

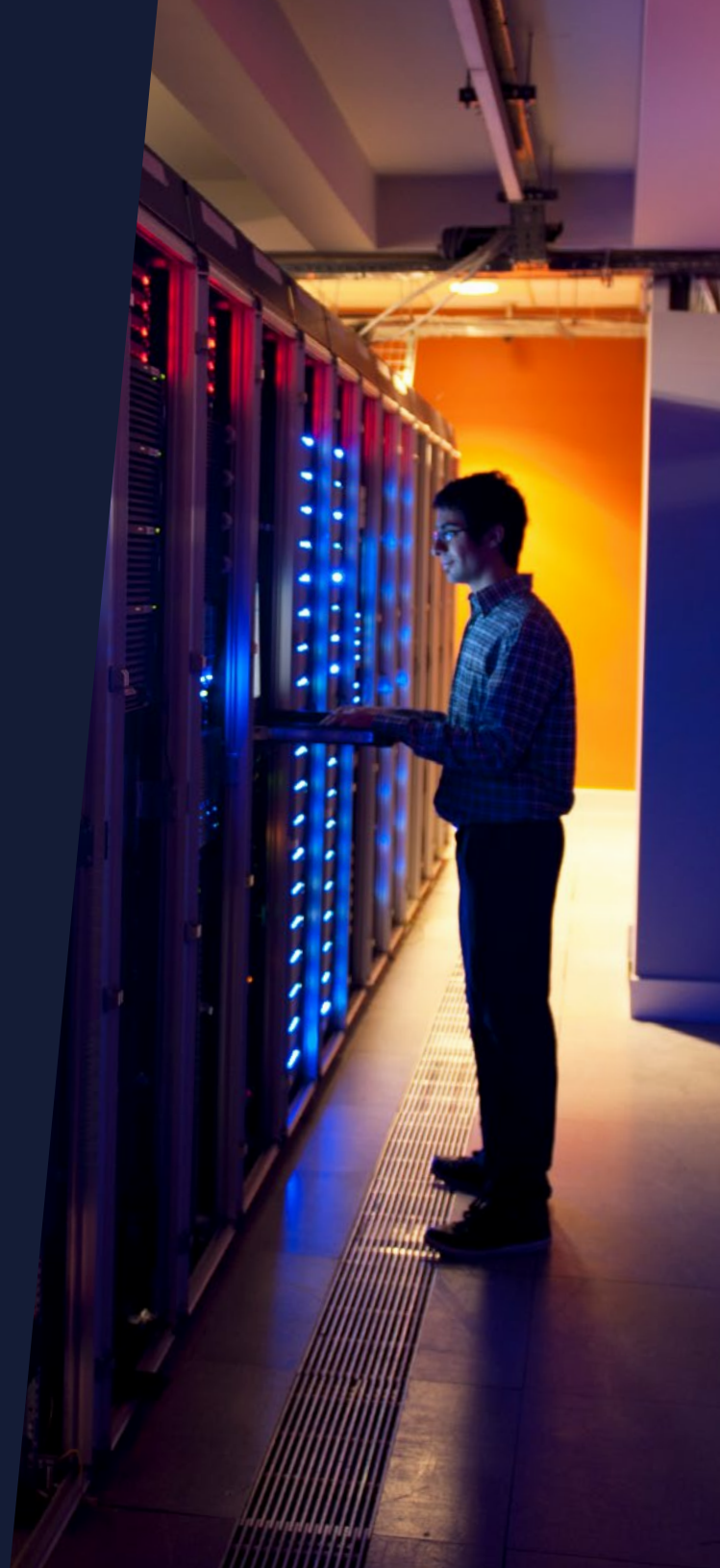
GLOBAL KNOWLEDGE

2021

IT SKILLS AND SALARY REPORT

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INTRODUCTION

Welcome to Skillsoft's Global Knowledge 2021 IT Skills and Salary Report.

Conducted annually for the past 15 years, this comprehensive report is one of the largest studies of technology professionals around the globe. It focuses on the most in-demand skills; current salaries and other compensation; training, leadership development, and certifications; and overall career satisfaction. More than 9,300 IT professionals participated, including both staff and decision-makers (self-identified, based on whether they manage employees and their level of authority). We've published findings broken down by region: North America; Latin America; Europe, Middle East, and Africa (EMEA); and Asia-Pacific, as well as examined worldwide trends.

LOOKING BACK AT 2021

This year, we were particularly interested in uncovering the state — and state of mind — of tech professionals. As the world responded to and began recovering from unprecedented disruption, organizations everywhere felt the effects of three significant shifts:

- A global health crisis
- Widespread social justice movements
- Worldwide economic uncertainty

Businesses around the globe, across every industry, faced unparalleled challenges. Workforces went remote. Reskilling and upskilling became paramount to fill skills gaps and keep existing teams employed, even if it meant training them for new or evolving roles.

Access to and encouragement of learning was critical as employees and employers alike reacted in real-time. Consumption of learning increased exponentially, and new topics emerged as not just popular, but mission-critical. For example, we saw application-specific courses like *Microsoft Teams: Communicating With the App* draw nearly 200 times more learners, and power skill-centered courses like *Developing Emotional Intelligence* draw nearly 300 times more learners.



In many ways, the IT world was at the center of all the change, especially as every industry was forced to accelerate digital transformation. While positive gains were felt during this time — for example, 52% of our survey respondents reported pay increases — many IT professionals experienced stress, lack of training, and organizations that didn't support them. In fact, the three issues were interrelated. Both IT staff and decision-makers expressed a feeling of added pressure due to a lack of training and support.

Another source of stress was the skills gap. Working around a skills gap in a particular technology, framework, or best practice proved to be counterproductive and demotivating. Projects were derailed and many organizations were unable to fully realize a return on their tech investments. In our survey, IT decision-makers confirmed these challenges. More than half told us that hiring is somewhat difficult or extremely difficult, and reported not being able to fill two to four positions in the past 12 months.

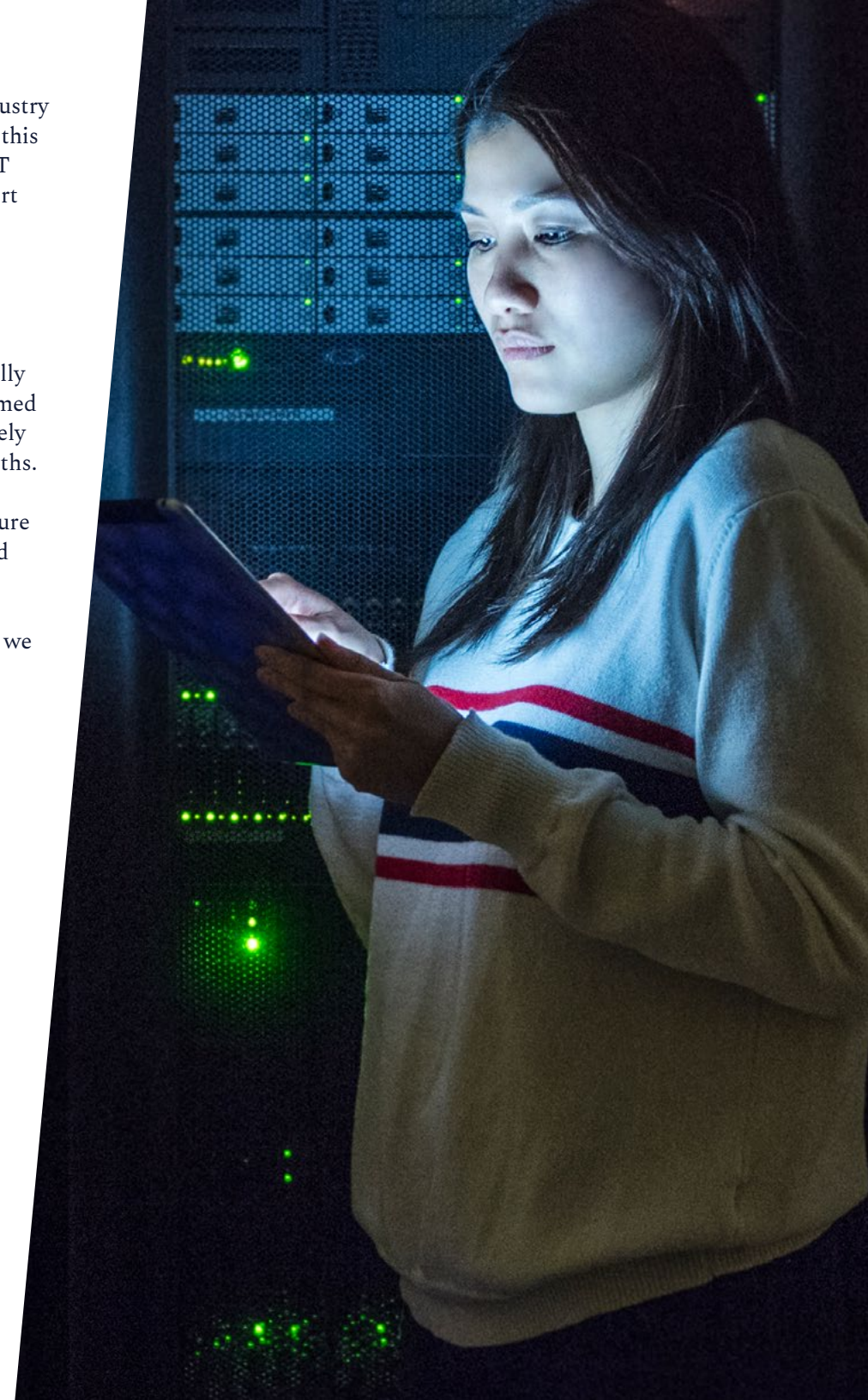
Later in this report, we'll offer recommendations to help address current — and future — skilling needs. But first, we'll deliver a deep dive into the data we've collected and analyzed for you.

Whether you're a CIO or CTO, IT practitioner, human resources or learning leader, we hope you'll glean valuable information.

WHAT YOU'LL FIND IN THE IT SKILLS AND SALARY REPORT

This report delivers clear, concise information and insight on:

- Salaries for IT professionals — including which industries pay the best and what's driving raises and bonuses
- Most popular certifications — including which certifications are associated with the highest salaries
- Individual and organizational benefits of certification — including the value of pursuing certification from multiple tech providers and bodies of knowledge
- The biggest challenges IT decision-makers are facing — including the causes of and impact on the shortage of skills in IT departments
- The value of IT training and preferred learning methods for professional development — including the impact on job satisfaction and roadblocks to training



We'll also look forward as we deep dive into:

- The after-effects of COVID-19
- Addressing the widening skills gap
- Top traits for skills development
- Top technology provider focus areas

PRIMARY FINDINGS

IT SALARIES CONTINUE TO INCREASE

IT professionals — whether non-management, mid-level, senior-level, or executive (for common roles, see [Responsibility Level](#) section of this report) — are collecting bigger paychecks. This indicates that those with the right skills and experience are more essential than ever. Average salaries were up across almost every region. And 52% of IT professionals reported receiving a raise this past year with the leading factor being job performance. This also signals organizations are having to pay higher salaries to attract and retain talent in critical areas such as cloud, security, and data.

IT VALUES CERTIFICATIONS

Ninety-two percent of IT professionals who participated in the survey reported holding at least one certification. That's a 5% increase over last year. Increases in salary, new job offers, and overall improvements in the quality of work were all cited as benefits that are a direct result of additional training in the IT world.

CERTIFICATIONS DELIVER VALUE TO ORGANIZATIONS AND EMPLOYEES

Certification is an important vehicle to validate one's knowledge and skills in a specific domain. Nearly half of those surveyed saw an improvement in their work post certification. Almost as many reported feeling more engaged in their work and/or faster at performing their jobs. Sixty-four percent of IT decision-makers say certified employees deliver \$10,000 or more in additional value compared to non-certified employees. Clearly, time and money invested in certification training have a positive effect on an organization's bottom line — even though 10% of IT staff report that management does not see a benefit to training or do not approve it.



THE SKILLS GAP REMAINS A CRITICAL CHALLENGE

Three out of four IT decision-makers on a global scale are reporting gaps in IT staff skills. It's a 145% increase since 2016 — and that's creating a lot of angst for organizations feeling the pinch. Increases in stress, project duration, and operating costs, as well as decreased quality and ability to meet business objectives, are the unfortunate consequences. IDC reports that by 2022, IT skills gaps will result in monetary losses of \$775 billion.* Organizations need to address this growing and very real concern.

INVESTING IN EMPLOYEE DEVELOPMENT CAN CLOSE SKILLS GAPS AND HELP RETAIN TOP TALENT

Nine out of ten managers have a plan in place to address the skills gap, and over 50% believe the answer is training existing staff.

But it's not just decision-makers who value training. IT staff crave learning and development for personal growth — and if they're not getting it from their current employer, they'll move on. For the third year in a row, more than half of IT professionals reported that the lack of learning and development is the main reason for changing employers. IT decision-makers need to invest in the professional growth of their IT departments before it's too late.

FORMAL TRAINING ISN'T AVAILABLE TO EVERYONE

Thirty-seven percent of IT decision-makers report their organization does not provide employees formal training to keep their skills up to date. Consequently, employees have to informally learn new skills to help the organization achieve its goals.

* IDC's Technology Skills Survey, April 2021.



IT PROFESSIONALS FEEL SECURE IN THEIR JOBS

Counter to what professionals in some other industries have experienced, layoffs are few and COVID-19 seems to have had little to no bearing on IT job retention. The need for technology — especially in areas such as cloud computing and cybersecurity — actually increased as the world's workers went remote. Similarly, in many industries, digital transformation accelerated by necessity.

Nearly 80% of IT professionals feel they have extremely good to somewhat good job security. Unfortunately, that security comes with an associated downside: increased workload. Nearly 40% of IT staff feel that their workload is a big challenge.

OPEN JOBS REMAIN UNFILLED

Organizations are challenged to fill open positions. Fifty-four percent of IT decision-makers report they've been unable to fill at least one position, and 38% report having three or more unfilled. This results in excessive workloads for existing employees, unfulfilled duties, or both. The main reasons: organizations cannot attract candidates with the necessary skills nor afford the salary demands — and there simply aren't enough qualified candidates.



SALARY

Comprehensive salary data is important information for IT employers and employees alike to know where they stand in the industry, how to remain competitive, and how skills or certifications can affect salary.

For Skillsoft's Global Knowledge 2021 IT Skills and Salary Report, we looked at a number of key determinants when it comes to salary including:

- Education
- Responsibility level
- Job role
- Certification

Further, we dug deeper to report key salary* findings in the following categories:

- Base salary
- Raises and bonuses
- Responsibility level
- Career experience
- Job function

**All salaries were converted into U.S. dollars during the survey to enable relevant comparisons.*



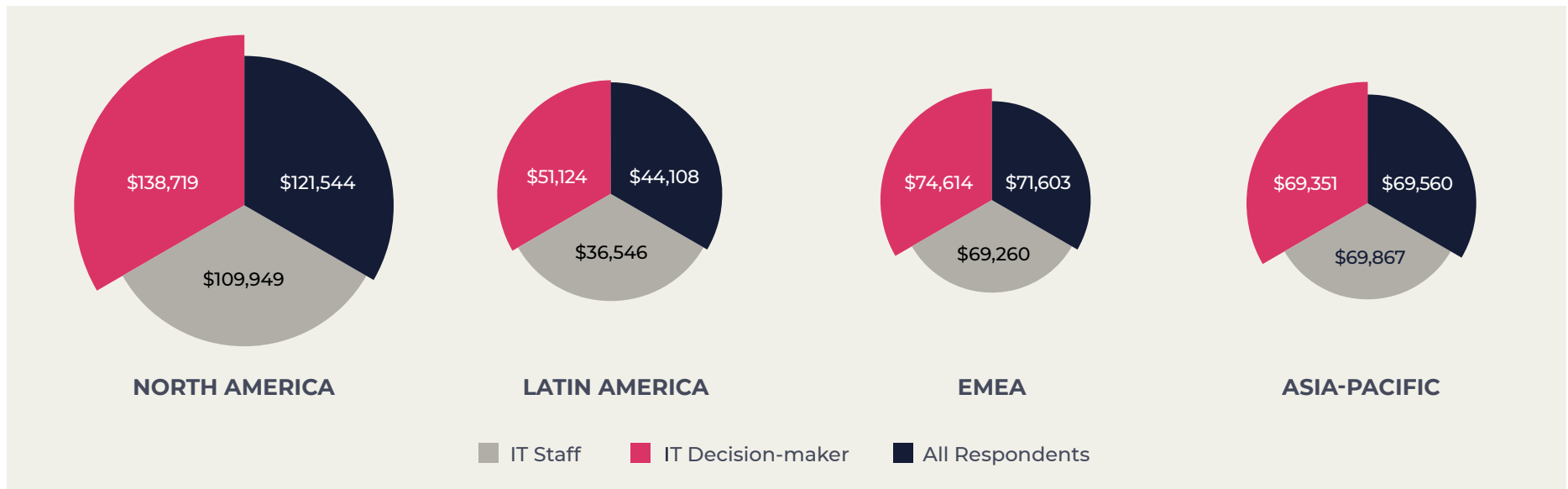
BASE SALARY

Across the markets we surveyed, there was good news for IT professionals. Salaries increased year-over-year.

North America led in base salaries with \$121,544 annually.

Regionally, EMEA saw the second highest average salary at \$71,603, followed by Asia-Pacific at \$69,560, and Latin America with an average salary of \$44,108. When comparing annual salaries between 2021 and 2020, all regions experienced an increase. The biggest jump was seen in the Asia-Pacific region, which increased by \$6,435 or 10.2% in one year.

As expected, decision-makers earn more than IT staff. We see the biggest differences in North America (\$28,770) and Latin America (\$14,578). Surprisingly, IT staff in Asia-Pacific actually make slightly more (\$516) than IT decision-makers.



RESPONSIBILITY LEVEL

For the 2021 survey, we again looked at the salaries of responding IT professionals ranging from non-management positions up to executive level.

Non-management IT staff (specialists, analysts, associates, level 1, etc.) represent almost 55% of the respondents for this report.

Common job roles:

- Cloud architect
- IT auditor
- Network engineer/technician
- Software engineer
- Technical support

Mid-level professionals (managers and team leads) represent slightly more than 25% of our respondents.

Common job roles:

- Information security
- Infrastructure manager
- Project manager
- IT audit manager

Senior-level professionals account for 15% of this year's report.

Common job roles:

- Director
- Program manager
- Security manager
- IT compliance manager

Executives account for 3% of our report. Common job roles:

- Chief Executive Officer (CEO)
- Chief Information Officer (CIO)
- Chief Security Officer (CSO)/Chief Information Security Officer (CISO)
- Chief Technology Officer (CTO)

SALARY BY RESPONSIBILITY LEVEL

	EXECUTIVE	COUNT	%	SENIOR	COUNT	%	MID	COUNT	%	NON-MANAGER	COUNT	%
NORTH AMERICA	\$186,031	112	3%	\$156,825	640	15%	\$120,696	937	22%	\$109,949	2,502	60%
LATIN AMERICA	\$60,085	18	4%	\$52,829	91	18%	\$49,070	154	30%	\$36,546	244	48%
EMEA	\$100,692	95	4%	\$82,522	359	14%	\$67,063	704	27%	\$69,260	1,488	56%
ASIA-PACIFIC	\$101,881	64	3%	\$82,575	341	17%	\$60,145	716	36%	\$69,867	859	43%

CAREER EXPERIENCE

It should come as no surprise that IT professionals with more experience make more money.

In North America, IT professionals can expect to reach the \$100,000 mark with six to 10 years of experience. The data shows that some professionals, with certain in-demand skills, make more earlier in their career than those a couple, to a few, years ahead of them. One takeaway is that in a tight job market, organizations are paying more to attract and hire skilled candidates. Nearly 88% of our respondents fall in the categories of greater than six years of experience. Less than 1% of respondents are in their first year.

CAREER EXPERIENCE

YEARS	NORTH AMERICA		LATIN AMERICA		EMEA		ASIA-PACIFIC		TOTAL COUNT
	Average	%	Average	%	Average	%	Average	%	
< 1	\$62,348	41%	\$27,860	5%	\$59,344	25%	\$49,813	29%	80
1-5	\$84,041	42%	\$25,416	6%	\$45,418	28%	\$59,284	23%	1,140
6-10	\$105,810	39%	\$41,257	7%	\$57,824	29%	\$51,685	24%	1,801
11-15	\$120,411	37%	\$42,325	6%	\$71,087	31%	\$63,573	26%	1,995
16-20	\$127,117	45%	\$57,452	5%	\$80,177	28%	\$78,713	22%	1,728
21-25	\$139,310	51%	\$50,544	4%	\$85,979	30%	\$99,949	16%	1,292
26+	\$141,927	62%	\$55,758	3%	\$94,242	22%	\$95,418	13%	1,289

JOB FUNCTION

The table below provides salary data based on job function for each region.

Please note: in the following table and throughout the report, whenever the number of survey responses didn't reach minimum thresholds, we've indicated the data with an asterisk. These instances are presented here as anecdotal results and might be subject to fluctuation with more responses.

SALARY BY JOB FUNCTION

FUNCTIONAL AREA	NORTH AMERICA		LATIN AMERICA		EMEA		ASIA-PACIFIC	
	Average	Record Count	Average	Record Count	Average	Record Count	Average	Record Count
Application Development / Programming	\$110,260	148	\$34,415	28	\$57,516	162	\$47,628	110
Audit / IT Compliance	\$122,788	943	\$49,440	82	\$67,299	460	\$66,125	456
Business Analysis	\$99,357	49	-	-	\$87,857	30	\$71,595	28
Business Operations	\$117,708	30	-	-	\$67,560	26	\$48,511*	10*
Cloud	\$144,533	207	\$45,979	43	\$88,684	165	\$68,092	124
Cybersecurity / IT Security	\$132,163	691	\$54,064	72	\$81,087	370	\$81,714	343
Data, Analytics, and Business Intelligence	\$119,321	126	\$45,155*	14*	\$71,214	104	\$63,661	67
DevOps	\$122,737	55	\$44,107*	17*	\$71,672	71	\$49,949	48
Executive (C-level or VP or Director)	\$174,181	190	\$65,474	18	\$109,000	87	\$106,098	69
Finance / Accounting	\$110,379*	16*	-	-	\$62,252*	16*	\$66,173*	13*
Infrastructure, Networking, and Telecommunications	\$93,278	486	\$36,495	89	\$52,830	353	\$54,338	185
IT Architecture and Design	\$132,941	279	\$37,351	56	\$82,173	314	\$72,851	177
Learning and Development / Human Resources	\$113,207	25	-	-	\$41,558	10	-	-
Other	\$116,729	179	\$37,111	12	\$69,108	110	\$79,918	48
Project and Program Management	\$121,666	156	\$38,318	24	\$78,915	94	\$75,745	98
Risk Management	\$136,586	263	\$61,899	13	\$86,138	106	\$82,152	112
IT Sales and Marketing	\$156,471	71	\$49,050*	7*	\$82,651	31	\$76,025	23
Service Desk and IT Support	\$66,652	270	\$32,878	23	\$40,485	135	\$48,092	64

*Note: small sample size, subject to fluctuation - Not enough data

INDUSTRY

Aside from executives and those in IT sales, the higher-paying salaried positions are in cloud, risk management, security, and IT architecture and design. By region, here are the highest salaried functions that met the respondent thresholds:

● North America

- Cloud (\$144,533)
- Risk management (\$136,586)
- IT architecture and design (\$132,941)

● Latin America

- Cybersecurity/IT security (\$54,064)
- Audit/IT compliance (\$49,440)
- Cloud (\$45,979)

● EMEA

- Cloud (\$88,684)
- Risk management (\$86,138)
- IT architecture and design (\$82,173)

● Asia-Pacific

- Risk management (\$82,152)
- Cybersecurity/IT security (\$81,714)
- Project and program management (\$75,745)

The service desk/IT support function is the lowest paying job function in North America, Latin America, and EMEA. This is to be expected, as these roles are often entry points for professionals starting their IT careers.

The table on the following page provides salary data organized by industry for each region.



SALARY BY INDUSTRY

FUNCTIONAL AREA	NORTH AMERICA		LATIN AMERICA		EMEA		ASIA-PACIFIC	
	Average	Record Count	Average	Record Count	Average	Record Count	Average	Record Count
Accounting, Auditing, Banking, and Finance	\$130,585	739	\$47,002	95	\$75,252	472	\$75,032	443
Aerospace and Defense	\$122,781	91	-	-	\$79,517	26	\$120,091	11
Automotive	\$109,819	31	-	-	\$62,483	27	\$90,385	11
Communications, Public Relations, and Advertising	\$108,807	28	-	-	\$73,913	26	\$86,293	13
Construction, Architecture, and Engineering	\$89,663	36	\$22,531*	5*	\$68,165	36	\$70,931	16
Education Service	\$83,755	200	\$44,559	19	\$52,513	57	\$93,910	27
Government: Military and Homeland Security	\$125,351	195	N/A	N/A	\$73,664	44	\$118,306	18
Government: Non-Defense, State, and Local	\$103,780	248	\$54,276	20	\$63,497	143	\$84,911	82
Healthcare	\$114,089	301	\$38,951	11	\$68,432	64	\$71,672	47
Hospitality, Travel, and Recreation	\$114,009	49	\$51,482*	5*	\$85,476*	9*	\$71,576	14
IT Consulting	\$125,143	561	\$38,948	156	\$71,537	662	\$58,281	385
IT Hardware	\$107,869	65	\$30,537*	7*	\$67,277	41	\$71,567	46
IT Software	\$140,153	375	\$48,558	48	\$74,672	236	\$66,766	267
Insurance, Real Estate, and Legal	\$124,454	211	\$72,795	14	\$83,299	89	\$86,828	71
Manufacturing: Consumer and Industrial	\$120,779	186	\$35,272*	8*	\$76,356	80	\$69,780	77
Media, Film, and Music	\$128,240	34	-	-	\$63,802*	9*	\$66,593	13
Natural Resources: Agriculture, Forestry, and Fishing	\$116,460	12	-	-	\$40,047*	8*	-	-
Natural Resources: Mining, Oil, and Gas	\$122,913	42	\$59,685*	7*	\$73,020	39	\$74,968	21
Nonprofit	\$98,485	41	-	-	\$60,704	27	\$81,861	11
Other	\$135,167	215	\$43,877	17	\$67,461	126	\$60,680	84
Pharmaceutical, Medical, and Biotech	\$140,858	44	-	-	\$86,775	22	\$66,845	18
Professional Business Services	\$122,016	110	\$29,325	10	\$74,175	59	\$63,677	45
Retail	\$120,451	89	\$42,442*	7*	\$74,591	59	\$90,015	40
System Integrators (SI) and VARs	\$125,715	45	\$33,948*	8*	\$68,799	68	\$59,334	72
Telecommunications	\$107,002	133	\$47,869	48	\$61,778	153	\$51,444	93
Transportation and Public Utilities	\$113,066	94	\$32,523*	6*	\$84,384	50	\$59,340	43
Wholesale	\$112,609	16	-	-	\$83,679	14	\$87,664	11

*Note: small sample size, subject to fluctuation - Not enough data

U.S. SALARIES

The average salary of IT professionals in the U.S. (including the 50 states, District of Columbia, Puerto Rico, and other U.S. territories) who participated in the survey is \$120,710. As you'll see from the data, location and cost of living play just as important a role as experience, job function, and industry. Geographically, the east and west coasts generally pay more when it comes to IT salaries.

States with the highest paying salaries:

- New Jersey (\$152,656)
- Virginia (\$145,724)
- Connecticut (\$141,475)
- California (\$138,264)

SALARY BY STATE

STATE	AVERAGE
Alabama	\$102,680
Alaska	-
Arizona	\$116,594
Arkansas	\$119,198*
California	\$138,264
Colorado	\$132,088
Connecticut	\$141,475
Delaware	-
District of Columbia	\$116,482*
Florida	\$114,308
Georgia	\$128,983
Hawai'i	\$119,846*
Idaho	\$113,879*
Illinois	\$126,508
Indiana	\$107,135
Iowa	\$119,839*
Kansas	\$121,412*
Kentucky	\$106,512

STATE	AVERAGE
Louisiana	\$91,666*
Maine	-
Maryland	\$131,026
Massachusetts	\$131,619
Michigan	\$112,936
Minnesota	\$120,872
Mississippi	\$121,531*
Missouri	\$108,728
Montana	-
Nebraska	\$98,680*
Nevada	\$102,849*
New Hampshire	\$129,500
New Jersey	\$152,656
New Mexico	-
New York	\$130,810
North Carolina	\$123,869
North Dakota	-
Ohio	\$115,571

STATE	AVERAGE
Oklahoma	\$99,047*
Oregon	\$134,525
Other U.S. territories	-
Pennsylvania	\$115,934
Puerto Rico (U.S. territory)	\$58,808*
Rhode Island	\$105,288*
South Carolina	\$121,828
South Dakota	-
Tennessee	\$114,580
Texas	\$124,106
Utah	\$132,782
Vermont	-
Virginia	\$145,724
Washington	\$132,427
West Virginia	-
Wisconsin	\$113,531
Wyoming	-

- Not enough data * Under 30 respondents

CANADIAN SALARIES

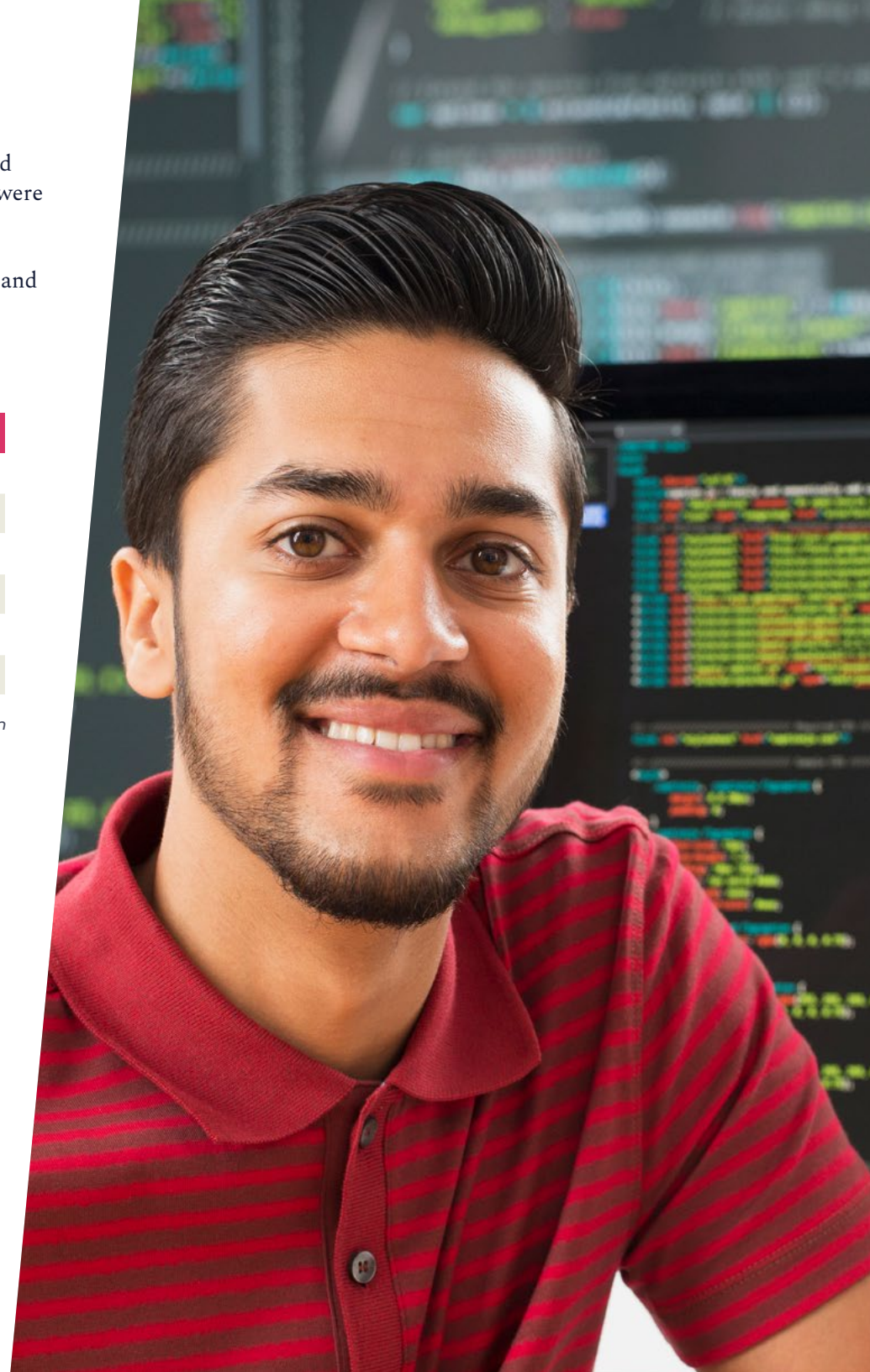
The average annual salary of an IT professional in Canada is \$83,795. This is based on the data from the provinces below. Provinces with fewer than 10 respondents were omitted from the list.

Ontario has the highest average salary at \$89,509, followed by Manitoba (\$85,870) and Alberta (\$83,998).

SALARY BY PROVINCE

PROVINCE	AVERAGE
Alberta	\$83,998
British Columbia	\$69,598
Manitoba	\$85,870*
Nova Scotia	\$67,808*
Ontario	\$89,509
Quebec	\$79,114

**Note: small sample size, subject to fluctuation*



EUROPEAN SALARIES

For the third straight year, Switzerland leads European salaries with an annual average of \$141,950 — a 6.5% increase from 2020.

Denmark (\$122,304) and Norway (\$101,794) were the other two countries to break the \$100,000 threshold. Rounding out the top five are Germany (\$95,982) and Belgium (\$92,543).*

SALARY BY EUROPEAN COUNTRY

COUNTRY	AVERAGE
Austria	\$86,461
Belgium	\$92,543
Bulgaria	\$46,994*
Croatia	\$54,039*
Czech Republic	\$48,664
Denmark	\$122,304
Finland	\$85,835
France	\$69,280
Germany	\$95,982
Greece	\$44,761
Hungary	\$39,662
Ireland	\$83,689
Italy	\$54,511
Luxembourg	\$102,922*
Netherlands	\$90,366
Norway	\$101,794
Poland	\$52,712
Portugal	\$49,298
Romania	\$41,209
Russia	\$38,612
Serbia	\$53,714*
Slovakia	\$46,840*
Slovenia	\$31,783*
Spain	\$57,239
Sweden	\$78,784
Switzerland	\$141,950
Ukraine	\$40,618
United Kingdom	\$88,847

**Note: small sample size, subject to fluctuation*

**Countries with an insufficient number of responses were omitted from the list.*

RAISES AND BONUSES

The data suggests that employees can have a strong, direct impact on their salary increases through job performance and/or by learning new skills, which allow them to take on more responsibilities.

Raise percentages for IT decision-makers varied between the regions, from roughly 2% to over 7%. Latin America, whose salaries in the past had been dropping by 2% year-over-year, did some catch-up with an average increase of over 7%.

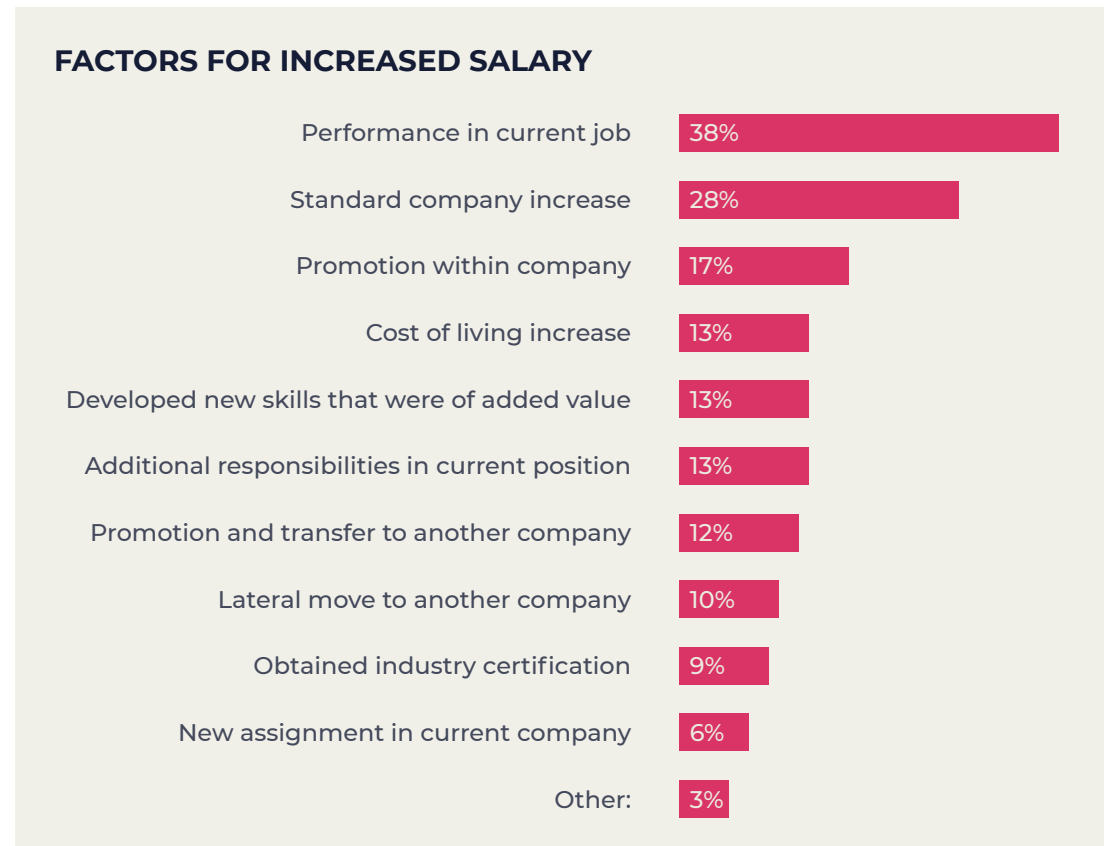
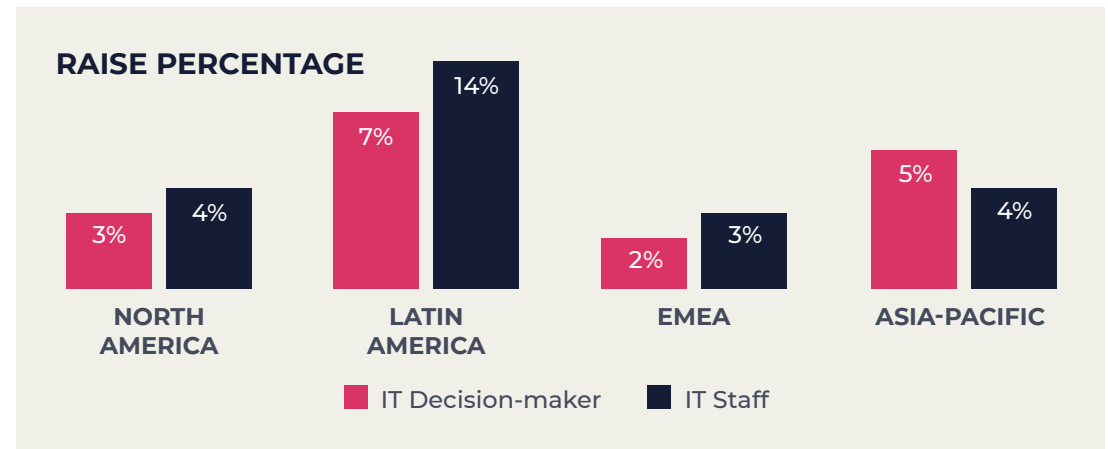
IT decision-makers in EMEA came in with the lowest raise increase, just shy of 2%. North America and Asia-Pacific came in between 3% and nearly 5%.

IT staff did better than IT decision-makers when it came to raises. Latin America staff received an average raise of 13% — significantly higher than EMEA, which experienced just under a 2.5% increase. North America and Asia-Pacific came in around 4%.

REASONS FOR A RAISE

The top factors that IT professionals attributed to salary increases in 2021 were:

- Job performance (38%)
- Standard company increase (28%)
- Promotion within company (17%)
- Cost of living increase, learning new skills, additional responsibilities (all weighed in at 13%)





RECEIVED A BONUS

2021 was a strong year for bonuses. Worldwide, 57-69% of eligible decision-makers and 43-55% of staff earned a bonus.

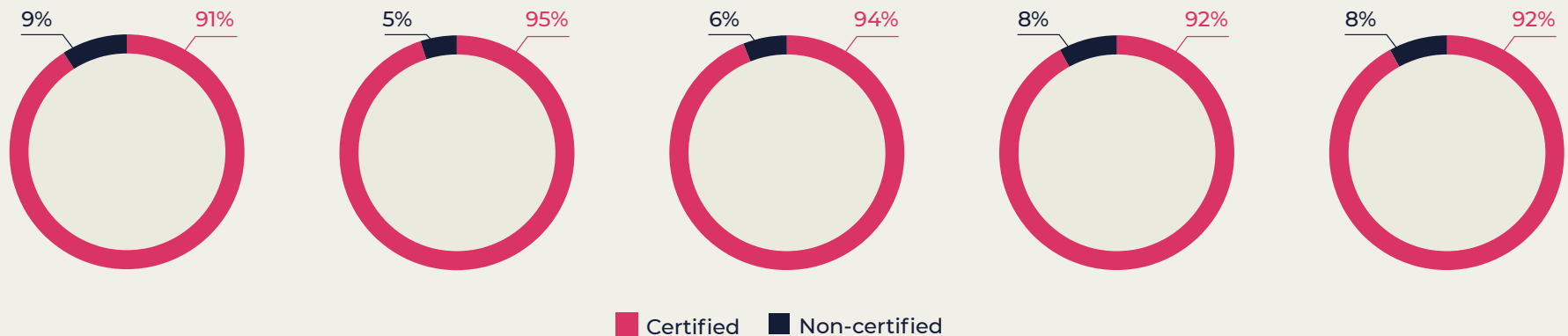
	NORTH AMERICA	LATIN AMERICA	EMEA	ASIA-PACIFIC
IT Decision-Maker — Received Bonus	69%	59%	57%	67%
IT Decision-Maker — Did Not Receive Bonus	31%	41%	43%	33%
IT Staff — Received Bonus	55%	43%	46%	58%
IT Staff — Did Not Receive Bonus	45%	57%	54%	42%

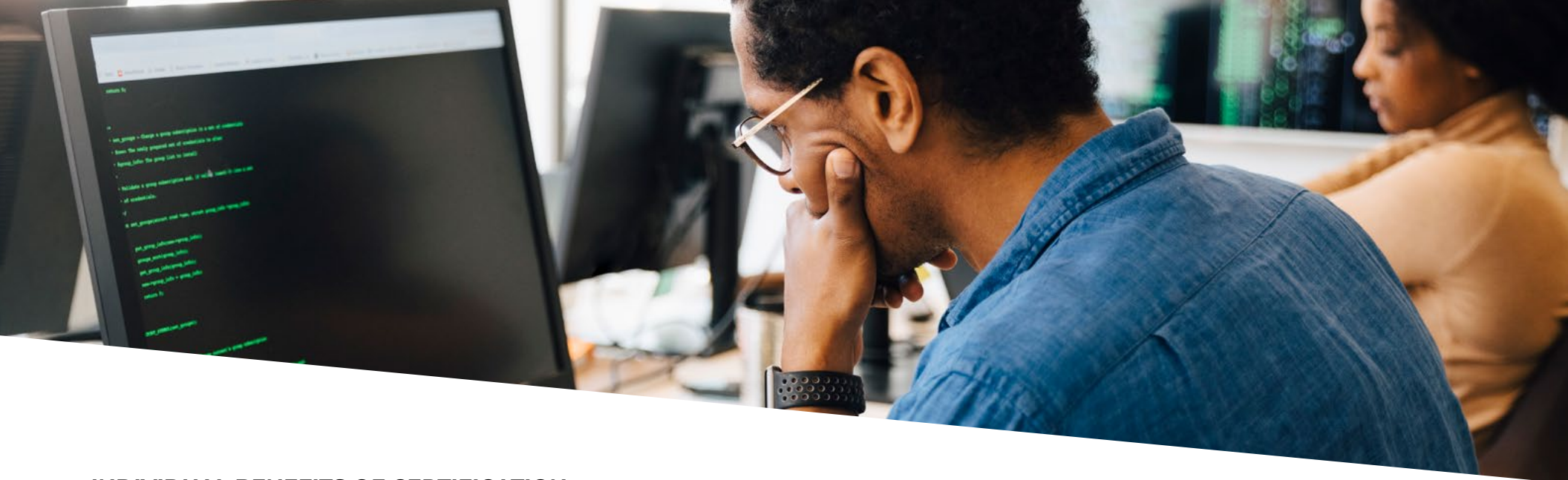


CERTIFICATIONS

Of the IT professionals surveyed, 92% hold at least one certification. That's up nearly 5% from last year and almost 7% from 2019. Worldwide, that figure remains relatively consistent, with Latin America and EMEA being slightly above the global average for the third year in a row. North America is the only region to dip below the worldwide average.

CERTIFIED PROFESSIONALS BY REGION





INDIVIDUAL BENEFITS OF CERTIFICATION

IT professionals saw a number of benefits associated with certifications. An improvement in the quality of work was the biggest outcome (48%), followed by engaging more in work (32%). Other common answers were the speed at which work was performed improved, new job offers, and salary increases. Only 20% saw no difference in their on-the-job effectiveness. (Note: For organizational benefits of certification, see the [IT Decision-Maker Insights](#) section of this report.)

The responses clearly show that certification is worth the training investment and time that is required. Hands-on training works exceptionally well because new skills can immediately transfer to the workplace. Certification creates a more valuable and effective worker, which is why promotions and raises are common after acquiring new skills.

An IT certification indicates to employers that an individual is motivated to put the time, effort, and expense into improving their job performance — and that’s an indicator that pays off for both employer and employee alike.

JOB EFFECTIVENESS AFTER CERTIFICATION TRAINING





CERTIFICATION CATEGORIES

The table on the following page represents all survey participants who hold at least one certification in a category. This clustering provides a high-level snapshot of the average salary for a respective category within each region. There are a lot of factors that contribute to these numbers. Two to keep front of mind are:

1. IT professionals cross-certify, meaning they earn certifications from multiple organizations. Cross-certification is important because it strengthens the overall knowledge, skills, and abilities of a professional, and provides more comprehensive and flexible assignability of skills within the job market. They need to equip themselves to work in multi-vendor environments, develop specific domain expertise, apply vendor-neutral (or vendor-agnostic) best practices, and more. This increases their market value, both for job retention/promotion and also in the open market as a job seeker.
2. The number and levels of certification an organization offers impacts the overall dollar value. For example, the Microsoft category has over 40 enterprise certifications spanning beginner to expert, whereas some categories only provide a few certifications for professionals in more senior roles. Are Microsoft certifications less valuable? No. They provide important certifications for IT professionals at all levels.

ITIL Foundation makes up the largest percentage of certifications and is frequently one of the most popular certifications across all categories. ITIL is the world's most widely-used framework for IT management. While it is a foundational certification, it's an important step for helping professionals understand end-to-end service management, and it's associated with higher salaries. Previous years' data showed that those with the ITIL Foundation certification earned roughly \$8,000 more than those without the certification.

SALARY BY CERTIFICATION CATEGORY

CERTIFICATION CATEGORY	NORTH AMERICA		LATIN AMERICA		EMEA		ASIA-PACIFIC	
	Average	Count	Average	Count	Average	Count	Average	Count
Amazon Web Services (AWS)	\$140,156	353	\$45,107	48	\$90,214	210	\$67,258	228
Application Development and Programming	\$122,849	59	\$35,033*	13	\$65,757	61	\$61,653	49
Business Analysis	\$100,193	53	-	-	\$85,756	42	\$84,187*	22
Business Architecture	\$155,776	41	\$49,627*	12	\$101,234	52	\$94,509	31
Business Process	\$131,621	88	\$38,202*	10	\$96,699	50	\$79,598	34
Cisco	\$102,006	498	\$36,336	90	\$56,612	406	\$62,598	246
Citrix	\$116,524	131	\$41,122*	21	\$78,899	170	\$50,804	50
CompTIA	\$103,333	669	\$25,28*	24	\$61,683	133	\$72,790	51
Cybersecurity	\$141,359	243	\$51,511	30	\$79,300	126	\$82,910	85
Data Center	\$129,722	27	-	-	\$69,453	27	\$64,396	25
Database	\$121,777	63	\$29,295*	13	\$79,113	60	\$78,190	57
Dell EMC	\$116,239	59	-	-	\$60,399	30	\$54,151*	18
DevOps	\$128,938*	16	\$62,494*	13	\$92,440	29	\$68,118	25
EC-Council	\$138,610	82	\$61,719*	15	\$70,955	66	\$67,185	73
Google Cloud	\$146,765	434	\$42,949	113	\$80,875	443	\$69,634	326
HP	\$109,294	63	-	-	\$66,884	44	\$78,109*	19
IBM	\$129,836	56	\$32,596*	12	\$76,801	43	\$78,434	42
ISACA	\$136,383	822	\$54,974	93	\$79,014	542	\$75,890	534
(ISC) ²	\$147,413	295	\$63,496*	15	\$92,488	87	\$93,772	120
ITIL and IT Service Management	\$121,075	490	\$51,622	106	\$77,149	540	\$72,135	377
Juniper Networks	\$121,909	40	-	-	\$49,025	39	\$64,086	32
Microsoft	\$111,586	786	\$39,850	144	\$66,344	764	\$60,604	425
Nutanix	\$136,008	114	-	-	\$67,211	55	\$52,589	64
Project Management, Agile and Scrum	\$137,807	333	\$49,307	53	\$88,018	255	\$80,279	206
Red Hat / Linux	\$128,140	70	\$40,733*	15	\$74,737	58	\$59,980	70
Veeam	\$131,016	31	-	-	\$55,965	36	\$36,136*	14
VMware	\$119,897	190	\$42,671	26	\$68,224	140	\$65,882	95
Web Development	\$103,756	30	-	-	\$58,380*	23	-	-
Wireless	\$110,217	40	-	-	\$69,457*	16	-	-

*Note: small sample size, subject to fluctuation - Not enough data

TOP-PAYING CERTIFICATIONS

Let's dig deeper into which IT certifications are associated with higher salaries on a regional level.

It's important to note that many certified IT professionals hold more than one certification. The salaries indicated on the following lists are a culmination of several factors in addition to certification, including relevant skills, job role, tenure, geography, and dedication.

NORTH AMERICA

In the United States and Canada, Google Certified Professional Cloud Architect is the top earning certification (\$160,961 in 2021) for a third straight year. This is followed very closely by Google Certified Professional Data Engineer (\$160,629). ISACA's Certified Information Security Manager (CISM), which held the number two position in 2020, fell to the number six position this year.

The top five highest salaries by certification are:

1. Google Certified Professional Cloud Architect
2. Google Certified Professional Data Engineer
3. AWS Certified Solutions Architect — Associate
4. Certified in Risk and Information Systems Control (CRISC)
5. Certified Information Systems Security Professional (CISSP)

To be included in the list, a certification must have had at least 60 North American responses.

TOP-PAYING CERTIFICATIONS NORTH AMERICA

CERTIFICATION	AVERAGE
Google Certified Professional Cloud Architect	\$160,961
Google Certified Professional Data Engineer	\$160,629
AWS Certified Solutions Architect — Associate	\$151,730
CRISC — Certified in Risk and Information Systems Control	\$148,336
CISSP — Certified Information Systems Security Professional	\$147,885
CISM — Certified Information Security Manager	\$146,880
PMP® — Project Management Professional	\$146,335
NCP-MCI — Nutanix Certified Professional — Multicloud Infrastructure	\$137,576
CISA — Certified Information Systems Auditor	\$132,026
MCSE: Windows Server	\$117,096
Microsoft Certified: Azure Administrator Associate	\$115,353
CCA-V — Citrix Certified Associate — Virtualization	\$111,979
CompTIA Security+	\$107,947
CCNP Enterprise — Cisco Certified Network Professional — Enterprise	\$107,897
VCP-DCV — VMware Certified Professional — Data Center Virtualization 2020	\$93,297

TOP-PAYING CERTIFICATIONS LATIN-AMERICA

CERTIFICATION	AVERAGE
CISA - Certified Information Systems Auditor	\$61,391
MCSE: Windows Server - Microsoft Certified Systems Engineer: Windows Server	\$57,084
PMP®: Project Management Professional	\$56,902
CRISC - Certified in Risk and Systems Controls	\$53,962
CISM - Certified Information Security Manager	\$53,151
Google Cloud Professional Data Engineer	\$50,524
AWS Certified Solutions Architect - Associate	\$49,761
Microsoft Certified: Azure Solutions Architect Expert	\$48,985
Google Cloud Professional Cloud Architect	\$48,472
Microsoft Certified: Azure Administrator Associate	\$45,161
CCNP Enterprise - Cisco Certified Network Professional Enterprise	\$42,505

Minimum of 20 responses

TOP-PAYING CERTIFICATIONS EMEA

CERTIFICATION	AVERAGE
AWS Certified Solutions Architect - Associate	\$96,479
CISSP - Certified Information Systems Security Professional	\$95,119
CRISC - Certified in Risk and Information Systems Control	\$92,068
Google Certified Professional Cloud Architect	\$89,851
Google Certified Professional Data Engineer	\$84,657
PMP - Project Management Professional	\$84,337
CISM - Certified Information Security Manager	\$84,054
Microsoft Certified: Azure Solutions Architect Expert	\$81,941
CCP-V: Citrix Certified Professional - Virtualization	\$79,936

Minimum of 55 responses

TOP-PAYING CERTIFICATIONS ASIA-PACIFIC

CERTIFICATION	AVERAGE
CRISC - Certified in Risk and Information Systems Control	\$98,265
CISSP - Certified Information Systems Security Professional	\$95,273
PMP® - Project Management Professional	\$85,273
CISM - Certified Information Security Manager	\$84,485
Google Cloud Certified Professional Cloud Architect	\$78,398
Google Cloud Professional Data Engineer	\$74,521
CISA - Certified Information Systems Auditor	\$73,513
MCSE: Windows Server - Microsoft Certified Systems Engineer: Windows Server	\$67,925
CEH - Certified Ethical Hacker	\$65,104
AWS Certified Solutions Architect - Associate	\$63,341
CCNP Enterprise - Cisco Certified Network Professional Enterprise	\$57,636
Microsoft Certified: Azure Administrator Associate	\$54,532

Minimum of 60 responses

WHICH CERTIFICATIONS ARE HELD BY SURVEY PARTICIPANTS?

In addition to listing the individual certifications, we've added the most popular certification areas categorized by security and non-security.

Most widely-held certifications are:

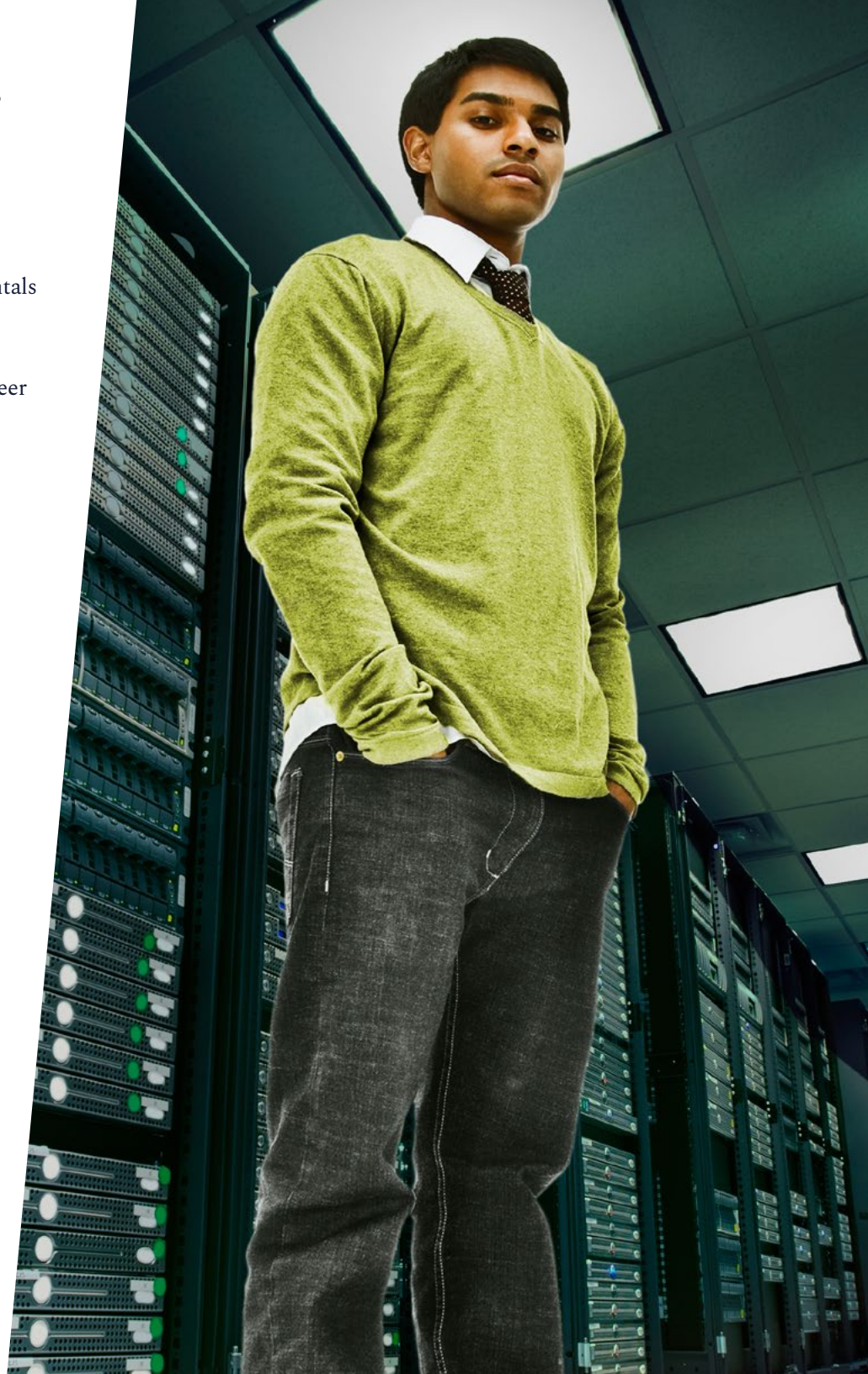
1. ITIL® Foundation
2. CISA - Certified Information Systems Auditor
3. Google Cloud Professional Cloud Architect
4. CISM - Certified Information Systems Manager
5. CCNA - Cisco Certified Network Associate
6. Microsoft Certified: Azure Fundamentals
7. AWS Certified Solutions Architect - Associate
8. Google Cloud Associate Cloud Engineer
9. CompTIA Security+
10. MCSE: Windows Server - Microsoft Certified Systems Engineer: Windows Server

Most widely-held, non-security certifications are:

1. Microsoft
2. ITIL and IT Service Management
3. Google Cloud
4. Cisco
5. Product Management, Agile and Scrum (PMP®, ScrumMaster, Prince2)
6. AWS
7. CompTIA
8. VMware
9. Citrix
10. Database-focused (e.g., Oracle)

Most widely-held security, governance, compliance and/or privacy-related certifications are:

1. ISACA
2. (ISC)²
3. CompTIA
4. Microsoft
5. Cisco
6. EC-Council
7. AWS
8. Google Cloud
9. GIAC
10. IAPP



WHICH CERTIFICATIONS ARE BEING PURSUED BY SURVEY PARTICIPANTS?

Most pursued certifications are:

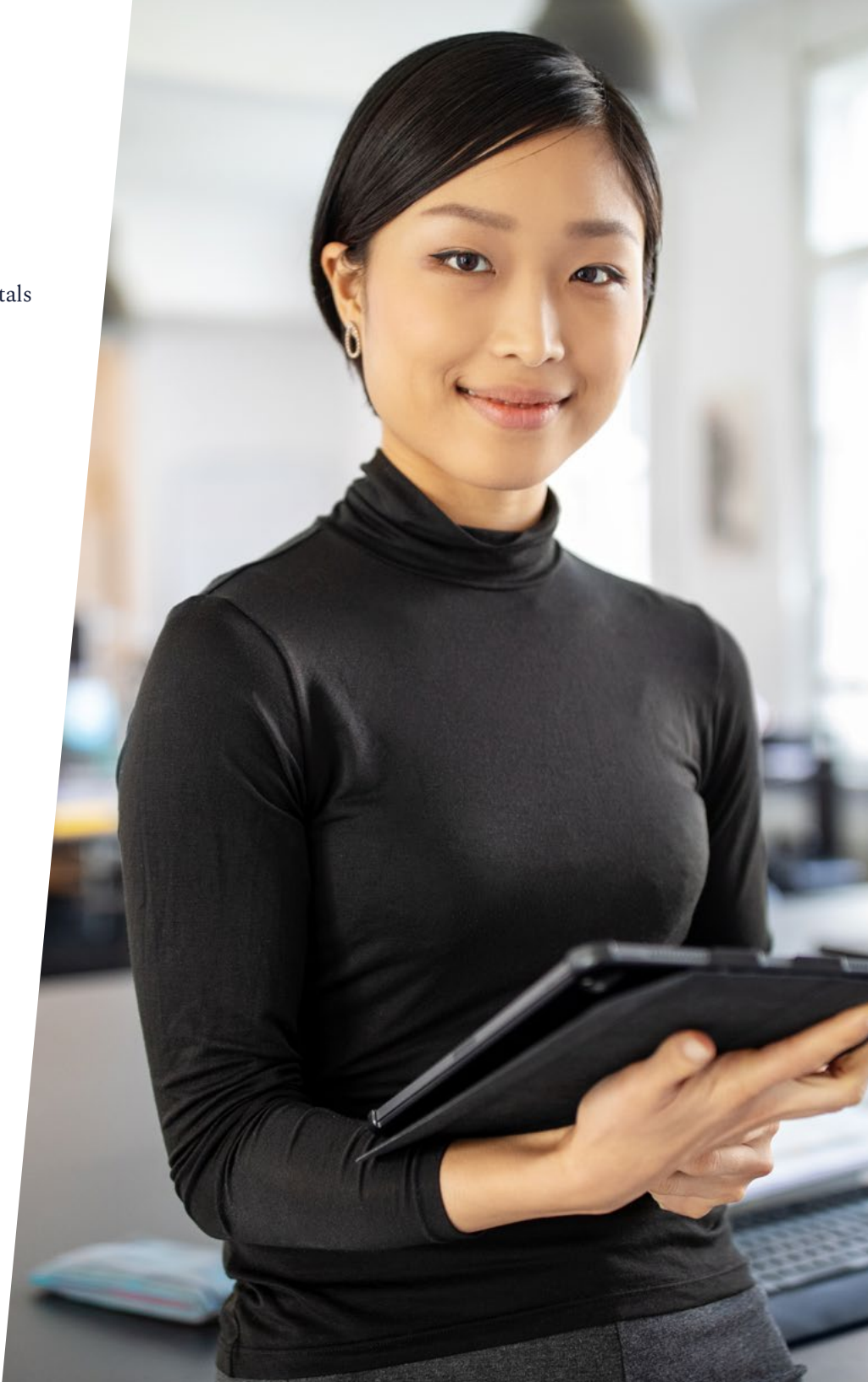
1. CISSP - Certified Information Systems Security Professional
2. AWS Certified Solutions Architect - Associate
3. AWS Certified Cloud Practitioner
4. CISM - Certified Information Security Manager
5. Google Cloud Professional Cloud Architect
6. AWS Certified Solutions Architect - Professional
7. Microsoft Certified: Azure Fundamentals
8. CRISC - Certified in Risk and Information Systems Control
9. Microsoft Certified: Azure Administrator Associate
10. Microsoft Certified: Azure Solutions Architect Expert

Non-security certifications are:

1. Microsoft
2. AWS
3. Google Cloud
4. Cisco
5. Product Management, Agile and Scrum (PMP®, CAPM, ScrumMaster)
6. ITIL and IT service management
7. CompTIA
8. VMware
9. Citrix
10. Red Hat / Linux

Most widely-held security, governance, compliance and/or privacy-related certifications are:

1. ISACA
2. (ISC)²
3. Microsoft
4. AWS
5. CompTIA
6. Cisco
7. Google Cloud
8. EC-Council
9. Offensive Security
10. Palo Alto Networks



CERTIFICATION RESOURCES

When it comes to increasing productivity and retaining staff, IT decision-makers need to commit time and budget to employee training and certification. For IT staff, certification opens more opportunities and pay increases. Now is the perfect time to get started.

Overcoming the hurdles to certification is the first step — and we're here to help with direct answers to some of your most pressing questions:

Where do I start?

Find out [How to Select the Right Certification for You](#).

Which certification makes sense for me?

Check out [18 IT and Business Certifications Worth Having](#).

What's involved in certification? Do I have the capacity?

Before you embark on your certification journey, make sure you're fully aware of the courses and exam prep available, and what's required or optional. We've listed some of the material below.

- [AWS](#)
- [Business Analysis](#)
- [Blockchain](#)
- [Cisco](#)
- [Citrix](#)
- [CompTIA](#)
- [Cybersecurity](#)
 - (ISC)²
 - EC-Council
 - F5
 - ISACA
 - Palo Alto Networks
 - SonicWall
 - and more
- [DevOps](#)
- [Google Cloud](#)
- [ITIL](#)[®]
- [Microsoft](#)
- [Nutanix](#)
- [Project Management](#)
- [Red Hat](#)
- [ServiceNow](#)
- [TOGAF](#)[®]
- [Veeam](#)
- [VMware](#)
- [Wireshark](#)



IT DECISION-MAKER INSIGHTS

For Skillsoft's Global Knowledge 2021 IT and Salary Report, 45% of the respondents were IT decision-makers, those who have staff reporting to them and decision-making authority, ranging from manager levels to executives. Seventy-two percent manage teams with 10 or fewer employees. Only 5% oversee 100 employees or more.

These IT decision-makers have a considerable amount of responsibility within their departments. They control the direction of staff, technology, budgets, skills development, and more. But, with that responsibility comes a multitude of challenges that can disrupt and jeopardize meeting organizational goals.

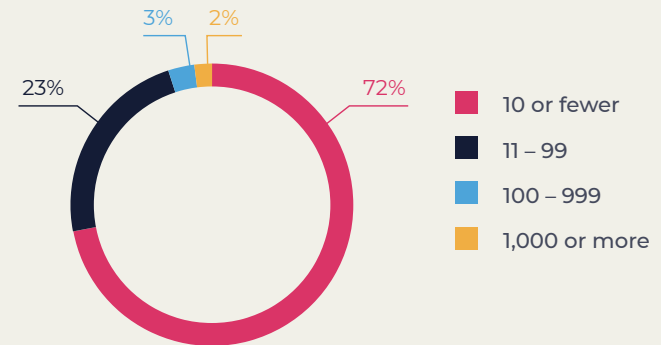
KEY CHALLENGES

Last year, we heard a lot about the struggles associated with talent recruitment and retention. Although this continues to be a challenge for 39% of our respondents, the biggest hurdle this year is managing IT workload (46%). Resource and budget constraints also create difficulties for 41% of IT decision-makers.

The heavy workload and lack of resources can lead to even bigger problems for decision-makers when staff doesn't have the time or budget to gain valuable skills through training and certifications.

Other notable challenges faced include the inability to develop stronger teams, innovation and time management issues, employee morale, and executing with urgency and excellence. These challenges are no doubt a byproduct of the heavy workload faced by many IT professionals.

NUMBER OF EMPLOYEES SUPPORTED



KEY CHALLENGES FOR FOR IT DECISION-MAKERS





IT DEPARTMENT BUDGETS

IT decision-makers in North America felt a significant budget pinch in 2021. As recently as 2019, 52% of U.S. and Canadian IT departments expected an increase in their budgets. In 2020, that figure dipped to 39% and in 2021 it plummeted to just 26%. Twenty-eight percent expected a decrease in their budget and nearly half forecasted no change.

The pictures in Latin America, EMEA, and Asia-Pacific tell a similar story. Overall, these regions fell in line with North America, as IT decision-makers reported a 12-13% drop in their expectations for a budget increase from 2020 to 2021. Roughly 20% expected a decrease in their budgets. Forty-three percent of EMEA IT departments expected to see no change.

FORECASTED IT BUDGET CHANGE

	NORTH AMERICA			LATIN AMERICA			EMEA			ASIA-PACIFIC		
	2021	2020	2019	2021	2020	2019	2021	2020	2019	2021	2020	2019
Increase	26%	39%	52%	43%	55%	49%	36%	49%	46%	44%	57%	56%
Decrease	28%	13%	17%	19%	9%	16%	20%	11%	18%	21%	9%	17%
No Change	46%	49%	31%	38%	37%	35%	43%	40%	35%	35%	34%	27%

TOP INVESTMENT AREAS

For the second year running, cybersecurity holds the top investment space with 50% of IT departments worldwide making it a big priority. Cloud computing remains in second place followed closely by governance and compliance.

Cybersecurity and cloud are also the two most difficult hiring areas. It pays to invest within your own organization to upskill or train existing employees in these areas.

Big data/data management and infrastructure and systems round out the top five investment areas for 2021. Based on the numbers for the last few years, there is no reason to suspect that there will be a shift in the top investment areas as we look ahead to 2022.

The areas where IT departments are investing the least amount of money are: CRM, video, voice and telephony, web development, collaboration applications, and blockchain.



TOP INVESTMENT AREAS

AREA	NORTH AMERICA	LATIN AMERICA	EMEA	ASIA-PACIFIC	WORLDWIDE
Cybersecurity	49%	50%	52%	49%	50%
Cloud Computing	43%	48%	43%	44%	44%
Governance and Compliance	40%	32%	33%	37%	37%
Big Data/Data Management	28%	31%	27%	33%	28%
Infrastructure and Systems	27%	27%	25%	31%	25%
AI, Cognitive Computing & Machine Learning	22%	26%	25%	22%	25%
GDPR and Data Privacy	22%	24%	24%	22%	24%
Internet of Things (IoT)	15%	17%	19%	21%	17%
Virtualization	14%	14%	18%	14%	15%
Business Process Management	13%	14%	14%	12%	12%
Software Development	11%	13%	12%	12%	12%
Containers	11%	13%	11%	11%	11%
Networking and Wireless LAN	10%	11%	11%	10%	11%
Mobile App Development & Deployment	10%	10%	11%	10%	10%
Service Management	9%	10%	10%	9%	9%
Mobility and Endpoint Management	9%	9%	9%	9%	9%
Enterprise Resource Management (ERP)	8%	8%	9%	8%	8%
Blockchain	7%	7%	8%	7%	7%
Collaboration Applications	6%	5%	8%	6%	6%
Web Development	6%	5%	7%	5%	6%
Video, Voice & Telephony	5%	5%	7%	5%	6%
Customer Relationship Management (CRM)	4%	3%	6%	4%	6%
None	4%	3%	3%	3%	4%
Other	3%	2%	2%	2%	2%



TOP TECHNOLOGY PROVIDER FOCUS AREAS

Once again, Microsoft holds the number one position in our top ten areas of focus for IT departments. It had a slight bump up from last year, with nearly 56% of our respondents listing it as a keen area of interest and all regions listing it as their top focus.

And for the third year, AWS comes in second worldwide with 42% listing it as an important part of their business. Globally, Google Cloud Platform was third on our top ten list. Latin America has Google Cloud Platform slightly ahead of AWS as a focus area.

WORLDWIDE TOP FOCUS

AREAS	%
Microsoft	55%
Amazon Web Services (AWS)	41%
Google Cloud Platform	27%
Cisco	24%
VMware	23%
ServiceNow	17%
Oracle	16%
SAP	15%
Splunk	14%
Mirantis / Docker	14%

NORTH AMERICA TOP FOCUS

AREAS	%
Microsoft	52%
Amazon Web Services (AWS)	45%
ServiceNow	25%
VMware	23%
Google Cloud Platform	23%
Cisco	22%
Splunk	18%
Oracle	16%
SAP	13%
Palo Alto Networks	13%

LATIN AMERICA TOP FOCUS

AREAS	%
Microsoft	56%
Google Cloud Platform	35%
Amazon Web Services (AWS)	35%
Cisco	28%
VMware	25%
Docker	20%
SAP	19%
Red Hat	17%
Oracle	17%
IBM	15%

EMEA TOP FOCUS

AREAS	%
Microsoft	59%
Amazon Web Services (AWS)	32%
Cisco	27%
Google Cloud Platform	27%
VMware	23%
Oracle	17%
SAP	17%
Docker	16%
Fortinet	14%
Citrix	13%

ASIA-PACIFIC TOP FOCUS

AREAS	%
Microsoft	56%
Amazon Web Services (AWS)	47%
Google Cloud Platform	34%
VMware	23%
Cisco	21%
Docker	17%
Oracle	17%
SAP	16%
Red Hat	15%
IBM	14%



SKILLS GAPS

The skills gap has attracted a great deal of attention in the past year, and it's tempting to "COVID-coat" the problem. But, in reality, the skills gap preceded the pandemic, and it's not going away any time soon. Technology simply moves too fast.

According to Burning Glass Technologies' report *After the Storm*, the post-pandemic economy labor market will result in 15 to 18 million new jobs created over the next five years. These are roles that currently make up 13% of demand and only 10% of employment (so there's already a shortage).

In 2021, 76% of IT decision-makers worldwide reported skills gaps. Latin America reported the highest percentage of gaps at 81%, while North America aligned more closely with the worldwide average at 75%. North America and Asia-Pacific saw a decrease in the skills gap when compared to 2020. This may be the result of organizations investing resources toward developing skill sets to avoid a loss in productivity and stalled work. The pandemic may have also given IT professionals more discretionary time in which to train.

Over the last six years, there has been a significant increase in the percentage of companies that are reporting a skills gap. We first started reporting on skills gaps in 2015 and since 2016, we've seen a 145% increase in the number of IT decision-makers who report a skills gap in their department.

WHAT CAUSES SKILLS GAPS IN IT?

There's no simple answer to that question — because one single reason doesn't exist. IT decision-makers report a wide range of circumstances that have led to skills gaps.

The number one reason, for the second year in a row, is that the rate of technological change is outpacing skills development programs.

Another common reason is the difficulty associated with hiring qualified job candidates. The sad truth is that the talent pool in competitive areas just isn't big enough. Even when candidates are identified, 35% of respondents report that they don't have the budget to attract them and 25% can't pay what these in-demand candidates want.

Consequently, new hires are not the solution for many managers. However, they face challenges if they attempt to develop skills within their current staff as well. Thirty-two percent of IT decision-makers said they haven't invested enough, while nearly 20% say their current programs aren't effective.

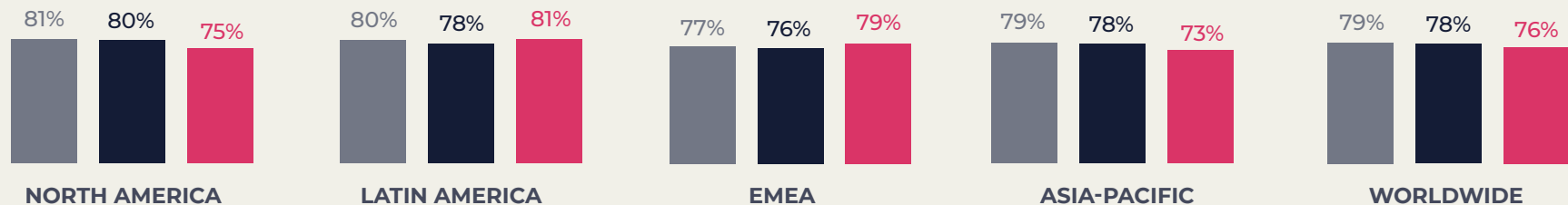
To learn more about identifying and closing skills gaps, download our free e-book, [Mind the Gap: A Six Step Guide to Organizational Success](#).

REASONS BEHIND SKILLS GAPS



REPORTING CURRENT SKILLS GAPS

■ 2019 ■ 2020 ■ 2021



THE RISING COSTS OF SKILLS GAPS

Not surprisingly, skills gaps create a multitude of problems for everyone in the organization, ranging from internal operational challenges to loss of business. Fifty-five percent report that it adds stress — a 10% increase since 2020 — while 42% have difficulties meeting quality objectives and 36% have trouble meeting business objectives. Leaders are also saying that skills gaps lead to projects taking longer, decreased innovation, increased operating and talent acquisition costs, and delays in new hardware/software upgrades.

All of this adds up to a big hit to the bottom line. As we pointed out earlier, IDC predicts that by 2022, the monetary losses resulting from IT skills gaps will be \$775 billion worldwide.*

Clearly, the skills gap is a challenge that must be addressed. But, all is not grim. An investment in regular training and certification can be a powerful tool to respond to and thrive in the rapid pace of technological change.

IMPACT OF SKILLS GAPS ON THE ORGANIZATION



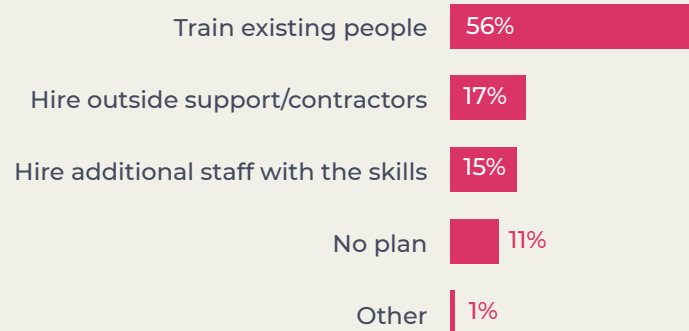
* IDC's Technology Skills Survey, April 2021.

SKILLS GAP RESPONSE

So, what can be done — and what is being done — to combat the skills gap? Fifty-six percent of IT decision-makers plan to train their existing people. That's a wise decision, as it's often more costly to attract and hire new talent than to invest in your existing workforce.

The solution comprises two words: *upskilling* and *reskilling*.

HOW MANAGERS PLAN TO HANDLE SKILLS GAPS



With technology evolving at an ever more rapid pace, skills have become more important than traditional roles. And, organizations that prioritize training and commit to a culture of continual learning are better equipped to fill current and future roles. An added benefit to upskilling and reskilling your current team is that it shows you're willing to invest in your people — which can have a big impact on productivity, morale, and retention.

When training existing employees isn't an option, IT decision-makers look to hire outside support or contractors to ease the burden on current employees and fill the gaps.



While most IT decision-makers are preemptively planning to combat skills gaps, 11% report having no plan in place. And that's a recipe for disaster. Gaps in skills don't go away. They just get bigger. And at what point does that affect the organization as a whole? Faster than you might think.

Budgets and organizational support need to be addressed and priority needs to be given to stay current and competitive. Informal training is a great supplement to existing training or a budget-friendly alternative when formal training isn't approved.



DISCOVER HOW UPSKILLING AND RESKILLING CAN TRANSFORM YOUR ORGANIZATION

Access [Perspectives 2021](#) on demand for dynamic, thought-provoking customer panels led by top brands across industries.



MOST IN-DEMAND JOBS

Cybersecurity skills are in-demand. For the sixth straight year, IT professionals in this field are the most sought after and cause the biggest headache for IT decision-makers who need to fill these positions. This challenge remains constant on a global scale.

Cloud computing is the second most difficult hiring area, according to 28% of managers worldwide. Cloud adoption rates are outpacing training, so IT decision-makers are struggling to find the right individuals to keep up with evolving technology needs. This is troubling because organizations have already invested heavily in cloud programs and services, and they need cloud architects, administrators, and other experts to ensure those investments pay off.

Analytics and big data professionals are also in-demand, with 23% of IT decision-makers reporting they've had difficulties filling these positions. Other areas of concern when it comes to finding talent are AI and machine learning, systems and solutions architects, and DevOps.

TOP 10 CHALLENGE AREAS FOR FINDING QUALIFIED TALENT

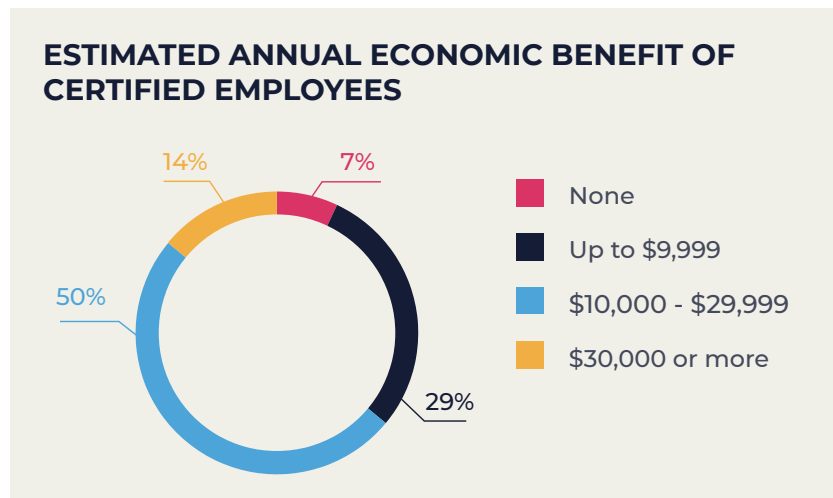
CERTIFICATION	NORTH AMERICA	LATIN AMERICA	EMEA	ASIA-PACIFIC	WORLDWIDE
Cybersecurity	42%	41%	44%	40%	42%
Cloud Computing	29%	33%	28%	27%	28%
Analytics and Big Data	20%	26%	24%	25%	23%
AI and Machine Learning	14%	18%	19%	21%	17%
Systems and Solution Architects	11%	13%	14%	14%	13%
DevOps	13%	23%	19%	17%	16%
Leadership and Management	14%	13%	13%	21%	17%
Networking and Wireless	12%	13%	10%	9%	11%
Data Policy and Governance	18%	12%	14%	16%	16%
Project Management	14%	8%	12%	12%	13%

THE VALUE OF TRAINING AND CERTIFICATION

It can't be said often enough. Training pays off.

Almost 50% of all IT decision-makers believe that certifications close organizational skills gaps. Forty-six percent have clients who require that their company achieve specific certification thresholds to do business together.

Further answers show that certification helps productivity, gives a competitive edge, and moves projects through the pipeline quicker. Combine those with some of the other popular answers (efficient troubleshooting, less employee turnover, quicker time to market of products and services, etc.) and you can see the value certification delivers.



This data argues that skills gained in certification prep provide a tremendous amount of transferrable value to teams and organizations. This shouldn't come as a surprise to IT decision-makers who may have advanced their careers following similar paths. But, others may question it. Consequently, decision-makers must advocate that investments in training will give back and, in most cases, pay for themselves in terms of tangible benefits.

BENEFITS OF A CERTIFIED STAFF



PROFESSIONAL DEVELOPMENT

In today's lightning-speed IT world, training takes place everywhere in both formal, instructor-led, structured formats, and informal, peer-to-peer, unstructured situations.

Professional development and certification can take the form of a quick Google search or a more robust, multi-day, in-depth course. Our survey showed that IT professionals prefer a more structured approach to skill development (66%) compared to a less formal methodology. This preference remains consistent with results from the last two years.

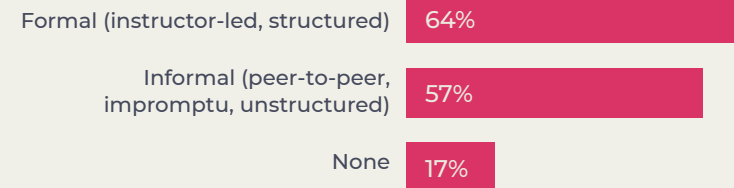
Although there was a clear delineation between a preference for formal and informal learning, training doesn't take an all or nothing approach. Most respondents had a definite preference, but in practice utilized many different methods.



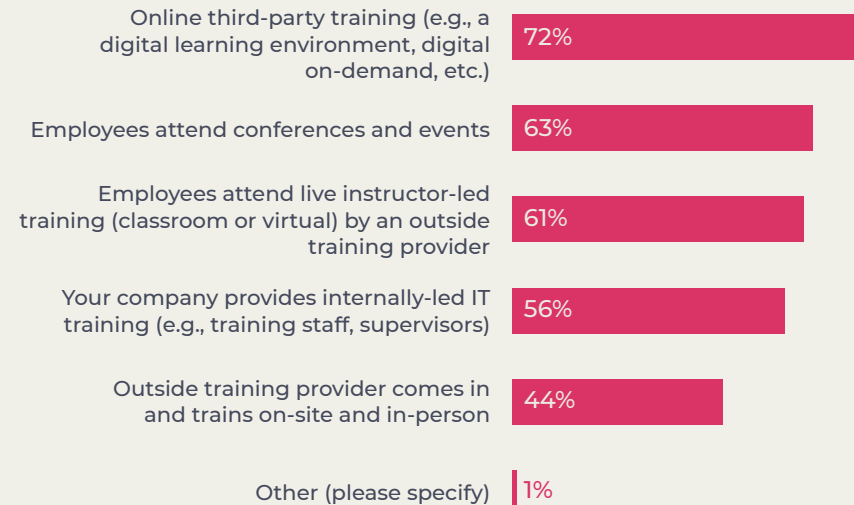
NOT SURE WHICH TRAINING TYPE TO USE?

The [Global Knowledge Skills Development Index™](#) matches the optimal training modality with specific skill needs.

TYPES OF TRAINING OFFERED BY COMPANY



FORMAL TRAINING OFFERED BY COMPANY



TRAINING TYPES

Worldwide, we found that over the last 12 months IT professionals actively participated in web-based, on-demand training sessions (73%). The second most popular learning method (38%) was from a live instructor in an online format, such as a virtual classroom.

The COVID-19 pandemic forced many organizations to adopt a remote or hybrid work model. So, as expected, the least utilized means of professional development in 2021 was in-person, instructor-led classes whether they were in the office or at an offsite location. IT professionals on a global level saw value in developing skills in a digital learning environment.

Skillsoft's Global Knowledge virtual instructor-led training (VILT) includes the same critical advantages of in-person classroom training. Participants have access to the same certified instructors, courseware, labs, and real-time discussions that our in-person classes provide.

The top five informal learning resources used globally in the last 12 months were:

1. Webinars
2. Researched a topic online
3. Books, textbooks, manuals
4. Downloaded white papers/technical guides
5. Seminars, luncheons, or conferences

TRAINING TYPES PARTICIPATED IN OR ATTENDED IN LAST 12 MONTHS

TRAINING TYPE	NORTH AMERICA	LATIN AMERICA	EMEA	ASIA-PACIFIC	WORLDWIDE
Web-based, on-demand session (self-paced, a digital learning environment, subscription-based)	75%	75%	71%	70%	73%
Live instructor-led online training	41%	46%	36%	34%	38%
Informal training session at work (impromptu, peer-to-peer)	35%	27%	31%	28%	32%
Classroom training (out-of-office)	20%	24%	26%	24%	23%
Formal training session at work (expert-led)	17%	18%	18%	16%	17%
None	8%	5%	9%	9%	8%
Other	2%	1%	1%	2%	2%



LEARNING RESOURCES USED IN THE LAST 12 MONTHS

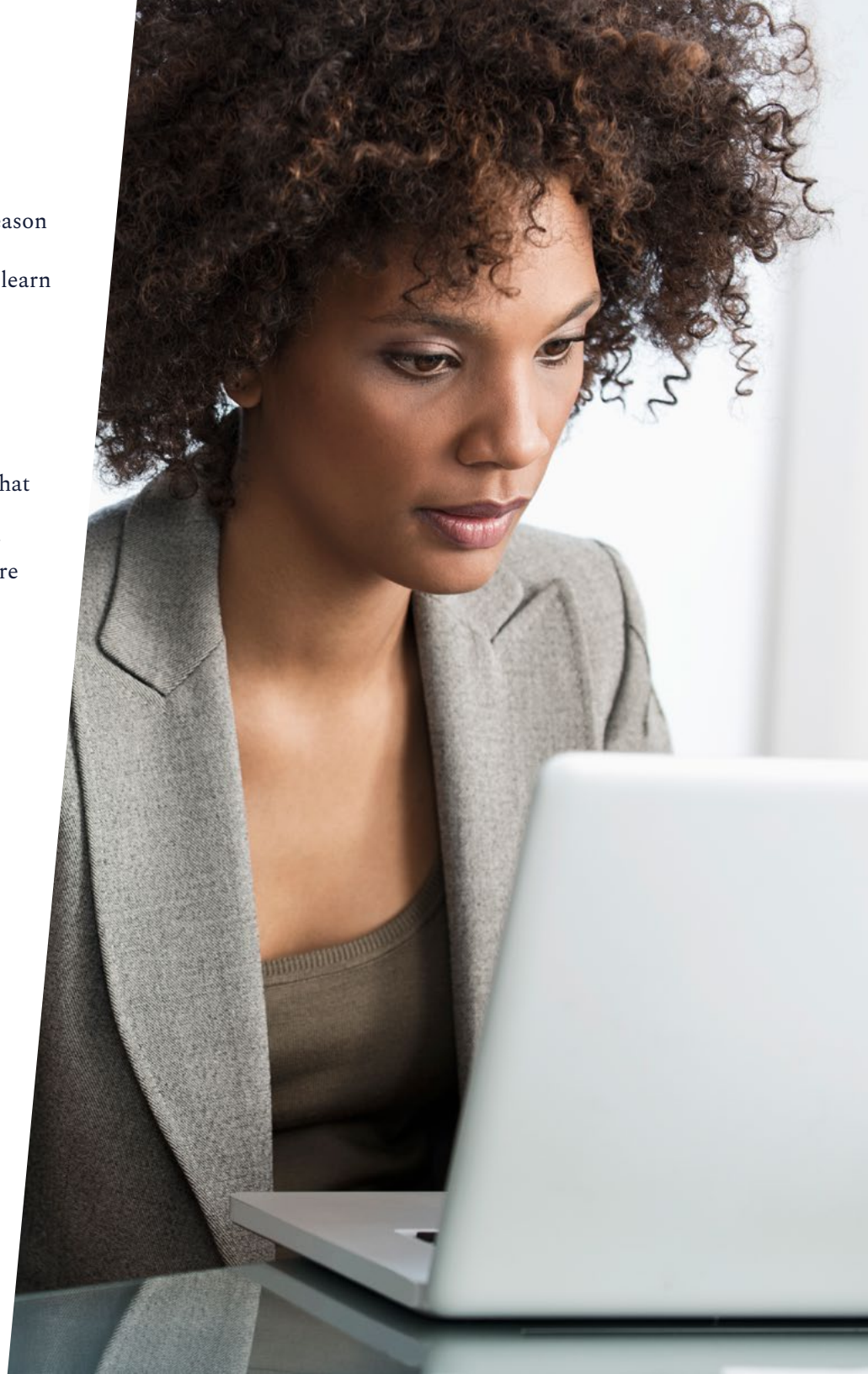
TRAINING TYPE	NORTH AMERICA	LATIN AMERICA	EMEA	ASIA-PACIFIC	WORLDWIDE
Attended webinars	71%	62%	68%	62%	68%
Researched a topic online	64%	52%	57%	45%	57%
Books, textbooks, manuals	52%	66%	60%	53%	55%
Downloaded a white paper or technical guide	52%	57%	54%	42%	51%
Attended a seminar, luncheon, or technical conference	46%	37%	42%	39%	43%
Joined an online community (e.g., blogs, Reddit, CNET)	25%	26%	26%	21%	24%
Podcasts	24%	16%	19%	11%	20%
Posted to or followed someone on social media (e.g., Twitter, LinkedIn)	19%	20%	22%	17%	19%
Other	10%	12%	9%	6%	9%
None	3%	2%	2%	5%	3%

WHY PROFESSIONALS TRAIN

The number one reason to train, cited by both IT decision-makers and IT staff, is to build new skills. In fact, 74% of IT professionals want to improve their skill set. Preparing for a certification or specialist exam was the next most popular (44%) reason given, followed by wanting a salary increase or preparing for a new technology or product migration (approximately 29% for both). And 16% of respondents want to learn more to enhance job performance.

It's interesting to note that only 3% were motivated by a manager's direction, demonstrating that a majority of IT professionals are self-motivated to develop new skills.

Participants who trained to achieve a certification were also asked to select how that training had impacted their work. Almost half noticed the quality of their work improve post-certification. Thirty-two percent felt they are more engaged in their work, while 27% said they perform their duties faster. Other notable outcomes were new job offers, decreased errors in work, and receiving raises or promotions.



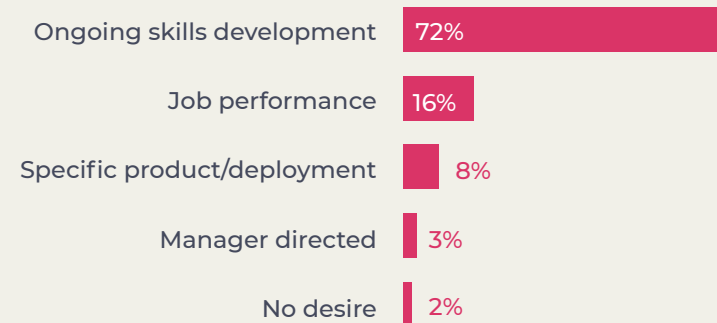
REASONS TO TRAIN

REASON	IT STAFF	IT DECISION-MAKER	OVERALL
Build new skills	75%	73%	74%
Prepare for a career certification or specialist exam	48%	39%	44%
Salary increase	33%	33%	30%
Prepare the organization for a new technology or product migration/deployment/upgrade	29%	26%	29%
Prepare me to qualify for a different job	27%	26%	28%
Meet employer's requirement	26%	23%	25%
Evaluate new technology and products for possible purchase	17%	23%	20%
Other	5%	5%	5%

POST-CERTIFICATION EFFECTIVENESS



MAIN TRAINING DRIVER



TRAINING INHIBITORS

While close to 85% of respondents had a desire for additional training, there are still many barriers. Workload is reported to be the biggest obstacle with 43% of the respondents answering that there isn't time to train and get their day-to-day job duties done.

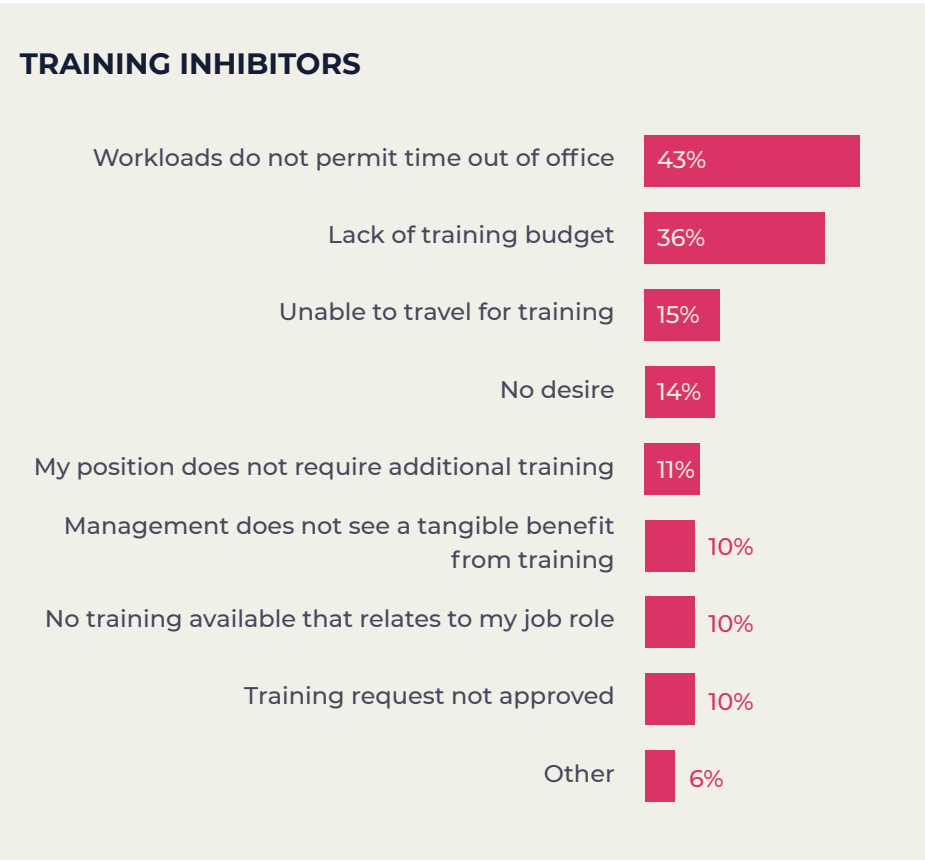
Budgets and the inability to travel for training were also inhibitors. The COVID-19 pandemic undoubtedly made this an even bigger challenge.

Unfortunately, management can sometimes be a hindrance to additional training. Ten percent of respondents reported that management didn't see a tangible benefit. Another 10% reported that training requests were not approved.

Clearly, even if management doesn't see value in training, employees recognize the potential benefits of learning new skills. Building and nurturing a learning culture is the best way to ensure organizational goals are met and new skill sets continue to evolve.



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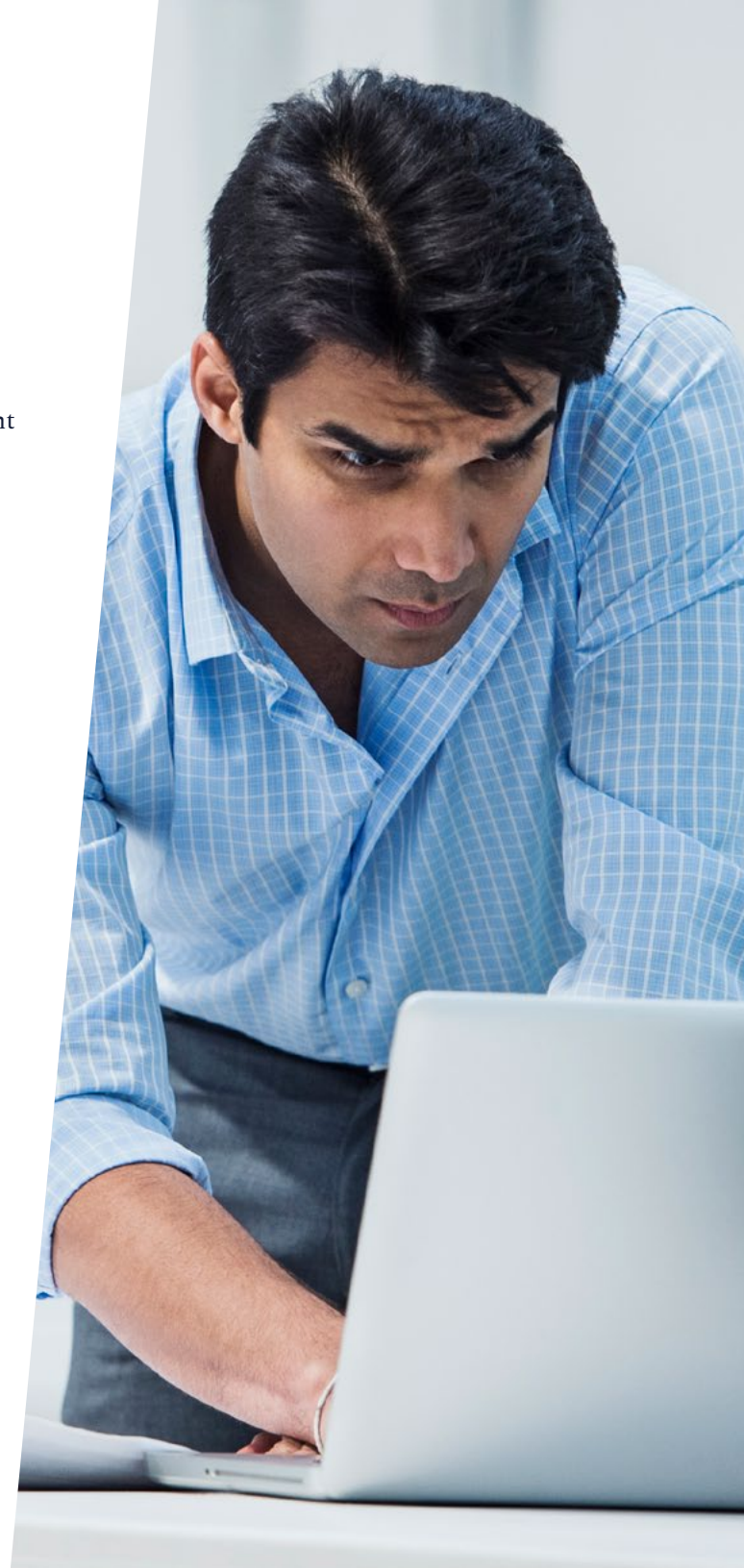
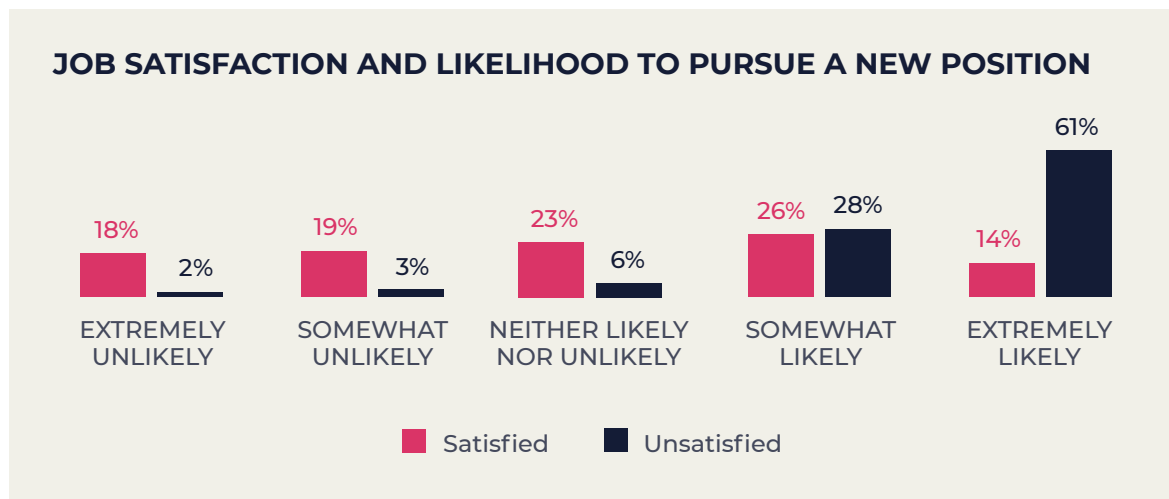


JOB SATISFACTION

Sixty percent of IT professionals who are satisfied in their job report they are unlikely to look for a new position. This gives credence to the belief that a happy employee stays an employee.

On the flipside, 89% of unsatisfied employees are likely to pursue new opportunities. That could spell disaster for an IT department — particularly a department that already recognizes employee recruitment and retention, and workloads to be issues.

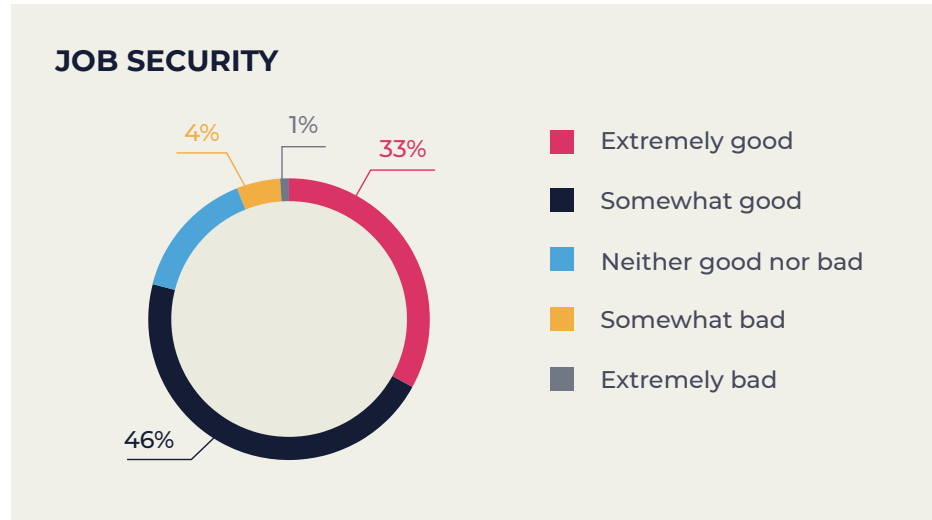
The chart below illustrates how IT staff are feeling: if they are undervalued, they will move on. If a company isn't willing to invest in one of their most valuable assets, their employees will find an organization that will. It is that simple.



JOB SECURITY

The vast majority of IT professionals feel that their job status is extremely good (33%) or somewhat good (46%).

Layoffs in IT continue to be relatively low compared to other industries, and there seems to be little difference between terminations as a result of COVID-19 and those not related to the pandemic.

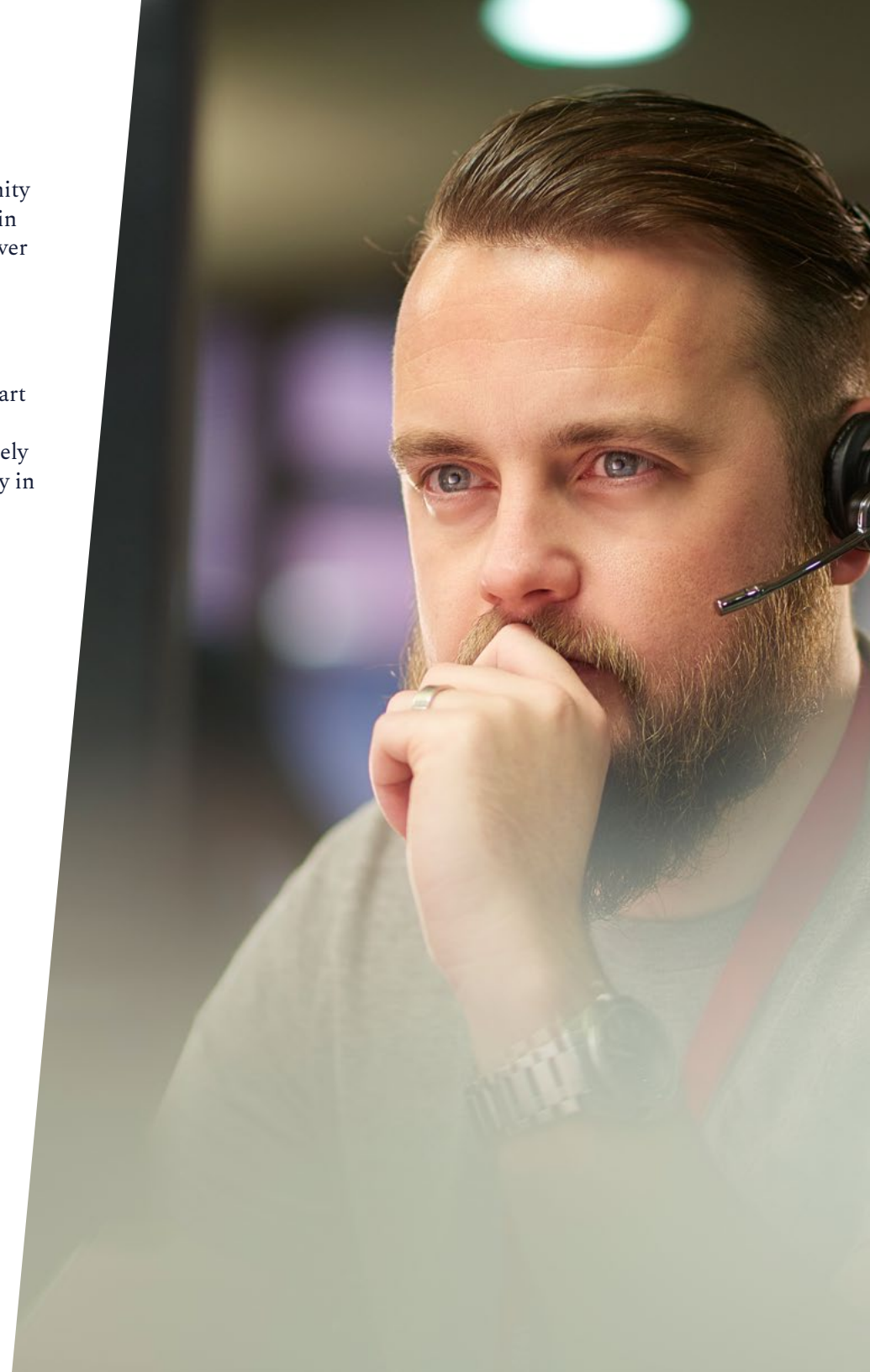
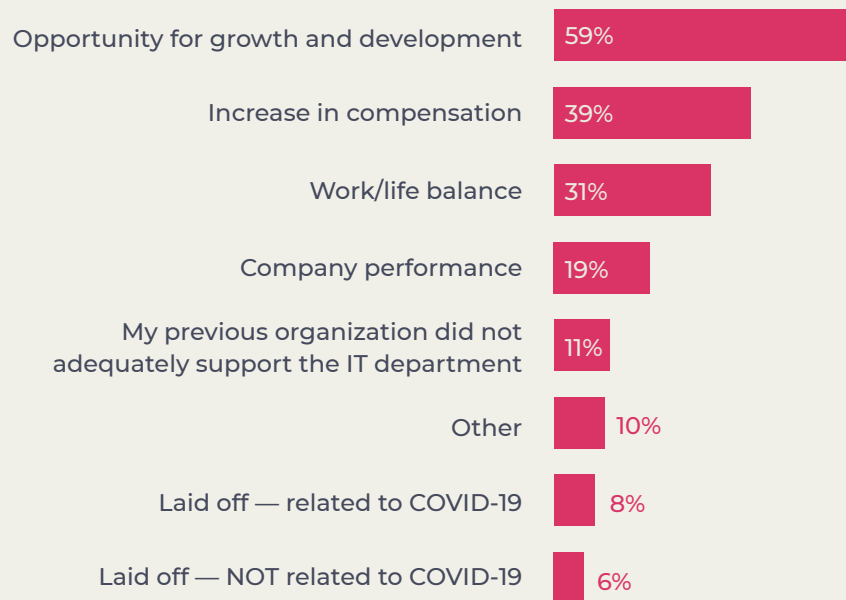


EMPLOYEE TURNOVER

Some IT professionals are looking for new opportunities — and salary is not the driving force. While a pay increase is important to 39% of job switchers, opportunity for growth and development takes precedence. In fact, for the third straight year in a row, new opportunities for growth and development are the key motivator for over half of the IT professionals who switched employers.

Creating growth opportunities and keeping their IT staff fulfilled should be a big focus for companies that want to maintain a satisfied IT department (or any department for that matter). Learning, utilizing, and enhancing skills should be part of the overall strategy for keeping IT professionals engaged. To further illustrate this, 11% of those who changed employers did so because they didn't feel adequately supported by their organization. Training and developing new skills go a long way in making an employee feel valued.

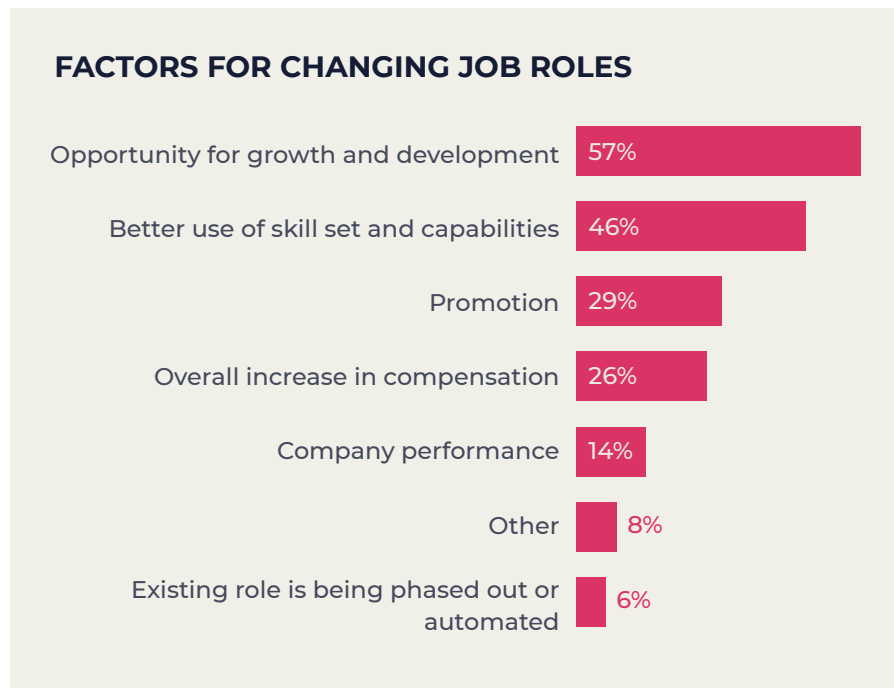
FACTORS FOR CHANGING EMPLOYER



Employers also need to manage work/life balance for their IT staff. Thirty-one percent of all IT professionals who changed employers wanted more equity between their job demands and personal time. The pandemic and — for some — the switch to working remotely or in a hybrid environment will surely have an effect on this aspect of job satisfaction for the foreseeable future.

For the second year, we looked at IT professionals who changed job roles within their existing organization. Again, opportunity for growth was the most common reason given, followed closely by better utilization of skill sets and capabilities. Promotions and pay increases also factored into the decision, but were not as common a reason given for the change.

The need to stay current in new technologies and certifications is important to IT professionals, as 6% reported that their current position had been phased out or automated, which is consistent with last year's report.



WORKPLACE CHALLENGES

For another straight year, IT staff and decision-makers are on the same page about their most daunting challenge. Managing workloads is still a big hurdle for 36% of all survey respondents. Following closely is the lack of career development and growth opportunities. This isn't surprising, as it correlates with the majority of respondents who also changed jobs in the past year.

It can't be said strongly enough: IT professionals want to feel there is opportunity in their current setting or they will look elsewhere for employment and career growth.

Another challenge faced in the IT sector is access to resources in the form of both budgets and staff that impede an organization's ability to move forward. This is matched closely by the challenge of developing team skills. Not surprisingly, team morale, jeopardized by the stress of skills gaps, is seen as just as big a challenge as lack of resources and skill development.

CURRENT WORKPLACE CHALLENGES



LOOKING AHEAD

A major takeaway from Skillssoft's Global Knowledge 2021 IT Skills and Salary Report is that learning, upskilling, and reskilling are critical to meet today's needs and tomorrow's opportunities.

THE TIME TO ACT IS NOW

The bottom line is the bottom line. Skills gaps cost money. Forty-two percent of IT decision-makers reported difficulty meeting quality objectives and 36% reported decreased ability to meet business objectives. It's not just our data that supports this. In a recent Technology Skills Survey conducted by IDC, roughly 60% of organizations felt that lack of skills caused them to lose revenue and made it more difficult to reach revenue growth objectives.* Gaps also caused customer satisfaction to decline and made organizations lose business to competitors.

Additionally, IDC reports that, "By 2022, the financial impact of the IT skills gap will grow to \$775 billion worldwide, from \$302 billion in 2019, as a result of delayed release of products/service, missed revenue, or increased cost."

It's mission critical to align training with strategic objectives. Organizations with training programs are about six-and-a-half months outside of objectives. Conversely, those with poorly aligned training are more than a year away from reaching goals. Make no mistake about it — delays are costing money.

* IDC MaturityScope Benchmark: Technology Skills Development Worldwide, 2021.



ADVICE FOR CLOSING SKILLS GAPS

There are key steps that organizations can take to close the skills gaps:

- Identify what's blocking your organization from accomplishing its goals.
- Prioritize professional development so employees can build the skills to work smarter not harder.
- Realize more of your tech's potential by properly upskilling end-users on how to use it which simultaneously reduces new tech onboarding time.
- Provide practice opportunities that build real-world competencies through hands-on labs, challenge scenarios, and cyber ranges.
- Choose the learning delivery format based on how critical the skills need is for your organization.
- Leverage certification tracks and learning paths to help develop employees.

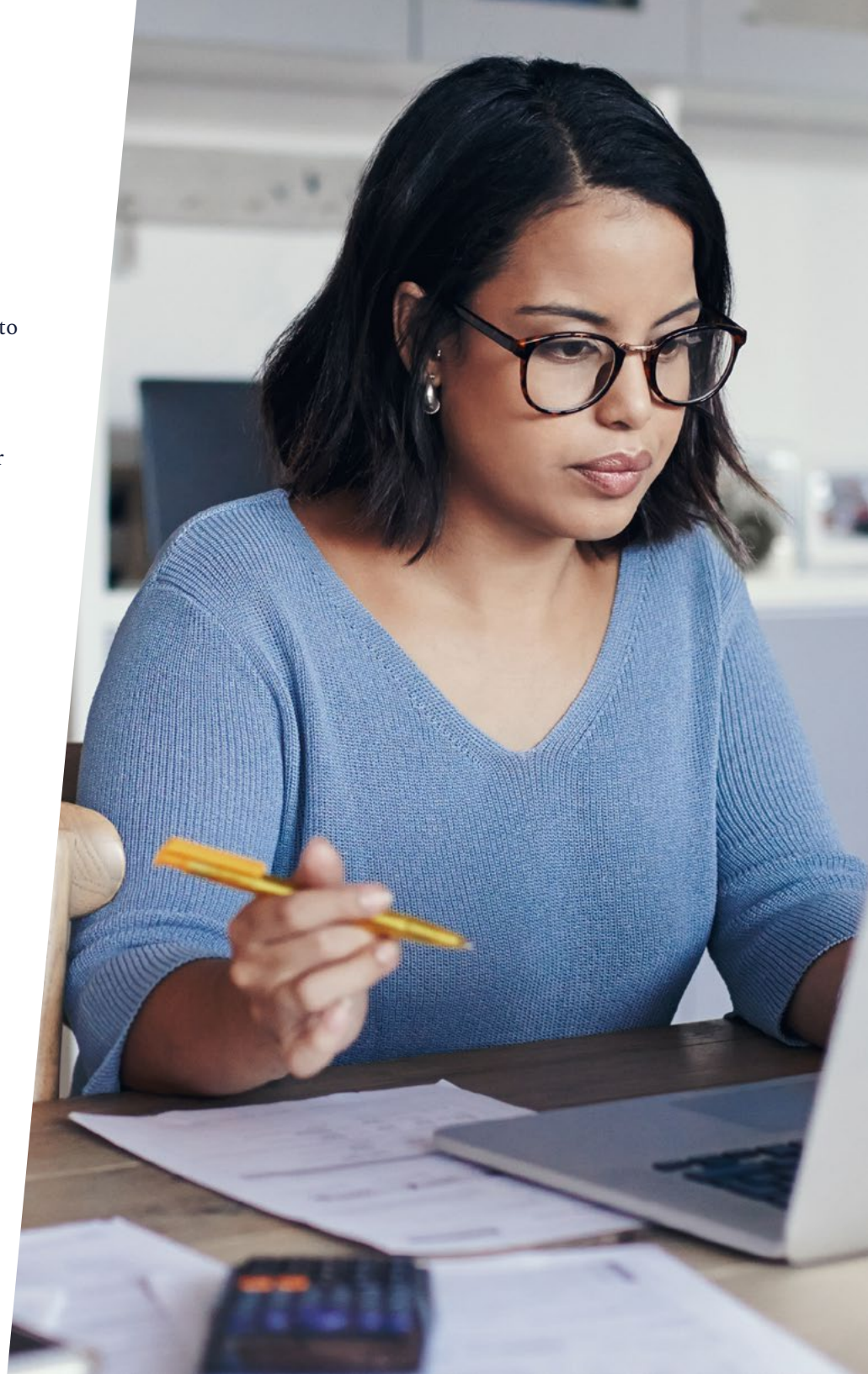
RESOURCES

MIND THE GAP: A SIX STEP GUIDE TO ORGANIZATIONAL SUCCESS

This e-book provides a high-level overview of how to close skills gaps and strengthen your workforce.

SKILLSOFT LEAN INTO TECH: SIGNALS REPORT

Discover how other organizations are upskilling their talent.



TOP TRAITS FOR TECHNOLOGY SKILLS DEVELOPMENT

IDC defines thrivers as those organizations with a technology skills development strategy and approach that exceed that of peers, where skills development is seen as a key ingredient in the organization achieving business strategy and digital transformation success. There are four traits they have in common when it comes to IT skills development:

- Ensure that skills development has senior IT leader sponsorship
- Align training goals with business and strategic IT objectives
- Manage technical training through a solution that can adapt to the individual learner for efficient skill development
- Leverage skill assessment data for career development and for matching professionals to IT roles

THE HOWS AND WHYS OF TRAINING

In terms of IT education, two thirds of our respondents want more structured training and almost 75% are actively participating in web-based, on-demand training sessions. While in-person classroom training has paused due to COVID-19 restrictions, live-streamed virtual classes continue to gain momentum to provide real-time and structured instruction.

But who's calling the shots when it comes to developing new skills? According to IDC, it's broken down fairly equally: 39% are motivated to train by their own initiative, 29% by their supervisor, and 33% because it's a job requirement.*

** IDC, Technology Skills Development MaturityScope Benchmark Survey*



CONCLUSION

Overall, our 2021 findings reaffirm that workforces with the right skills bring success to organizations and individuals alike. With the right skills:

- Organizations will have an easier time achieving their goals, creating a happier workforce, and retaining and attracting top talent.
- Employees will be more productive, less stressed, more likely to remain at their employer, and of course, positioned to earn higher salaries as a result of their improved job performance.

However, the disruptive nature of technology shows no mercy. Over the last six years, there has been a significant increase in the percentage of companies reporting a skills gap. From 2016 to today, we've seen a 145% increase in the number of IT decision-makers who report a skills gap in their IT department. And it's partly self-inflicted:

- Deprioritized structured skills development
- Insufficient planning for future skills needs
- Lack of training budgets
- Not authorizing training when a budget is available
- Outdated training programs

It's 2021. We shouldn't be hearing that almost 40% of IT decision-makers report that their company doesn't provide formal training options for their staff, or that 23% who have a budget aren't authorizing learning. A culture of learning requires support from the executive suite and an executive sponsor (pro tip: they should all be executive sponsors). Otherwise, IT professionals will continue dealing with cumbersome workloads because talent retention is a problem and qualified candidates can't be found or aren't affordable. If you can't find what you're looking for, you'll have to build it.



That's what IT professionals need to do. And, it's what more and more of them are doing. They're building in-demand skills, achieving certifications, and earning robust salaries from organizations that are in critical need of their skills and providing professional development and career growth opportunities. Said another way, IT professionals are going to organizations that aren't taking their drive to learn and perform with excellence for granted.

Organizations are taking a hard look at skills gaps, and recognizing the primary way to combat the labor shortage and close deficiencies is through continuously upskilling employees. More IT decision-makers approved training requests in the last two years compared to previous years.

Teams need funding and the prioritization of learning to keep the business competitive. The risks associated with skills gaps are devastating: depleted mental health, reduced productivity, and lost revenue.

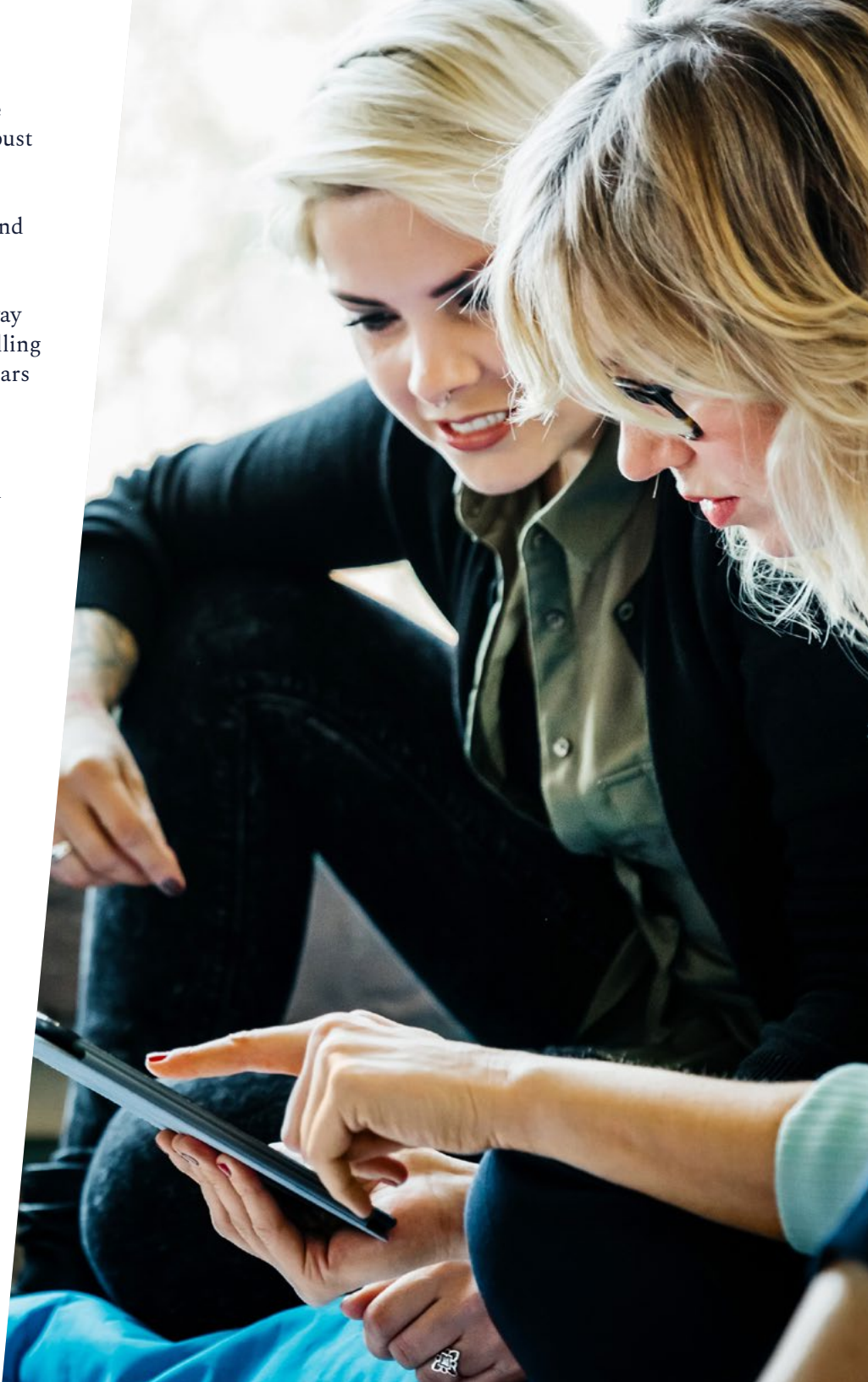
There are also ongoing external factors: COVID-19 concerns, a global economy in flux, and widespread transitions to digital. But, IT professionals are proving they are resilient.

The final takeaway from all of this is that there is a solution. Invest in people. Yes, technology plays a critical role in organizations, but sustainable competitive advantages should be less focused on "what the tech can do" and more centered on "what the tech enables your people to do." A training budget is one of the most strategic investments an organization can — and must — make. This unites the employee and the organization to identify, manage, and close skills gaps.

Once the culture-of-learning flywheel starts spinning, everyone wins:

- Employees feel valued and achieve higher salaries
- Recruiting and retaining talent is easier and more affordable
- Productivity, morale, and innovation increase
- More organizational goals are met
- And this all leads to revenue growth and a future-fit workforce

It's time to become future-fit — it's time to unleash your edge.



SURVEY METHODOLOGY

Skillsoft's Global Knowledge 2021 IT Skills and Salary Survey was conducted online from November 2020 through February 2021 using the Qualtrics XM Platform. Global Knowledge and technology companies distributed survey invitations to millions of professionals around the world, primarily in their databases. The survey was made available in web articles, online newsletters, and social media. After cleaning the data, the survey yielded 9,325 complete responses from IT decision-makers and staff. The survey was tabulated using the Qualtrics XM Platform.

THANKS TO OUR PARTNERS

Global Knowledge extends a special thank you to our partners for helping make this year's survey possible:

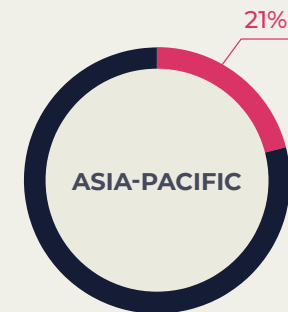
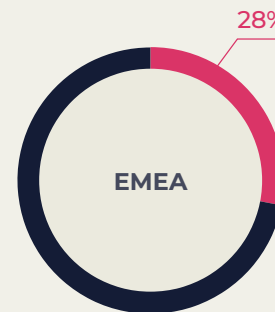
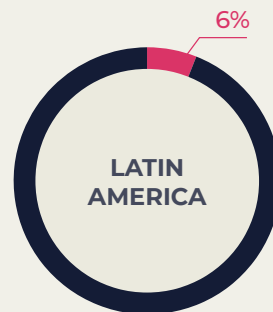
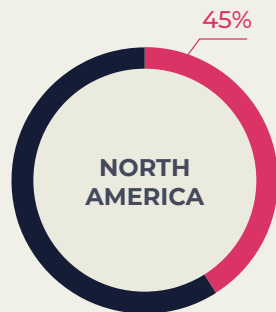


Additional support from:

- IBM
- Red Hat

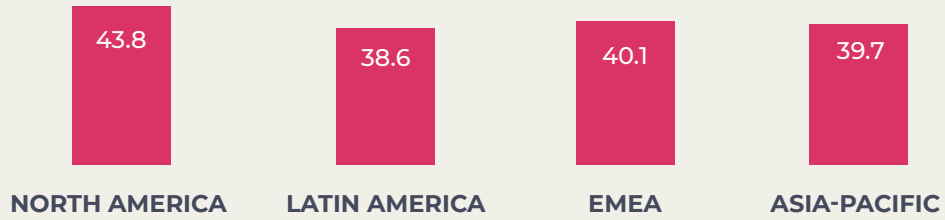
DEMOGRAPHICS

RESIDING COUNTRY OR REGION

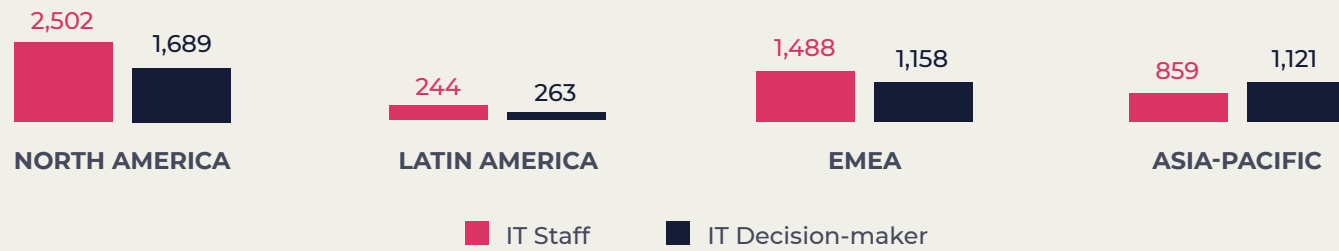


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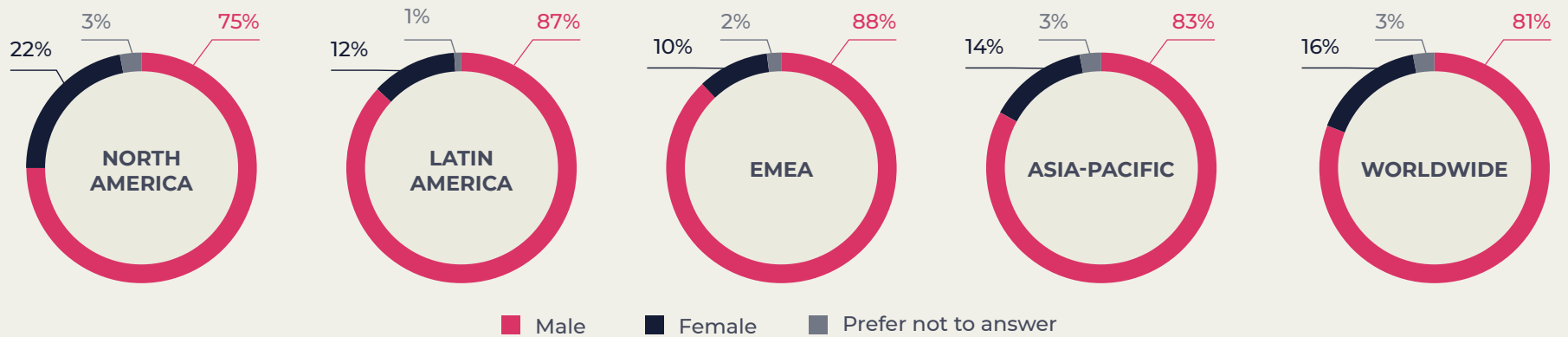
AVERAGE AGE



JOB ROLE

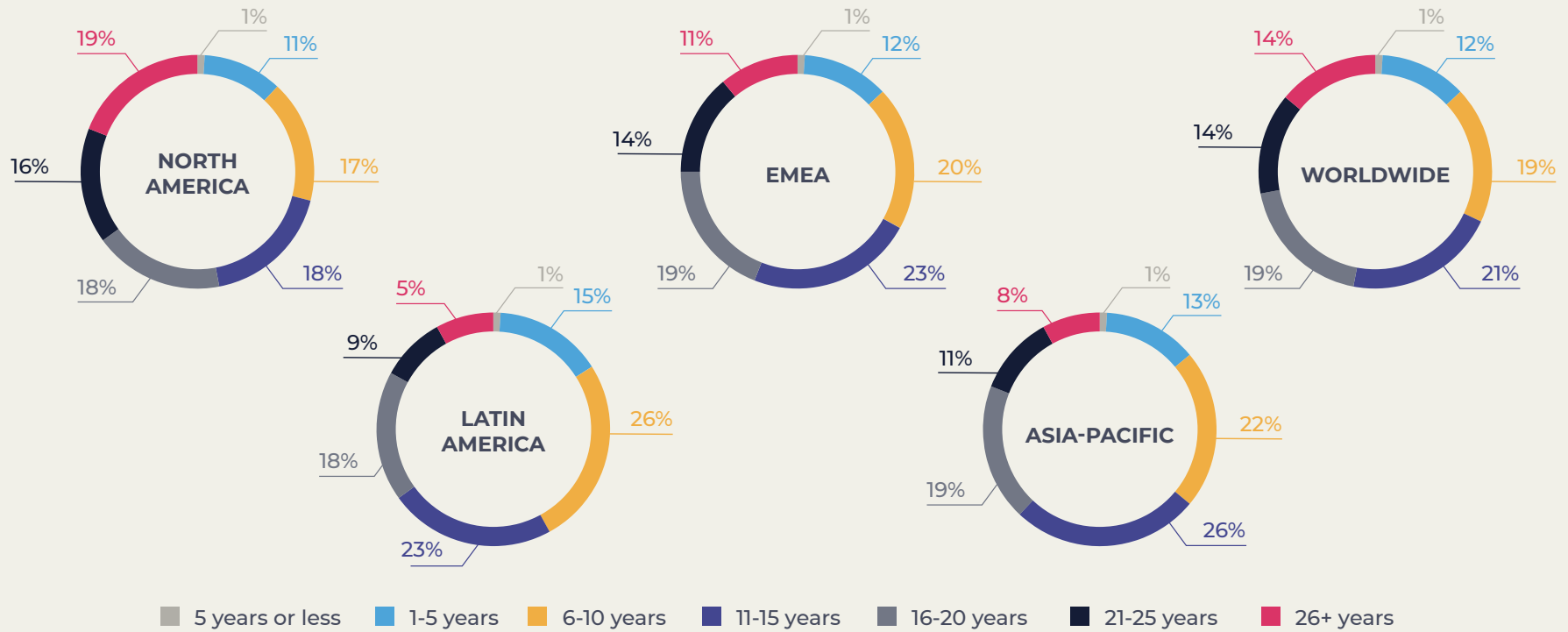


GENDER

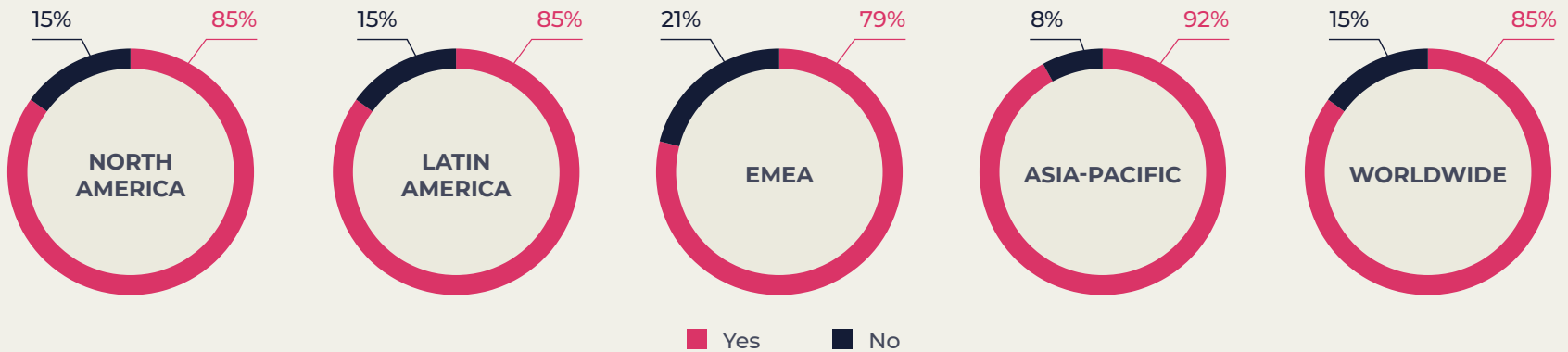


DEMOGRAPHICS

CAREER EXPERIENCE



COLLEGE DEGREE



ABOUT SKILLSOFT

Skillsoft (NYSE: SKIL) is a global leader in corporate digital learning, focused on transforming today's workforce for tomorrow's economy. The Company provides enterprise learning solutions designed to prepare organizations for the future of work, overcome critical skill gaps, drive demonstrable behavior-change, and unlock the potential in their people. Skillsoft offers a comprehensive suite of premium, original, and authorized partner content, including one of the broadest and deepest libraries of leadership & business skills, technology & developer, and compliance curricula. With access to a broad spectrum of learning options (including video, audio, books, bootcamps, live events, and practice labs), organizations can meaningfully increase learner engagement and retention. Skillsoft's offerings are delivered through Percipio, its award-winning, AI-driven, immersive learning platform purpose built to make learning easier, more accessible, and more effective.

Learn more at www.skillsoft.com.

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