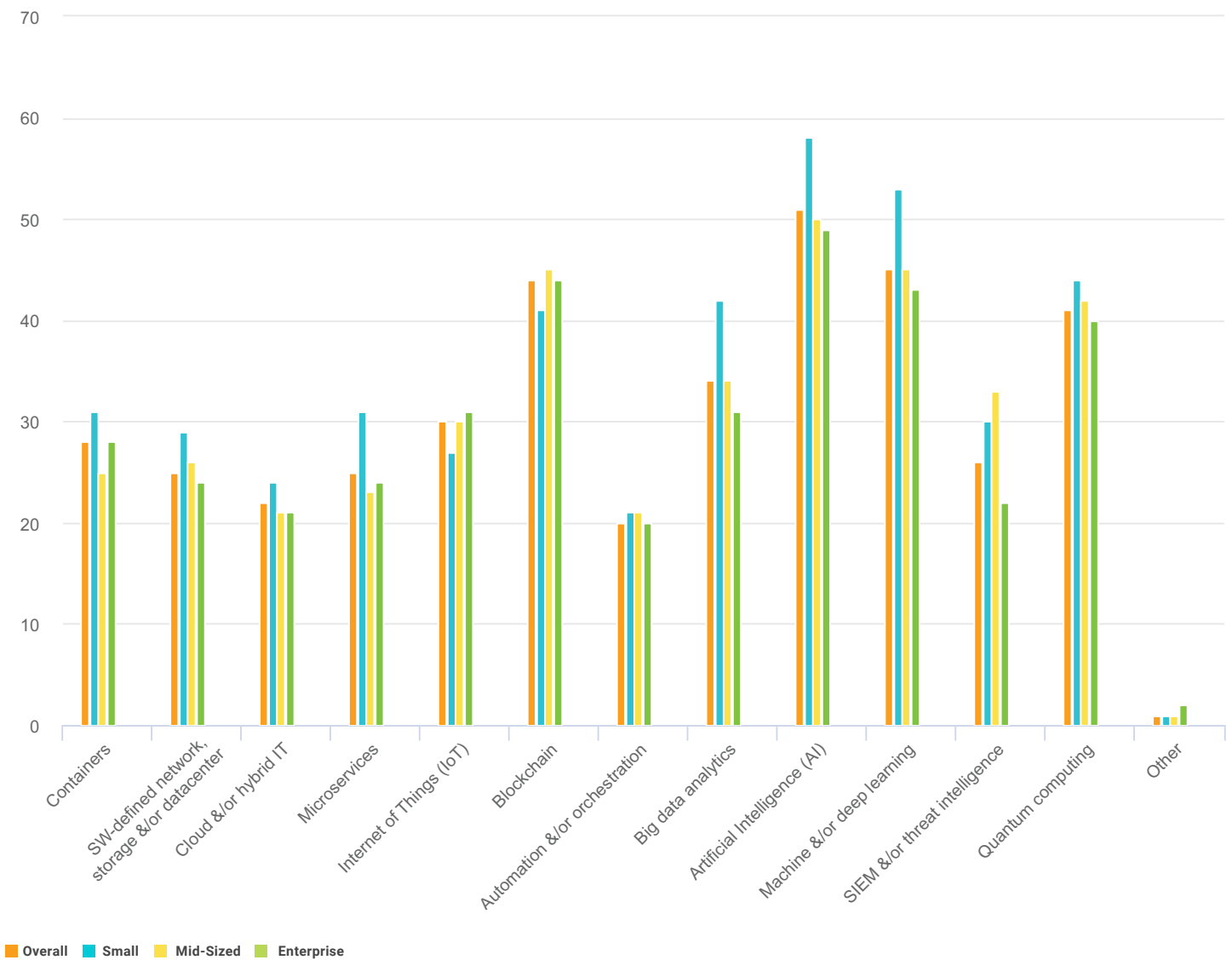
# Study Overview: Technology Skills & Training Needed

**We asked:**

Which of the following skills have you worked to develop over the past 12 months in order to better manage your day-to-day IT environment and its needed disciplines (such as IT Ops, DevOps, SecOps &/or outsourced services (MSP/MSSPs))?

**Figure 19: Skills Tech Pros Have Worked to Develop over Past 12 Months to Better Manage Daily Operations**



■ **Overall**　■ **Small**　■ **Mid-Sized**　■ **Enterprise**
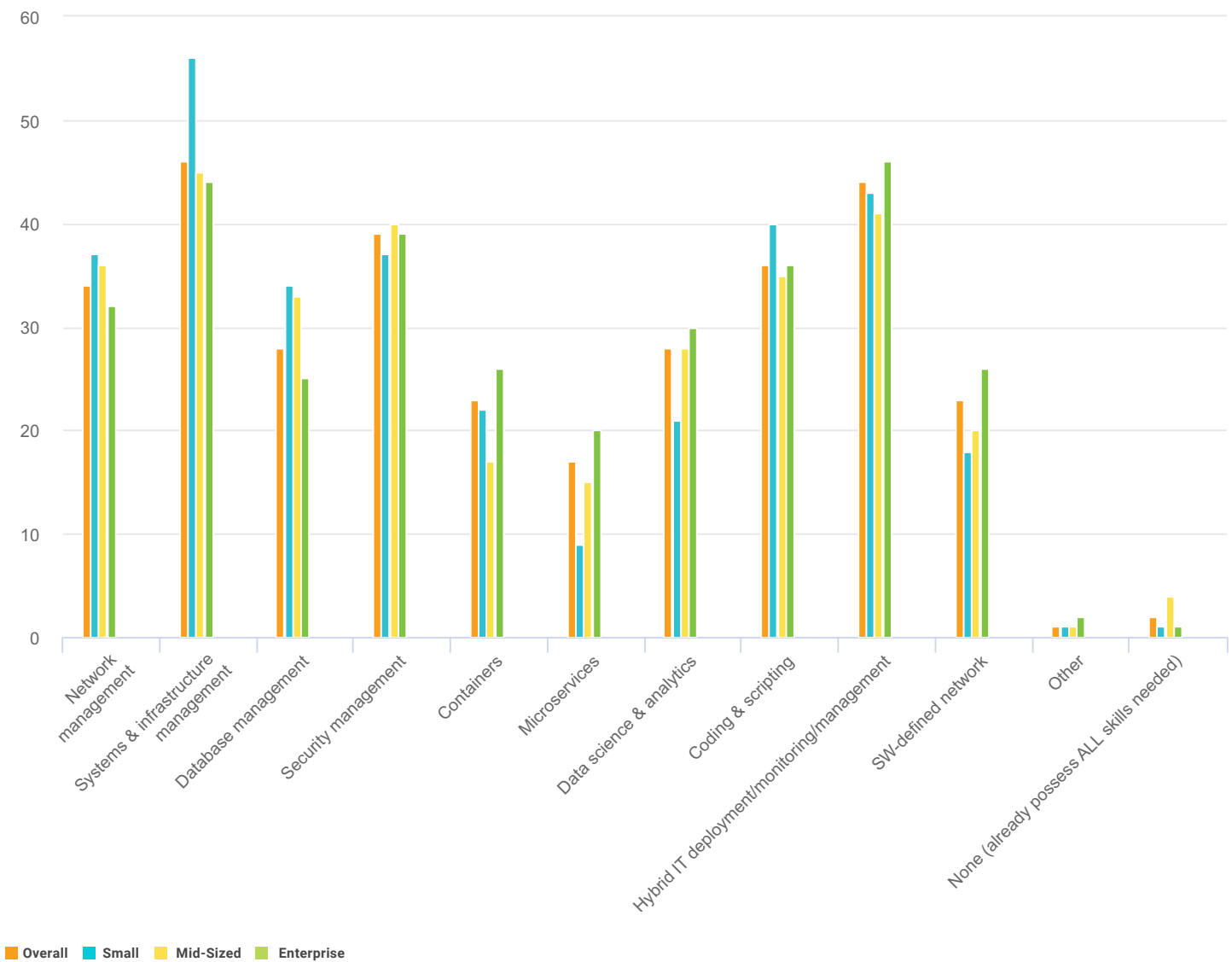
# Study Overview: Technology Skills & Training Needed

**We asked:**

Which of the following skills will you need to develop over the next 3-5 years in order to better manage your day-to-day IT environment and its needed disciplines (such as IT Ops, DevOps, SecOps &/or outsourced services (MSP/MSSPs))?

**Figure 20: Skills Tech Pros Need to Develop over Next 3-5 Years to Better Manage Daily Operations**



Legend: ■ Overall ■ Small ■ Mid-Sized ■ Enterprise

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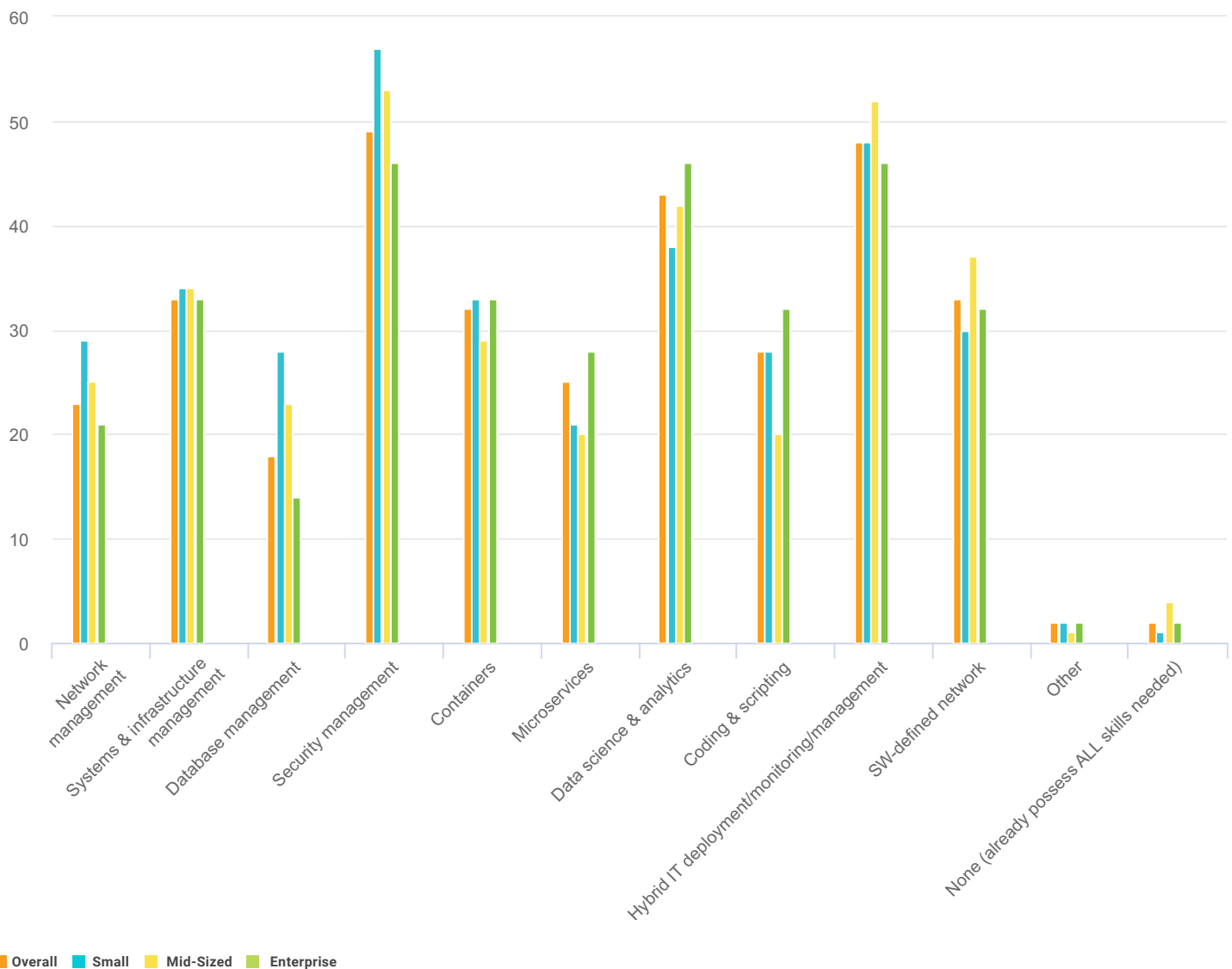
# Study Overview: Technology Skills & Training Needed

**We asked:**

What are your TOP THREE career development goals over the NEXT 3-5 years?

**Figure 21: Top Career Development Goals for Tech Pros over NEXT 3-5 Years**
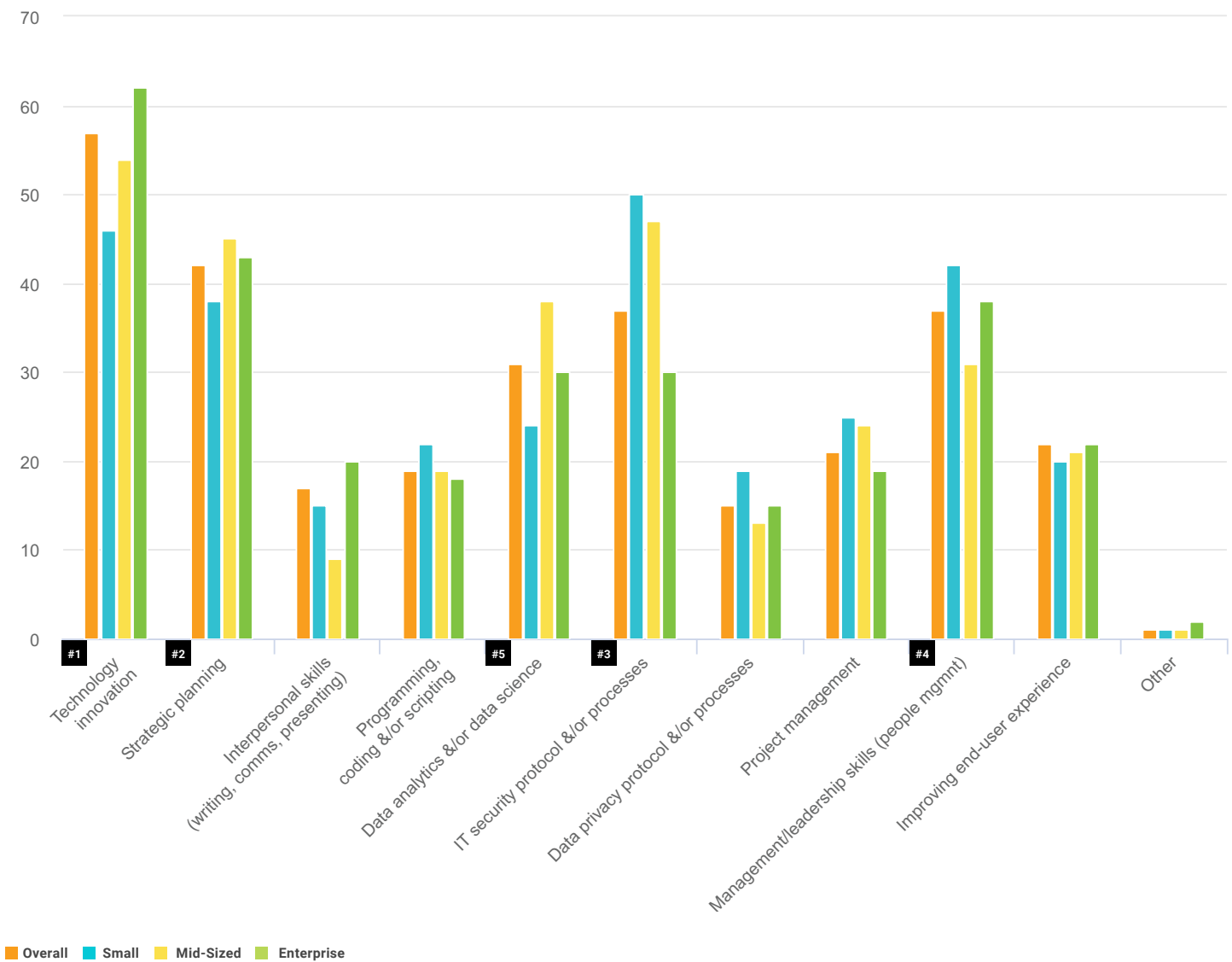


Legend: ■ Overall  ■ Small  ■ Mid-Sized  ■ Enterprise

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# Study Overview: Technology Skills & Training Needed

**We asked:**

What are the FIVE most important technologies needed for your career development/advancement over the NEXT 3-5 years?

**Figure 22: Most Important Technologies Needed for Tech Pro Career Development/Advancement over NEXT 3-5 Years**



Legend: Overall | Small | Mid-Sized | Enterprise

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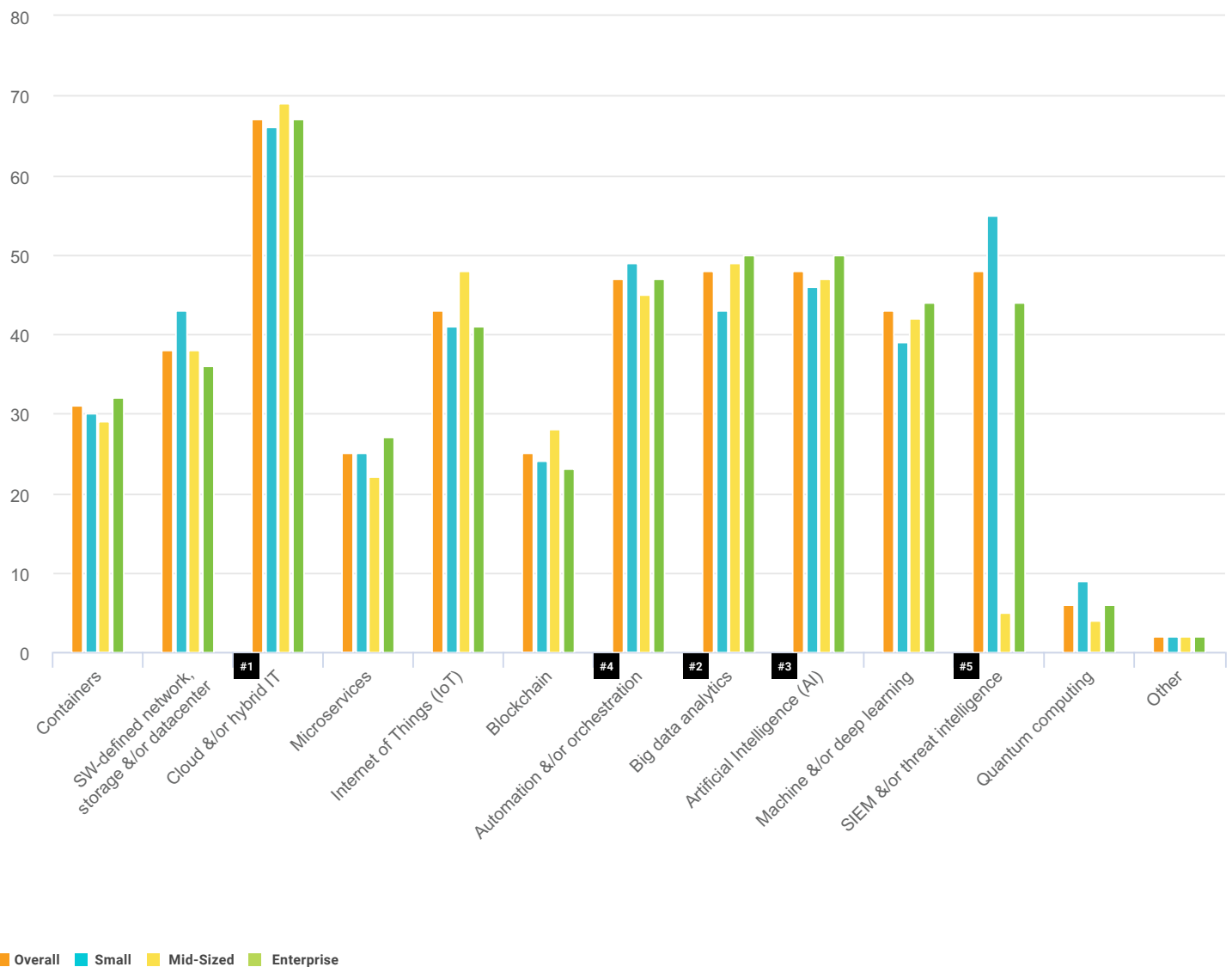
# Study Overview: Technology Skills & Training Needed

**We asked:**

When it comes to learning about emerging technologies,
what is your PRIMARY source of IT skills training/career development?

**Figure 23: Tech Pros' Primary Source of IT Skills Training/Career Development**
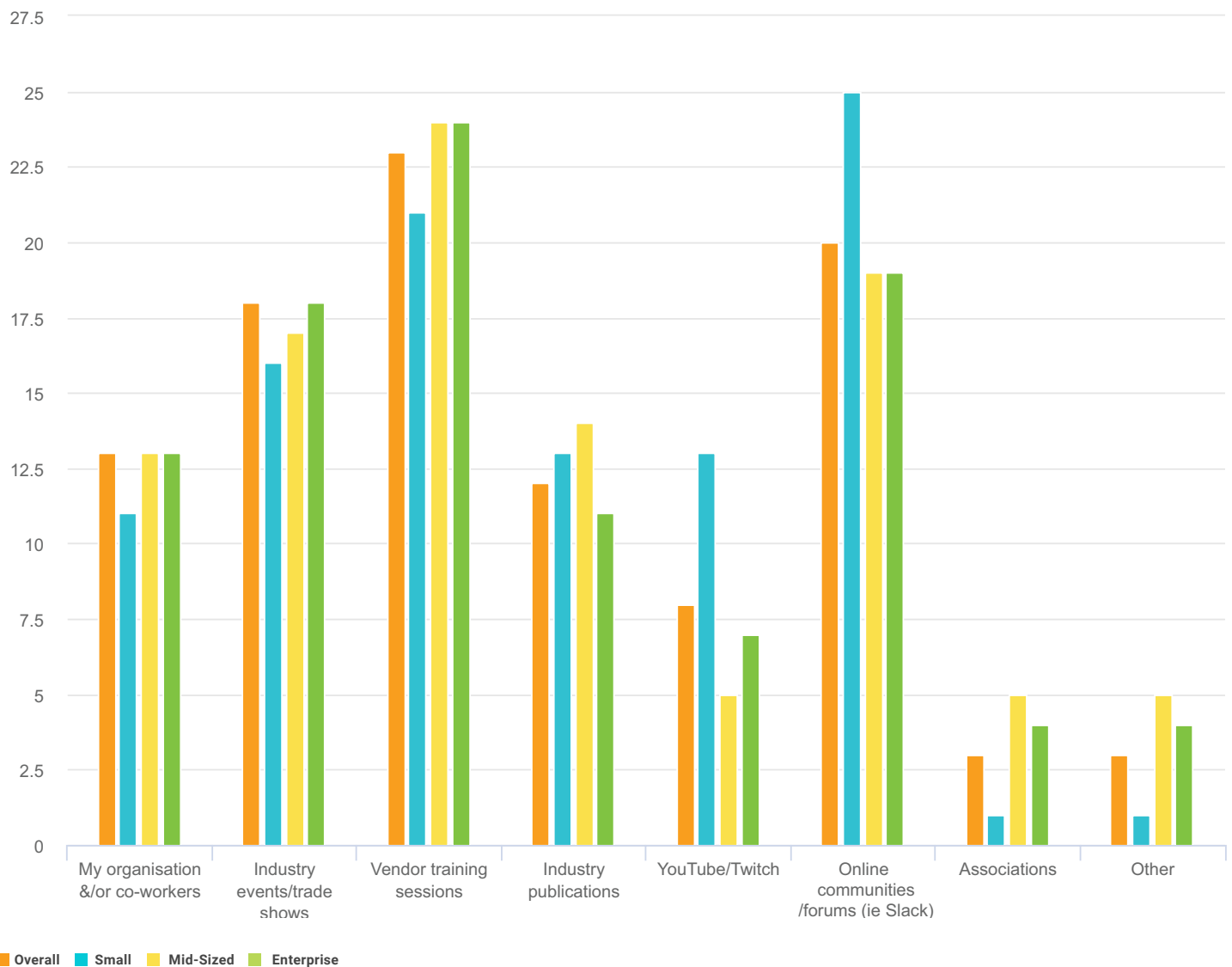


Legend: Overall · Small · Mid-Sized · Enterprise

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# Study Overview: Technology Skills & Training Needed

**We asked:**

Overall, how would you describe the IT skills training/career development you have participated in from the primary source you just mentioned?

**Figure 24: Tech Pros' Impression after Participating in IT Skills Training/Career Development at Primary Source**
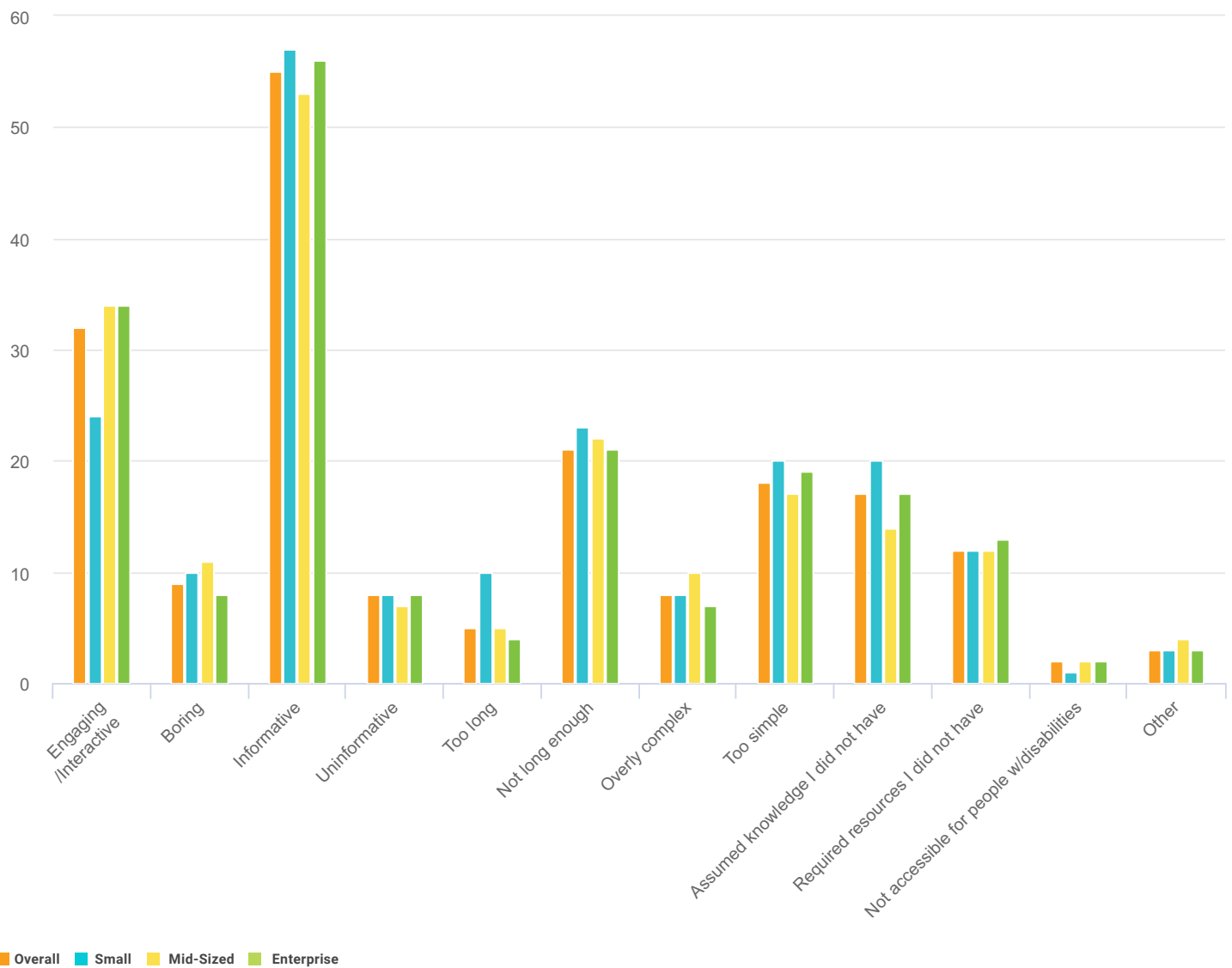


Legend: Overall, Small, Mid-Sized, Enterprise

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# Study Overview: Technology Skills & Training Needed

**We asked:**

Overall, how would you describe the IT skills training/career development you have participated in from the primary source you just mentioned?

**Figure 24a: Tech Pros' Impression by Primary Source (Top four) Vendor Training Sessions**
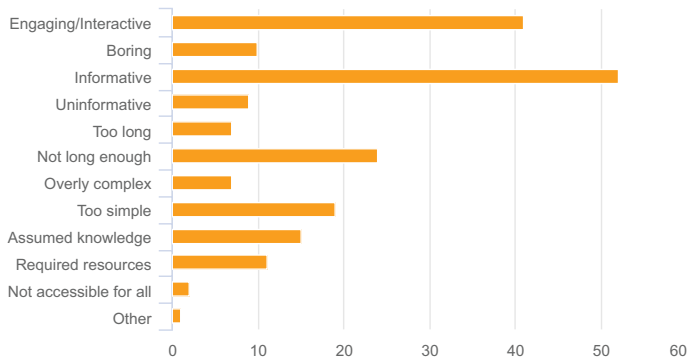


**Figure 24b: Tech Pros' Impression by Primary Source (Top four) Industry Events/Trade Shows**
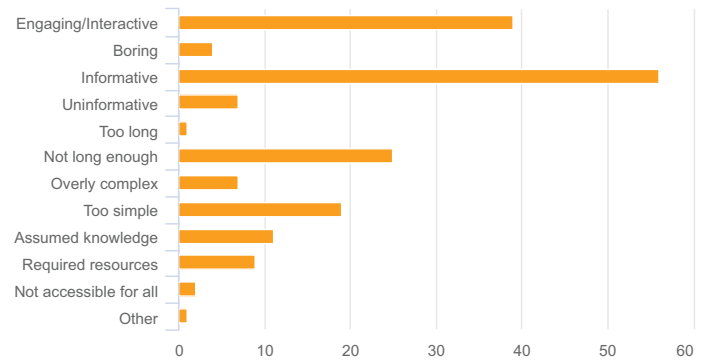


**Figure 24c: Tech Pros' Impression by Primary Source (Top four) Online Communities/Forums (ie Slack)**
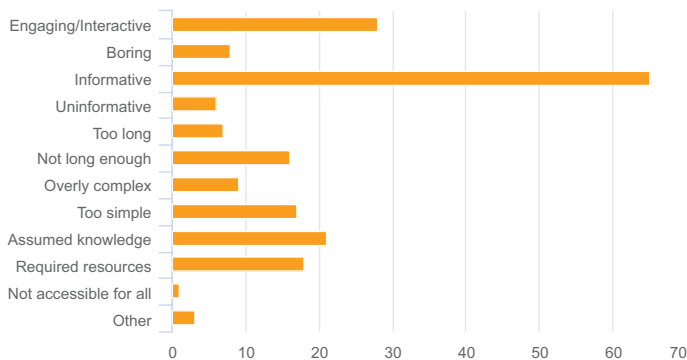


**Figure 24d: Tech Pros' Impression by Primary Source (Top four) My Org &/or Co-Workers**

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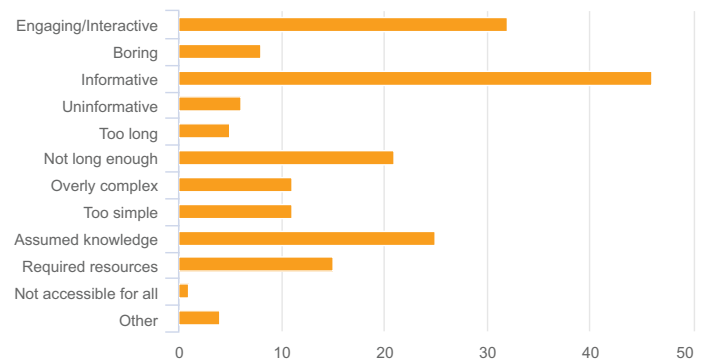
# Study Overview: Technology Skills & Training Needed

**We asked:**

How often do your day-to-day IT management tasks extend into
the time you set aside for pursuing your career development goals?

**Figure 25: Frequency that Tech Pros' Day-to-Day IT Tasks Extend into Time Earmarked for Career Development**
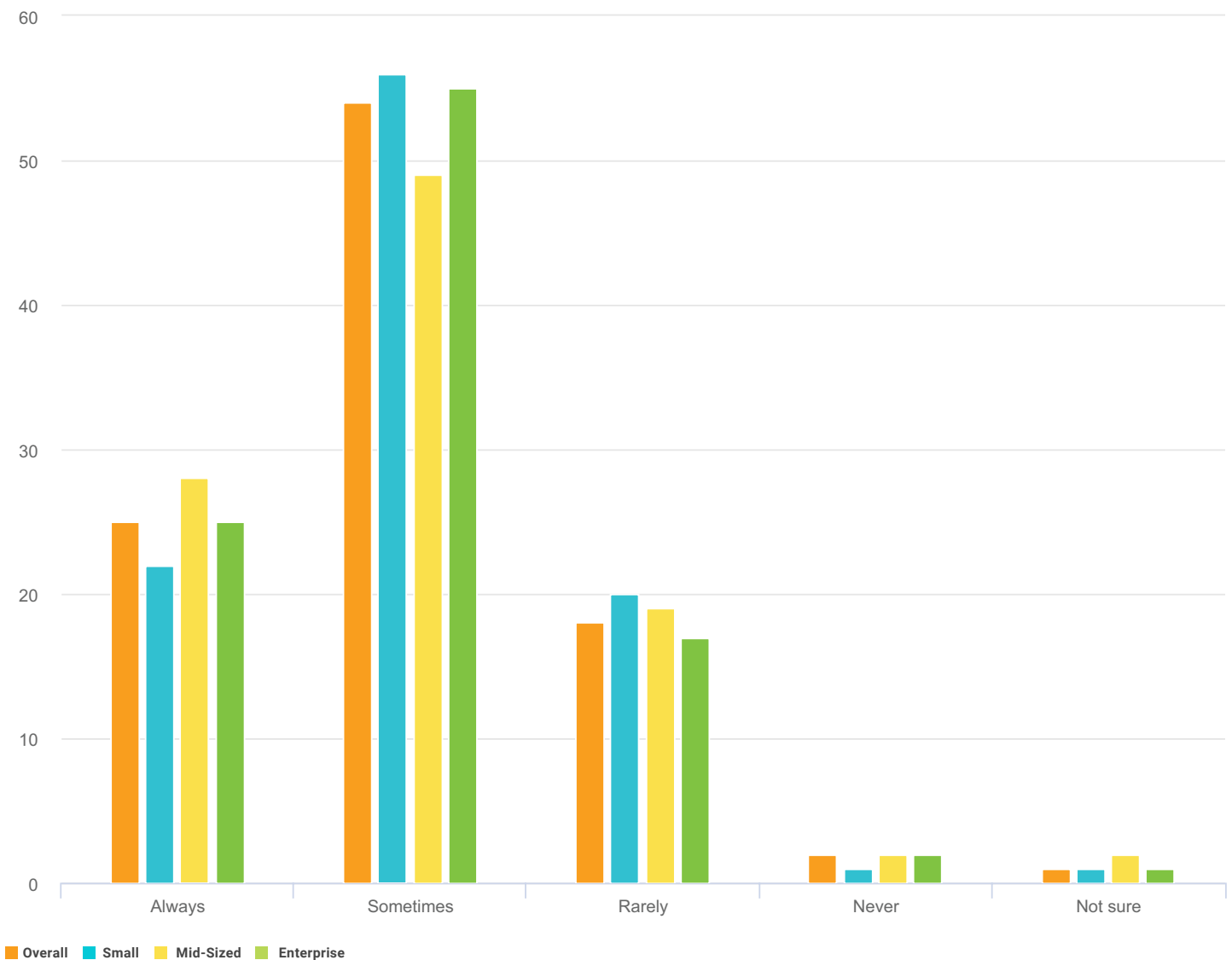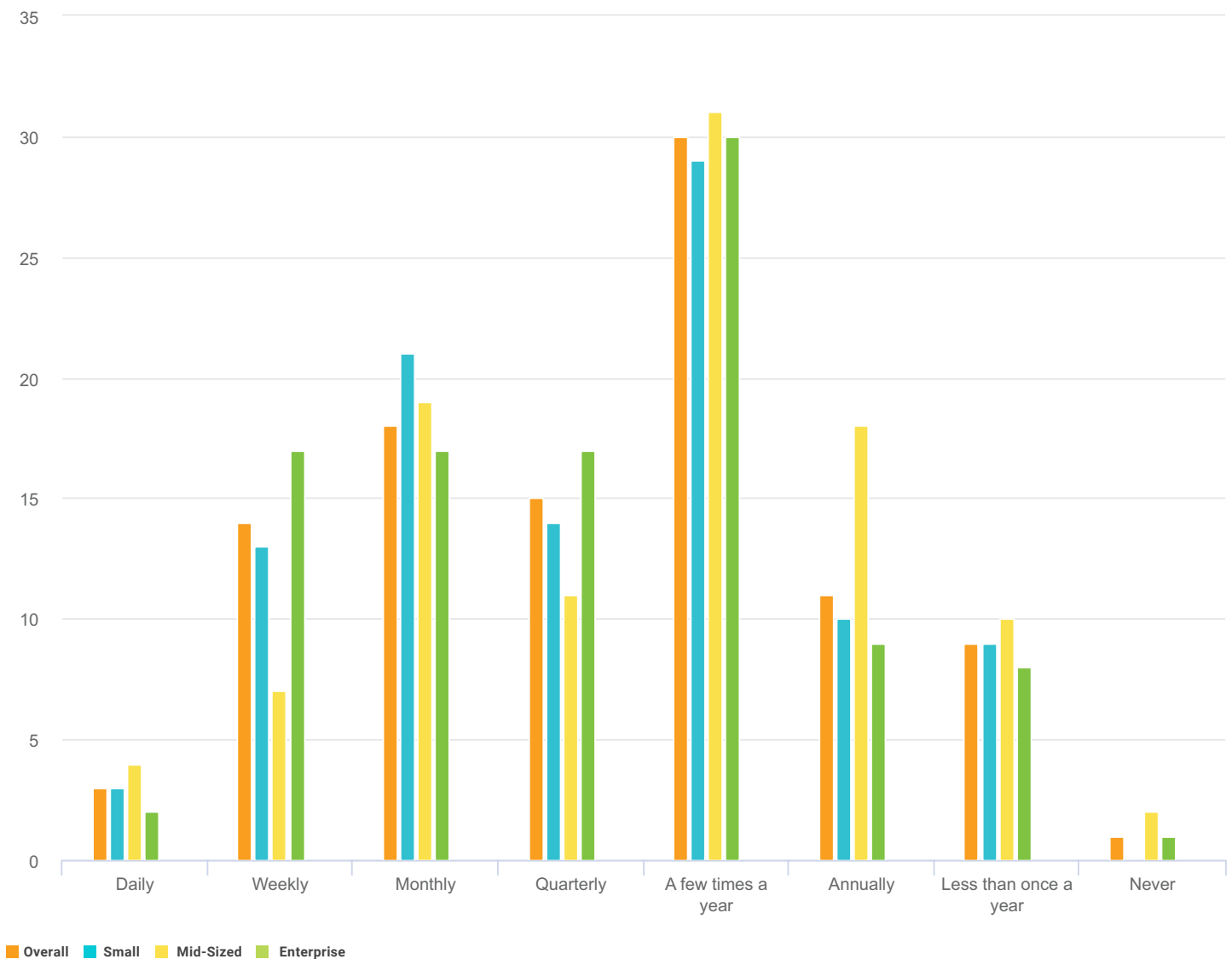
# Study Overview: Technology Skills & Training Needed

**We asked:**

How often do you currently engage in IT skills training and/or career development programs?

**Figure 26: Frequency that Tech Pros CURRENTLY Engage in IT Skills Training/Career Development Programs**



Legend: Overall, Small, Mid-Sized, Enterprise

# Study Overview: Technology Skills & Training Needed

**We asked:**

IF you could set your own schedule and workload with no restrictions,

how often would you commit to IT skills training and/or career development programs?

**Figure 27: Frequency that Tech Pros WOULD COMMIT to IT Skills Training/Career Development Programs Given No Schedule/Workload Restrictions**



Overall  Small  Mid-Sized  Enterprise

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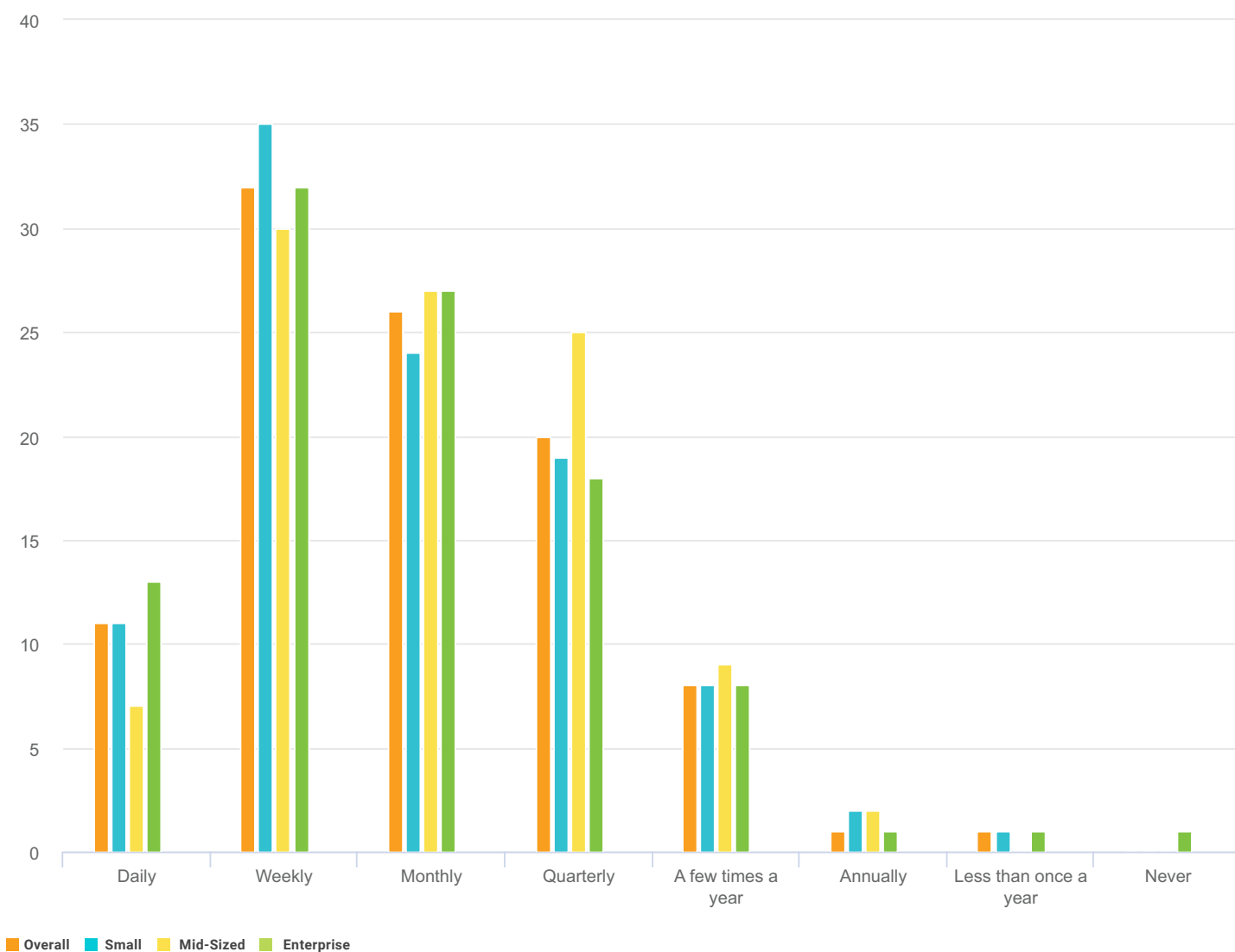
# Study Overview: Technology Skills & Training Needed

**We asked:**

What is the biggest barrier to your current ability to participate in IT skills training and/or career development programs?

**Figure 28: Tech Pros' Biggest Barrier to Current Ability to Participate in IT Skills Training/Career Development**



Legend: ■ Overall  ■ Small  ■ Mid-Sized  ■ Enterprise

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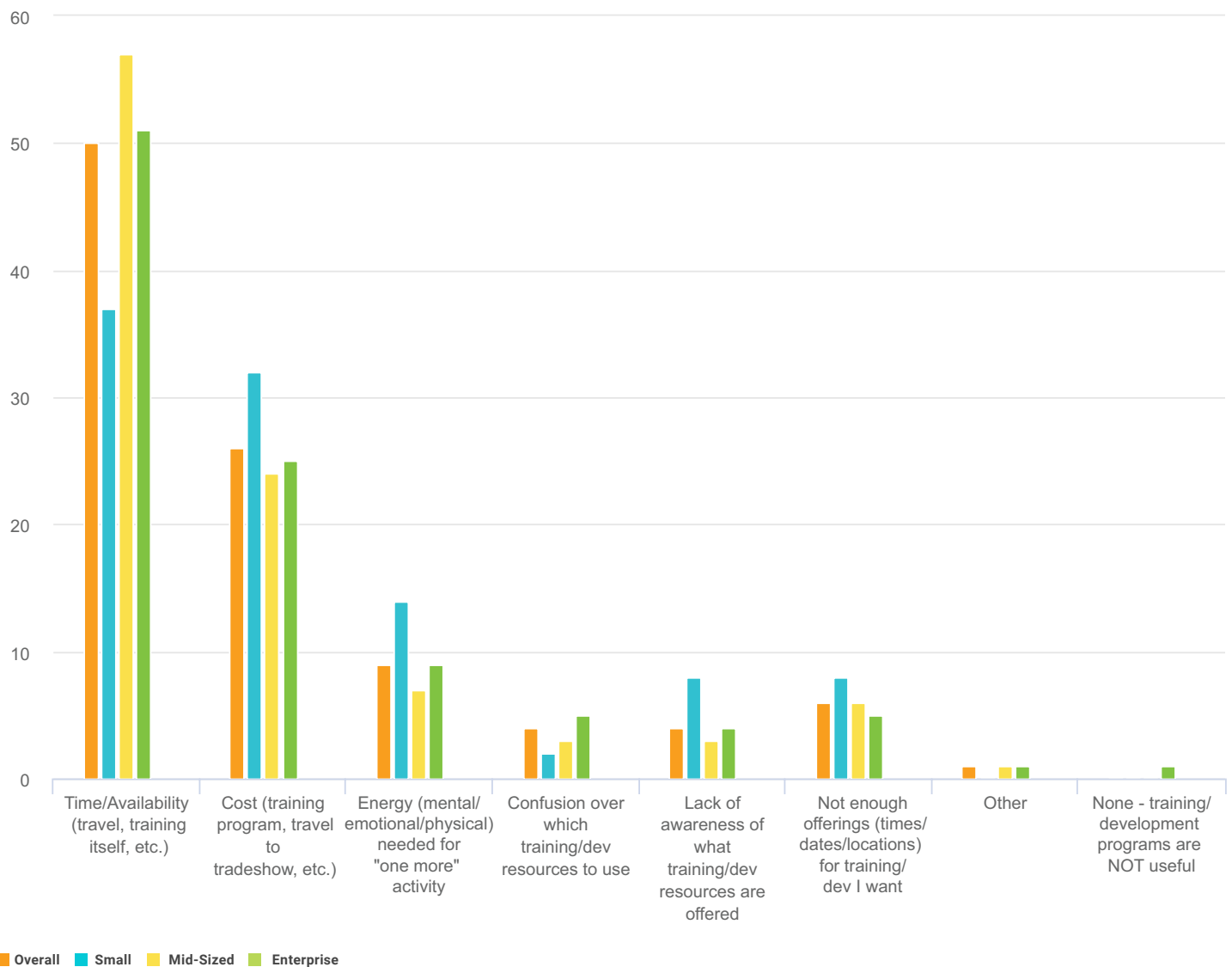
# Study Overview: Technology Skills & Training Needed

**We asked:**

In order of preference, what is your ideal delivery format for IT skills training materials pertaining to IT Ops, SecOps, DevOps, and outsourcing/managed services?

**Figure 29: Tech Pros' Ideal Delivery Format for IT Skills Training Materials for IT Ops, SecOps, DevOps & MSP/MSSPs (OVERALL)**



Ranked #1    Ranked #2    Ranked #3    Ranked #4    Ranked #5
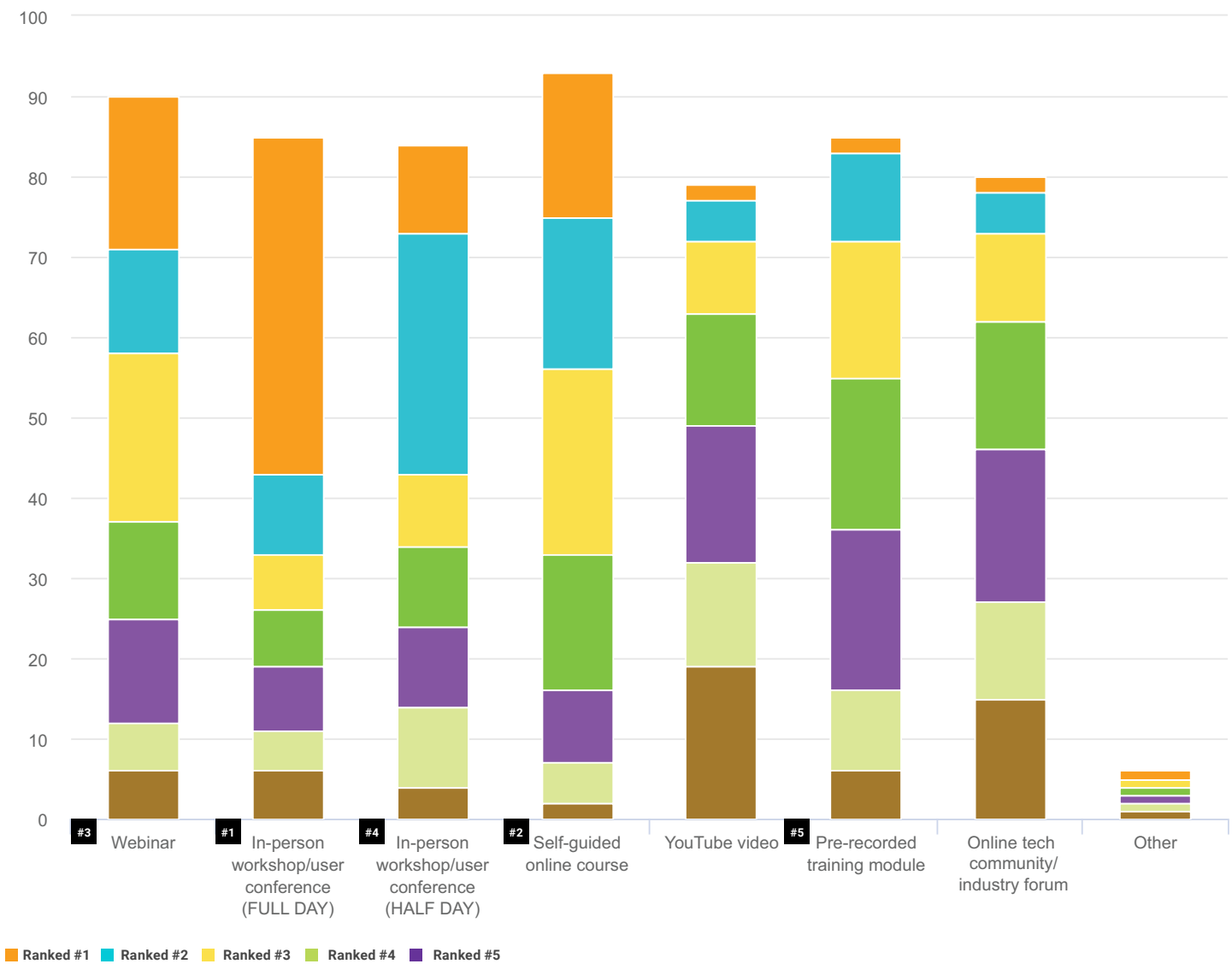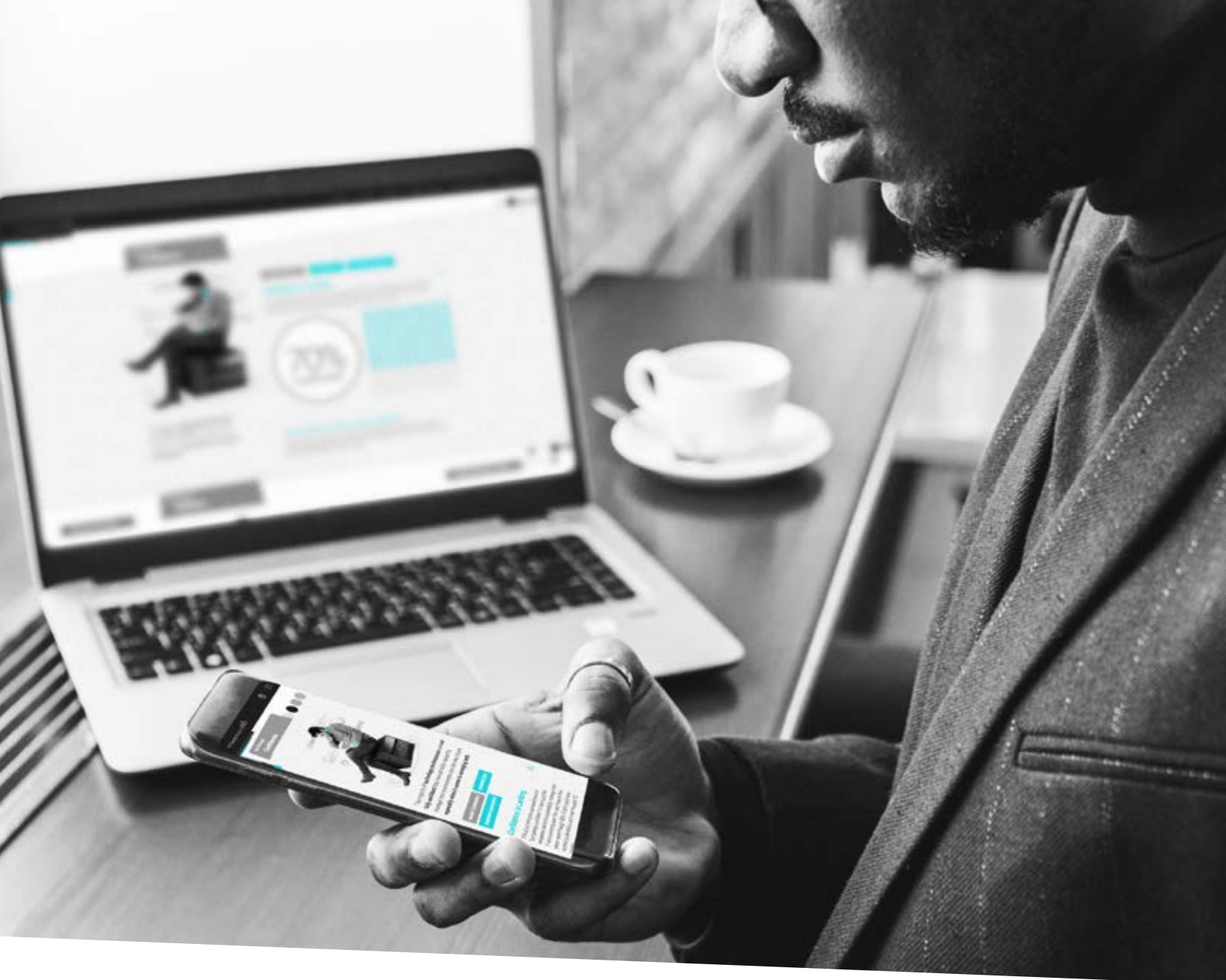
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