IDPro 2021
Skills, Programs, & Diversity Survey

Executive Summary

This is the fourth annual skills and programs survey of the digital identity industry executed independently by IDPro; it is made possible through the ongoing support of our members. The survey helps to inform the digital identity management industry about its practitioners and their interests. This year, IDPro has expanded the survey to provide—for the first time—some insight into the diversity and inclusivity characteristics of the industry and its body of professionals.

The 2021 survey took place against the background of the ongoing global COVID-19 pandemic. As such, it provides a useful snapshot of short-term pressures within the industry, whilst also illuminating longer-term trends. Through the survey, IDPro has established that:

- COVID has had and continues to have a profound impact on our societies—work from anywhere, digital transformation, and the need for practitioners to connect.
- Directories—in the traditional sense—are becoming less important, as IDaaS and other technologies abstract away the direct visibility of user-data hierarchy. It is possible that, in time, directory management skills will become a rare (and therefore valuable) commodity.
- Identity Verification is now a significant focus for both enterprises and professionals. The technology and standards landscape is immature, and good business practices have yet to be firmly established. This creates pressure for practitioners and organizations alike.
- Early stage professionals consistently overestimate their skills, whilst experienced practitioners underestimate theirs. This impacts individual career development and presents employers with hiring, nurturing, and retention challenges.

- Diversity and inclusivity are important to professionals and enterprises alike. It is still difficult to paint an accurate picture of the diversity landscape; but better understanding will ultimately lead to better working environments, teams, products, services, and solutions.

Individual practitioners should continue to invest in networking, mentoring, vendor-neutral skills development, and professional certification opportunities; particularly in a rapidly evolving technology landscape.

Managers and leaders should consider diversity and inclusivity practices in developing well-rounded and effective teams. They should also consider adding robust, peer-reviewed professional certifications—such as the CIDPRO™—to their professional development planning and hiring criteria.

Executives and CEOs should ensure that digital identity is appropriately represented at the board level; particularly noting the crucial role that well-executed and values-driven digital identity programs play in accelerating digital transformation, improving cybersecurity posture, and mitigating business risk.

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Introducing the IDPro 2021 Skills, Programs and Diversity Survey

Findings

Hi, COVID!

COVID has had and continues to have a profound impact on our societies. The results of our 2021 survey strongly suggest that this impact is felt in the IAM industry as well—both in terms of technology trends and the needs of practitioners.

Multi-factor authentication (MFA) remained the top area of respondent experience with 75% indicating some experience with MFA. Similarly, 31% of respondents identified MFA as a top priority for enterprises over the next 18 months. This data implies that enterprises identified MFA as a key component in responding to the need to work from—or service customers—anywhere. Our 2020 survey identified the beginning of this need and the consistency in the 2021 results suggests that enterprises have not completed their MFA deployments.

Customer identity and access management (CIAM) was the second highest priority for enterprises in this year's survey with 25% of respondents identifying it as a priority. Up from number 3 in 2020, CIAM's importance to enterprise digital transformation strategies cannot be overstated. COVID pushed all organizations, public and private sector, to improve the delivery and quality of their digital services with CIAM being a cornerstone for that effort. Similarly, 21% of respondents identified CIAM as a personal priority up from just over 15% last year. An interpretation of these results is that as enterprises fund more and larger CIAM efforts, the need for CIAM skills grows, and thus opportunities for practitioners with those skills.

Another technical area in which COVID's impact can be felt is identity-as-a-service (IDaaS). 23% of respondents identified IDaaS as an enterprise priority in this year's survey putting it in third place behind CIAM and MFA. While down from number 2 in last year's survey from an enterprise perspective, IDaaS remains the number one selected priority for individuals. Opportunities for practitioners with IDaaS experience and skills appear to remain strong.

Beyond technical priorities, the impact of COVID was manifest in the needs of our practitioners; specifically, the need for peer-to-peer networking opportunities. All of us felt a deep need to connect with our families and our communities throughout the epidemic and that need extended to our peers in the industry as well. Nearly doubling in interest—up from 9% of respondents last year to 16% this year—the desire to have peer-to-peer networking opportunities almost replaced the need for vendor-neutral training materials as the second most useful thing for respondents' professional success.

Death of Directories

"Directory Services including Active Directory" has never been a popular choice as an enterprise priority or an area of individual interest in IDPro's past surveys. Slightly decreased from last year, it was tied for second to last with 4% of respondents indicating that it was an enterprise priority for the forthcoming 18 months. Similarly, it was in last place this year as an area practitioners were interested in learning about with only 4% of respondents selecting it. It was in last place in 2020 as well with 3% of respondents.

But these two consistent trends are not enough to call directories dead—particularly in this industry which has a tendency to declare heavily used things as deceased. What *does* point towards the demise of directories is the drop in practitioner experience. In 2019 and 2020 'directories' was identified as the 2nd most popular area of experience with nearly 70% of respondents indicating that they worked with directories at some point in their careers. In 2021 however, only 65% of respondents did so, moving directories to the fourth most common area of experience. It is the combined lack of three elements—practitioner experience, interest as an area to learn, and enterprise prioritization—that leads one to print an obituary for directories.

There are several interpretations one could draw with this. First, respondents to IDPro's surveys tend to have significant tenure in the industry and those respondents were more likely to have experience with directories than people entering the industry. As these people start to leave the workforce, it shouldn't be a surprise to see a drop in "legacy" areas of experience.

Second, with the previously identified growth in enterprise and individual interest in IDaaS, it is likely that the need for directory experience is declining. That is not to say that notions like hierarchical organizational structures and access control lists are no longer important, but that IDaaS products have abstracted away these unvarnished directory concepts to achieve similar goals. Said differently, a practitioner can most certainly have a successful career in identity without ever learning LDAP.

A potential corollary to this is that practitioners with directory experience may find themselves in high demand over the next few years. A declining number of practitioners with directory experience combined with the longevity of directory deployments may lead to a situation in which a fundamental piece of an enterprise's infrastructure can no longer be serviced. Though it may yet take time to eventuate, this outcome feels similar to the state of play with mainframe and COBOL expertise.

Identity Verification: When, How, and Why?

Self-sovereign, user-centric and distributed ledger (and similar) technologies are likely to form a key part of identity and credential verification solutions. A significant number of technical working groups are exploring these areas; over the past twelve months we have seen a number of real-world deployments (in particular for electronic/mobile drivers' license use-cases).

In the 2020 survey, we identified a mismatch between the individual's interest in future learning, relative to the reported priorities of organizations in these areas. Specifically, that individuals were substantially more interested in both Blockchain (and related distributed ledger technologies) and Self-Sovereign Identity technologies relative to the reported organizational priorities.

The 2021 survey data now provides three consecutive years of data to review, and we can say conclusively that this is a consistent trend. Also consistent across this period is the reported organization priority of Identity Proofing and Vetting solutions—which, for the individual practitioner, is of roughly equal weight to the underlying technologies.

The hypothesis is that organizations are interested in the business outcome—identity verification and proofing—but are less concerned about how this is enabled at the technical level. By contrast, identity professionals recognize the importance of the outcome to business success, but also appreciate that they will need to understand how to apply the various relevant technologies to any eventual solution.

Since there are likely to be multiple technical approaches, it is not surprising that practitioners continue to split their interest. Indeed, given the degree of perceived overlap between self-sovereign, blockchain, and other vetting technologies—such as verifiable credentials, which are not specifically listed as an option in the survey—it is not unreasonable to look at these three areas together. Combining just two of them would place this topic far ahead of any other area of interest for professionals.

It is evident from other general activity in the industry that the assurance of identity is a critical theme; and it is perhaps concerning that organizations have yet to realise the impact that verified identity data will have on their business nor the opportunities that may arise. Anecdotally, we believe that in most businesses, identity projects ultimately fall under the purview of the office of the CISO; the security focus is certainly evident in the pattern of reported enterprise priorities.

We anticipate seeing a growing number of professionals develop expertise in these areas during the next 2-3 years. Individual practitioners will need to continue to work to help executives understand the potential value of verified identity to the business whilst appreciating the associated risks. It is equally important to understand when and why *not* to use identity or credential verification. Industry bodies can play a significant role in supporting this effort. Within the enterprise, other business units outside of security need to begin taking an interest in what Identity can do for them, and executives should consider whether identity should have a more visible seat at the boardroom table.

Accounting for the Dunning Kruger Effect

In essence, the Dunning Kruger effect[1] describes a cognitive bias wherein a relative lack of knowledge in a particular area gives an individual an over-inflated sense of competence. Essentially: the individual thinks they know more than they really do because they haven't yet learned enough to recognize all the things they don't know.

The digital identity industry is notorious amongst practitioners for being both broad and complex. Survey responses from prior years provide clear evidence of this: amongst IDPro members, the majority take over 2 years to 'feel proficient' and a significant portion take longer than 5 years.

However, this year's data illustrates something new: non-members are significantly more likely to consider themselves proficient in fewer than 2 years of engagement in the industry.

Some of this can be written off as the natural 'newbie' confidence that tends to develop in the early stages of many careers—in other words, the Dunning Kruger effect. It is plausible that IDPro members, who are naturally more exposed to the complexities of the profession at an early stage through knowledge-sharing and peer-to-peer networking opportunities

[1] Kruger, J. and Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), pp.1121–1134.

inherent in their membership, are consequently more aware of the complexities of their profession.

Dunning Kruger posits not only that inexperienced individuals overestimate weak skills, but also that highly experienced individuals underestimate strong skills. The IDPro Survey consistently shows a high percentage of individuals reporting that they 'do not feel proficient' even after 15+ years in the profession. In the 2021 survey data we also see a relatively higher proportion of IDPro members (relative to non-members) in this reporting category. Perhaps those who have worked in the industry for a long time and who are routinely exposed to other highly experienced professionals—by virtue of their membership in the industry body—are consequently more likely to undervalue their considerable knowledge.

We have previously suspected the existence of this effect amongst digital identity professionals. Since the inception of this annual survey we have seen a consistent need from professionals for more vendor-neutral technical training, and for mentoring and peer-group knowledge-sharing opportunities. Accordingly, IDPro has been developing materials and programs to help professionals learn and demonstrate knowledge of critical skills along with methods for employers to train and validate the knowledge of candidates and team-members.

Even so, this year we have also noticed a significant increase in the demand for professional certification. Indeed, amongst non-member respondents, certification is tied with peer-to-peer networking as the third highest need to help ensure professional success. Amongst IDPro members, who are more likely to be aware that IDPro has been developing just such a certification program, this was the fourth highest need, though still significantly elevated relative to previous years. IDPro announced the availability of the first independent digital identity professional certification, CIDPRO™, in June 2021, after this year's survey closed to responses; therefore, the announcement could not have affected response rates. The availability of reputable and reliable certification will help professionals demonstrate their competence both to themselves and to others. As a result, in time, we would expect to see a softening of the Dunning-Kruger effect identified in responses.

These findings suggest that employers and hiring managers should be particularly mindful in supporting early career-stage professionals with vendor-neutral training and certification opportunities to ensure that overconfidence does not lead to underperformance. Individual professionals in the early stages of their careers should seek guidance and mentorship from experienced professionals to supplement vendor-neutral training and certification. Professionals with many years of experience would benefit from sharing their knowledge with others—through speaking engagements or contributions to industry publications, for example—to help them realise the true value of their expertise. Finally, peer networking may help less experienced professionals more rapidly identify those areas where they lack knowledge. Participation in mentoring programs can help experienced professionals to better recognise the value of their deep expertise.

Diversity Matters

Research repeatedly demonstrates that diverse and inclusive teams perform better—and that individuals in those teams prosper as a result. Given that digital identity is foundational to our contemporary experience, it is particularly important that our industry reflects our communities, and recognises and actively fosters the unique value and contribution of every individual practitioner.

The first step in any development journey is to understand the current state. To that end, this year's survey included a set of base-level diversity and inclusivity questions. This question set was optional and, as a result, responses rates were lower for this section than for the full survey. It is also worth recalling that the North American region is over-represented in the survey sample which is likely to have some impact on the responses in this section. Nevertheless, sufficient responses were recorded to allow some initial conclusions to be drawn.

A clear majority of respondents (nearly 80%) believe that their employer is dedicated to improving inclusivity and diversity. IDPro member responses are relatively much stronger in their conviction, perhaps as a result of a numerical sample bias: a significant number of IDPro members work at large multinational vendors such as Microsoft, Salesforce and AWS, all of whom have well-established inclusivity programs. This hypothesis is supported when we consider that not a single member's response fundamentally disagreed that their employer hires from diverse backgrounds. The responses from non-members were more mixed.

Nevertheless, it is heartening to see clear indicators that businesses are taking this issue seriously; as are individual practitioners. Again, a clear majority indicate that inclusivity is a significant—if not the single most significant—personal priority.

The survey also attempted to capture a sense of the ethnic diversity across the industry. This is extremely difficult to do on a global basis. Unsurprisingly, we saw a much higher skip rate for this single question.

Individuals identifying as male significantly outweigh those identifying as female; with a statistically insignificant percentage identifying outside of those two categories. We see a similar pattern in respondents' reported sexuality with a clear majority identifying as heterosexual or straight.

What conclusions, then, can we draw from this first attempt to capture the state of diversity and inclusivity in the digital identity industry? Large enterprises are likely to be more able to affect change—and seem to be having some success. Smaller organizations may be able to learn lessons from these multinationals, and individual hiring managers can clearly have an impact.

It is also clear that there is more work to be done. Industry and advocacy associations must continue to provide insight and support. Individual practitioners and the organizations they work for must continue working to ensure that our industry appropriately reflects the audiences it ultimately serves.

Additional Observations

Beyond the five key learnings described above, this year's survey responses also reveal several other important points.

Supporting the Evolution of Work Patterns

As companies transitioned to a remote work environment, concerns around security, authentication, and API protections came into sharp focus. Enterprises were all forced to take a fresh approach to ensuring that employee and client information and access was protected across a variety of working scenarios and situations. As we move toward a post-pandemic environment, employers are beginning to evaluate optimal and novel solutions in response to evolving employee and customer needs. We anticipate that this will be reflected in wider variance between practitioner skills and interests, and enterprise focus.

"The Big 3": Consistent Technical and Non-Technical Skills

With four years of data to analyse, we can now begin teasing out longer-term trends and consistencies. It is notable that the top three technical and non-technical skills have remained the same since the inception of the survey.

Identity professionals are continually challenged to adapt to their environments and to provide unique solutions utilizing existing, cross-platform tools to meet their employers' needs. It is no surprise that *Lateral Thinking and Problem Solving*, *Adaptability*, and *Ability to Work in a Team* are consistently the top three non-technical skills cited by practitioners, although the order varies year over year in response to context. Employers should consider these traits during the hiring process, and should also prioritize the need to support, develop, and recognise these skills in team members.

From a technical perspective, the equivalent skills are *Systems Architecture*, *Cybersecurity,* and *Programming*. To some extent this reflects the complexity of the modern IAM marketplace. Most deployments require a combination of multiple products and solutions; in some cases enhanced or extended with custom development. In today's cloud-first environment, many deployments are also cross-domain, introducing further complexity. In many organizations, IAM is still embedded within the cybersecurity group, often ultimately reporting to the CISO. We anticipate that this may change over the coming years as executives develop a better understanding of how digital identity enables digital transformation and drives improved business outcomes.

Diversity and Inclusivity: a Beginning

As noted earlier, the new Diversity questions were made optional (as well as being anonymous, in line with the rest of the survey), and the overall response rate for this section was lower. We recognise that this is likely to have introduced bias to the responses: at the least, we can posit that only those who have an interest in Diversity and Inclusivity responded. Further, it is likely that the majority of respondents are positively inclined towards engendering change; although, not all. We did see a very small but highly vocal number of responses expounding highly negative perceptions of these issues.

Several other biases are apparent from the data: collectively, that the majority of respondents to this section might best be described as white, heterosexual males, working in large corporations. This will naturally have an effect on how truly representative the data are. Further, we should note that aggregate survey responses can not and should not be extrapolated to individual experience. For instance, although the survey data indicate that a majority of respondents feel like they 'belong' at their company, this does not mean that any given individual does; nor does it suggest that this is likely to be true across the industry generally. Said differently, if a notable majority of respondents identified as heterosexual, male, and white, and the majority are reporting from North America and Northern Europe, then it should not be surprising that those same respondents are more likely to feel a sense of belonging at their place of employement.

Finally, we note that several questions are difficult both to ask and to interpret in any meaningful way on a global basis, because individual context is so important. For example: it is essentially impossible to ask globally valid ethnicity questions, because ethnicity description and experience is inconsistent on a global basis. For example: an individual describing themselves as 'white british' might consider themselves to be in a 'majority' ethnic group if resident in the UK; a minority group if resident in Japan; and could give either response if resident in Norway (where the majority population is likely be described as 'white', but not 'british').

In summary, this is a first attempt to generate a snapshot of attitudes and experiences across the sector and as such, it does provide some useful initial insight. It is also clear that future surveys will need to be refined and extended in order to sharpen the focus of the diversity and inclusivity picture.

Methodology

The 2021 IDPro Skills, Programs and Diversity Survey was conducted online. Responses were solicited from IDPro members and from non-members via several public channels including Twitter, LinkedIn, and the IDPro website. The Survey questions were identical for both groups but responses were tagged to allow for comparison between them. Respondents self-selected to participate.

The Survey sets out to get a sense of the size, scale, and training or educational needs of the industry. This objective informs the question selection. The Survey is designed to be quick and easy to take, in order to reduce as many barriers to participating as possible. Where appropriate, questions and responses are consistent year over year to allow for trend analysis. Prior years survey reports and data can be found on the IDPro website: the 2020 report and the 2019 report. This survey is made possible by the generous support of our members.

Tools

IDPro used SurveyMonkey to execute this anonymous survey, and a combination of SurveyMonkey, Microsoft Excel and Google Sheets to analyze the data.

Response Rates

IDPro Member Responses	Non-member (public) responses
89 from a total of ~800 members (both individual and institutional[2])	159

The total response rate for the 2021 survey was slightly higher than 2020. The 2021 survey attracted a lower number of member responses than 2020 but significantly more responses from non-members (nearly a 60% year over year increase). This may mean that results are, overall, more representative of the industry as a whole.

[2] IDPro membership consists of individual practitioners and sponsoring organizations. Individuals whose participation in IDPro comes by virtue of their employment at a sponsoring organization are referred to as ‘institutional’ members. At the time of the survey, IDPro had ~200 individual members and ~30 institutional members; the latter drawn from ~600 sponsoring organizations.

Survey Questions and Results

Demographics

The questions in this section examined the practitioner's years of experience, their location, and information about their employer.

Years in the Identity Industry

Survey Question

How many years have you worked in the identity industry or directly with identity technologies and systems?

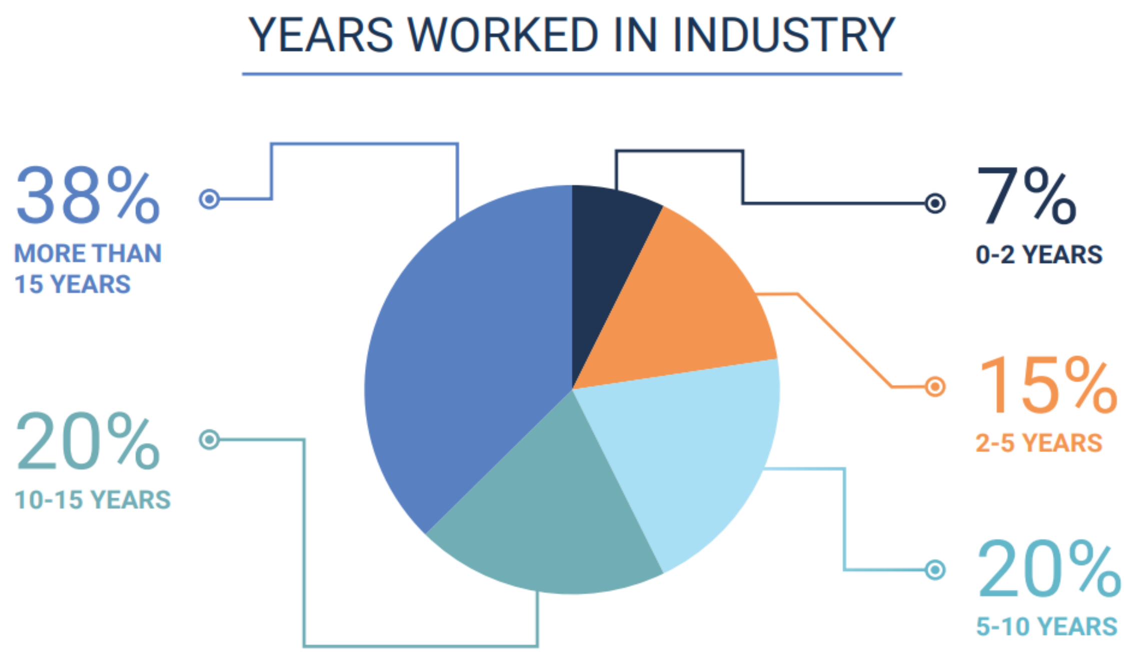
Potential Responses (select one)

- More than 15 years
- 10–15 years
- 5–10 years
- 2–5 years
- 0–2 years

Question Commentary

This question provides a sense of the depth of experience of respondents and allows for segmentation of some of the other responses. Duration brackets are consistent across survey years, allowing for clear comparison.

Responses and Observations



Survey participants continue to skew towards practitioners' longer tenure, with the majority indicating more than 5 years in the industry. This reinforces previous years' perspective that there is a great deal of opportunity for the mentoring of newer practitioners. The nearly 40% of industry professionals with more than 15 years of experience suggests that there is a great deal of legacy experience that can be tapped and those individuals should be encouraged to actively participate in industry events, materials development, and engagement opportunities with their less experienced counterparts.

Location

Survey Question

In which geographic region are you based?

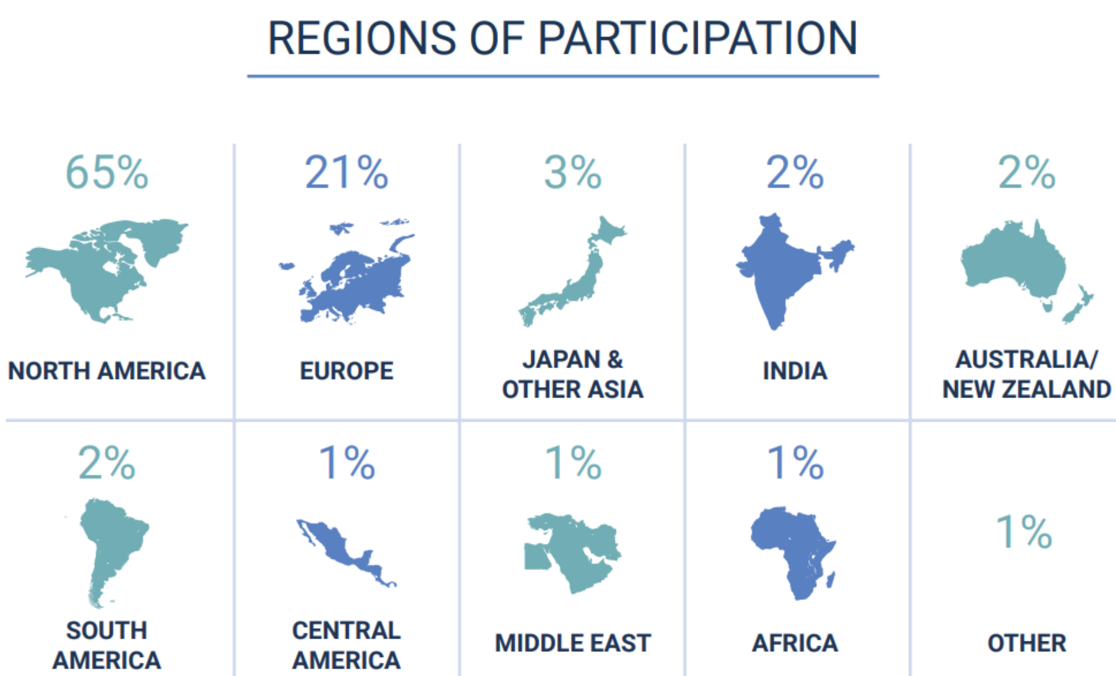
Potential Response (select one)

- Africa
- Australia and New Zealand
- Central America
- Europe
- India
- Japan
- Middle East
- North America

- Other (please specify)
- Other Asia
- South America

Question Commentary
A selection of high-level geographies was provided for respondents to select from (e.g. North America, Europe, etc.) to better form a picture of how responses might be skewed regionally and to allow for segmentation of other responses. Regions are consistent across survey years, allowing for comparison.

Responses and Observations



As international survey participation increases, we notice a slight decrease in respondents from North America in tandem with growth in Europe and across the APAC region. Perhaps the pandemic—as it forced enterprises to shift employees to remote, online environments—encouraged this uptick in global response. However, our previous observation still stands: *the industry as a whole must continue to consider how it can foster global participation and the exchange of ideas.*

Industry

Survey Question

In what industry do you work?

Potential Response (select one)

- Aerospace and Defense
- Automotive
- Cloud Computing
- Consulting and Implementation Services (added for 2019)
- Consumer Packaged Goods
- Enterprise Software (added for 2019)
- Financial Services
- Healthcare and Life Sciences
- Higher Education and Research
- Insurance (added for 2019)
- K-12 Education
- Manufacturing
- Media and Publishing
- Other (please specify)
- Public Sector
- Retail
- Telecommunications

Question Commentary

The list of categories—including a free text ‘other’ option—has been kept consistent since 2019 allowing for year over year comparison of sectoral representation.

Responses and Observations

IN WHAT INDUSTRY DO YOU WORK?

- 17% ENTERPRISE SOFTWARE
- 16% CONSULTING AND IMPLEMENTATION
- 14% CLOUD COMPUTING
- 13% FINANCIAL SERVICES
- 7% HIGHER EDUCATION AND RESEARCH
- 7% HEALTHCARE AND LIFE SCIENCES
- 6% PUBLIC SECTOR
- 5% TELECOMMUNICATIONS

Contrary to previous years, there was a notable decrease from last year's leading category—*Consulting*—which was overtaken by *Enterprise Software*. *Cloud Computing* also had a slight increase while *Financial* took a dip. *Higher Education and Research* and *Public Sector* both had notable increases as *Telecommunications* bumped both *Automotive* and *Media/Publishing* off the previous leaders list.

Employer Size

Survey Question

How many employees does your employer have?

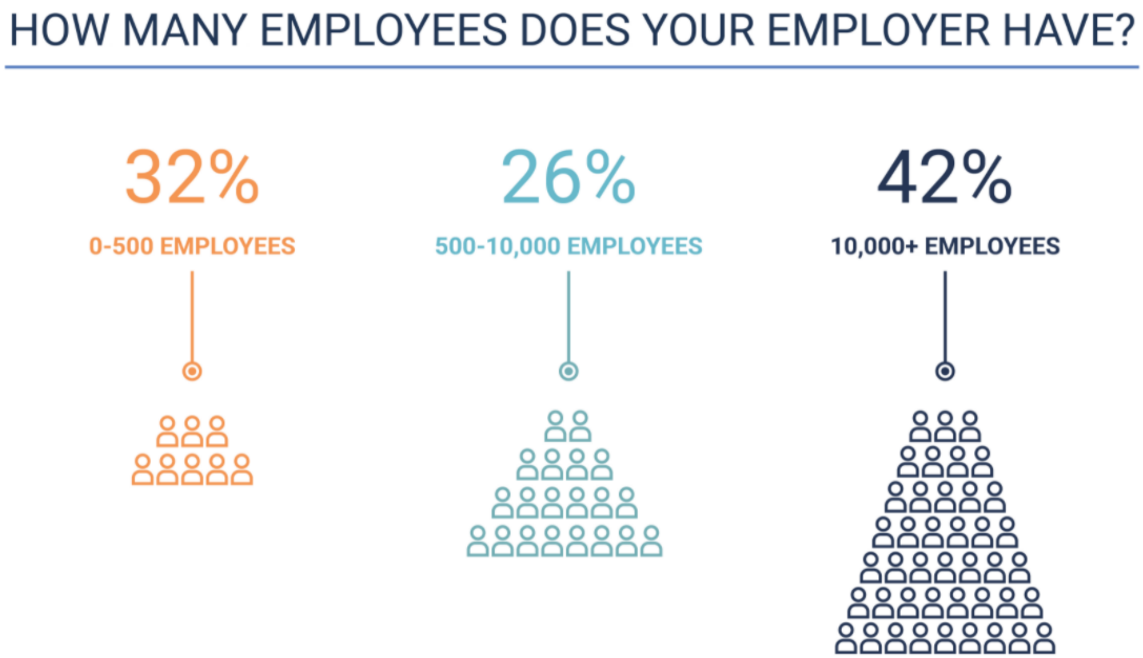
Potential Response (select one)

- 0–25 employees
- 26–50 employees
- 51–100 employees
- 101–500 employees
- 501–1000 employees
- 1001–10,000 employees
- More than 10,000 employees

Question Commentary

The available bracket sizes options have been kept consistent since the initial Survey in 2018.

Responses and Observations



This year's survey saw a significant jump in participation within companies that have 501-10,000 total employees—doubling from 13% in 2020 to 26%. Companies with 0-500 employees had a decrease from 41% last year to 32% while those in the 10,000+ category remained roughly the same. These numbers represent an ongoing commitment by employers to supporting staff within the industry but they should consider additional ways for providing development and skill set growth opportunities—including participation in industry organizations.

Experience

Areas of Experience

Survey Question

Areas of identity in which you have current or previous experience.

Potential Responses (Select all that apply)

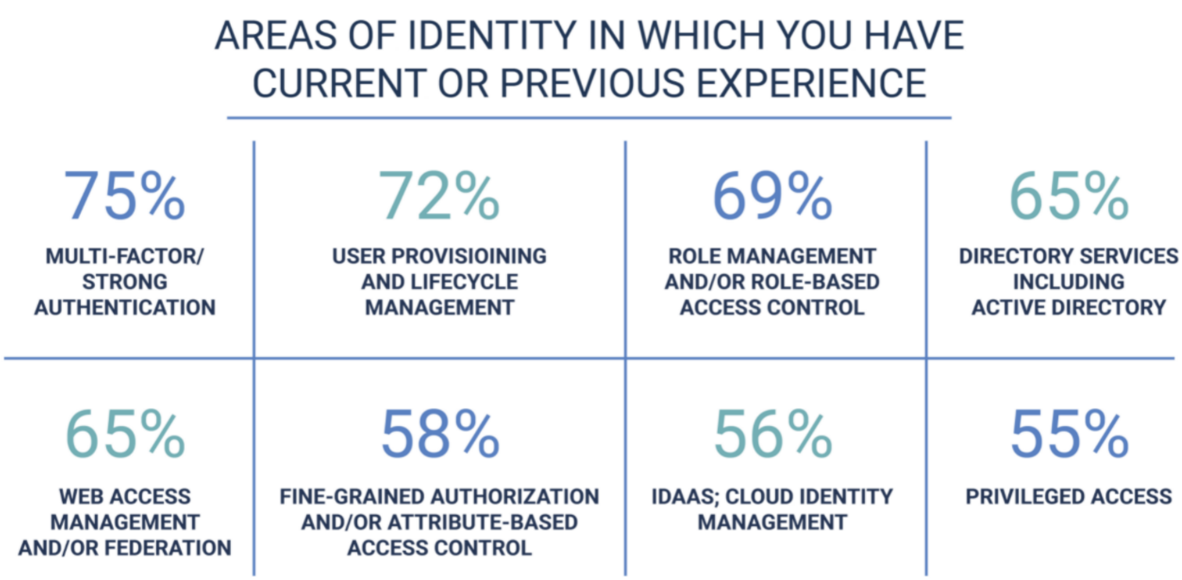
- Access Certification Identity Standards Development
- API Protection Mobile Identity Management
- Blockchain (or similar) Identity
- Consortia-based Identity
- Contextual/Risk-based Authentication

- Customer/Citizen Identity and Access Management
- Directory Services including Active Directory
- Fine-grained Authorization and/or Attribute-based Access Control
- IDaaS; Cloud Identity Management
- Identity for IoT and Connected Devices
- Multi-factor/Strong Authentication
- Privacy-related Applications of Identity
- Privileged Access
- Role Management and/or Role-based Access Control
- Security Applications of Identity
- Self-sovereign or user-centric identity
- User provisioning and Lifecycle Management
- Web Access Management and/or Federation Identity Proofing/Vetting
- Other

Question Commentary

The list of potential responses is unchanged from 2019 for consistent comparison.

Responses and Observations



The top responses for this year shifted fairly significantly from previous years. While *Multi-Factor/Strong Authentication* remained in the number one spot, *User Provisioning and Lifecycle Management* moved into second place, pushing *Directory Services Including Active Directory* and *Web Access Management and/or Federation* jointly to third.

Years to Proficiency

Survey Question

How long did it take you to feel that you're a proficient identity professional?

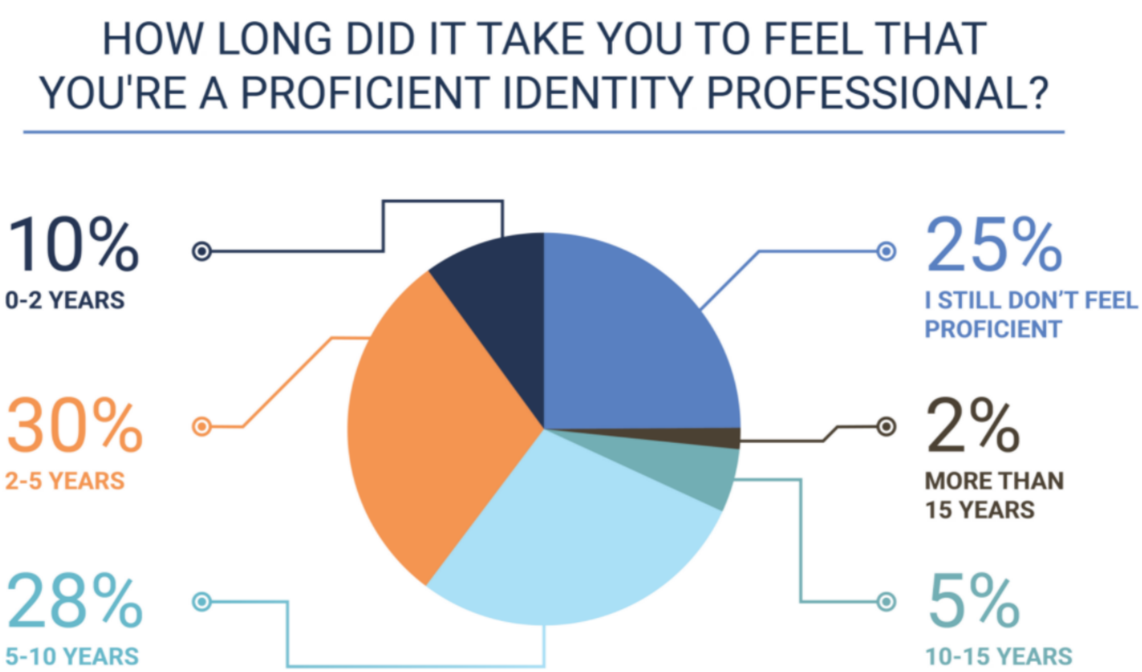
Potential Response

- 0 to 2 years
- 2–5 years
- 5–10 years
- 10–15 years
- More than 15 years
- I still don't feel proficient

Question Commentary

This question is necessarily and deliberately subjective with the time brackets unchanged from 2019 allowing for year-over-year comparison.

Responses and Observations



Consistently, most participants have indicated that they begin feeling proficient after working for between 2 and 10 years in the industry. However, we continue to have a significant number of respondents who, in spite of significant experience, do not feel proficient.

Skills

Questions in this section explore which technical and non-technical skills practitioners rely upon to be effective as well as things they wish they had to make them even more successful.

Technical Skills

Survey Question

Which of the following would you consider to be the top 3 technical skills that have served you well in your career with identity? (Choose no more than 3 skills.)

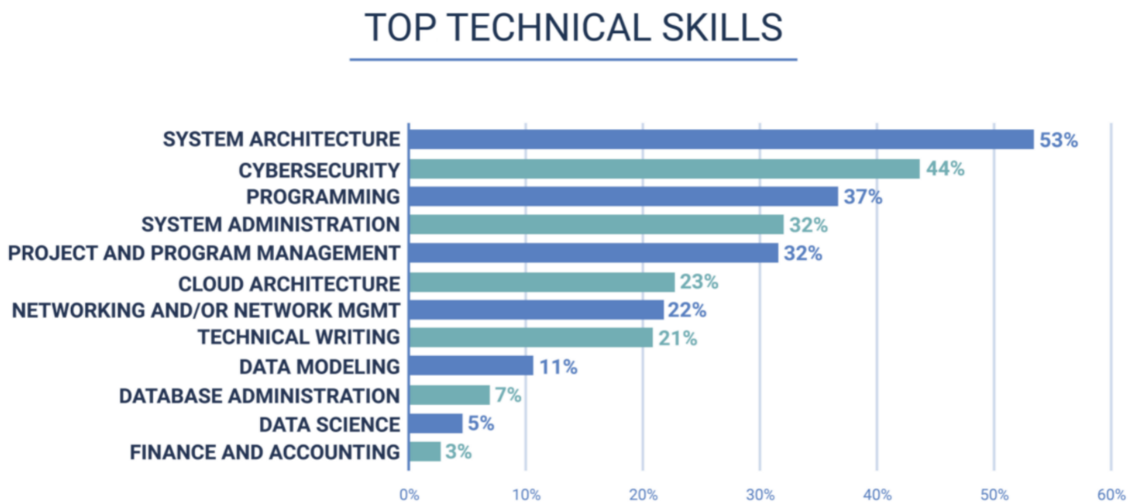
Potential Responses

- Cloud Architecture
- Cybersecurity including threat modeling and cloud security
- Data Modelling
- Data Science
- Database Administration
- Finance and accounting
- Networking and/or Network Management
- Other (please specify)
- Programming
- Project and Program Management
- System Administration
- System Architecture
- Technical Writing

Question Commentary

The list of response options reflects areas typical for individuals working within the identity industry and is unchanged from 2019.

Responses and Observations



The top 5 technical skills remain the same. However, Cybersecurity had a significant increase over Programming from the 2020 survey in which they were tied at 35%. System Administration and Project Management maintained their tied status but did increase from 27% to 32%.

Non-technical skills

Survey Question

Which of the following would you consider to be the top 3 non-technical skills that have served you well in your career? (Choose no more than 3 skills.)

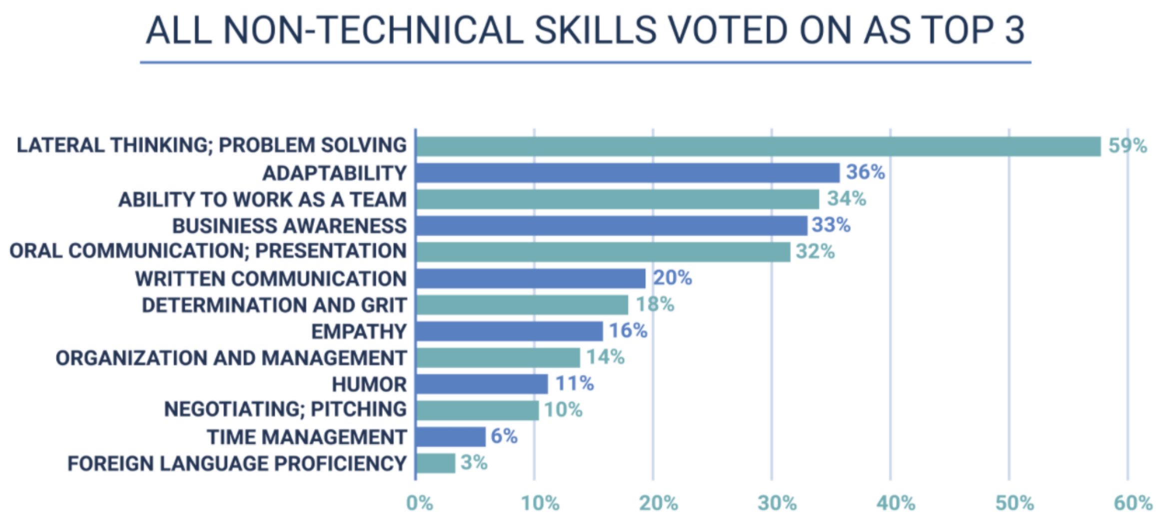
Potential Responses

- Ability to work in a team
- Adaptability (added for 2019)
- Business Awareness
- Determination and grit
- Empathy
- Foreign language proficiency
- Humor
- Lateral thinking and problem solving
- Negotiating; pitching
- Oral communication and presentation
- Organization and management
- Other (please specify)
- Time Management
- Written communication

Question Commentary

The list of responses is unchanged from 2019 and takes a more in-depth look at which intangible skills survey participants feel are important to their success.

Responses and Observations



The top 5 responses remain unchanged from the 2019 survey results though each category experienced an overall increase in percentage.

Survey Question

How have these non-technical skills served you in your career?

Question Commentary

This was an open text question to garner additional insight into the reasons why respondents felt their non-technical skills were important. Responses to this question provide additional context to inform the analysis of other data.

If You Could Have One Thing...

Survey Question

If you could have had one of the following, which do you think would have been most useful to you to ensure your success.

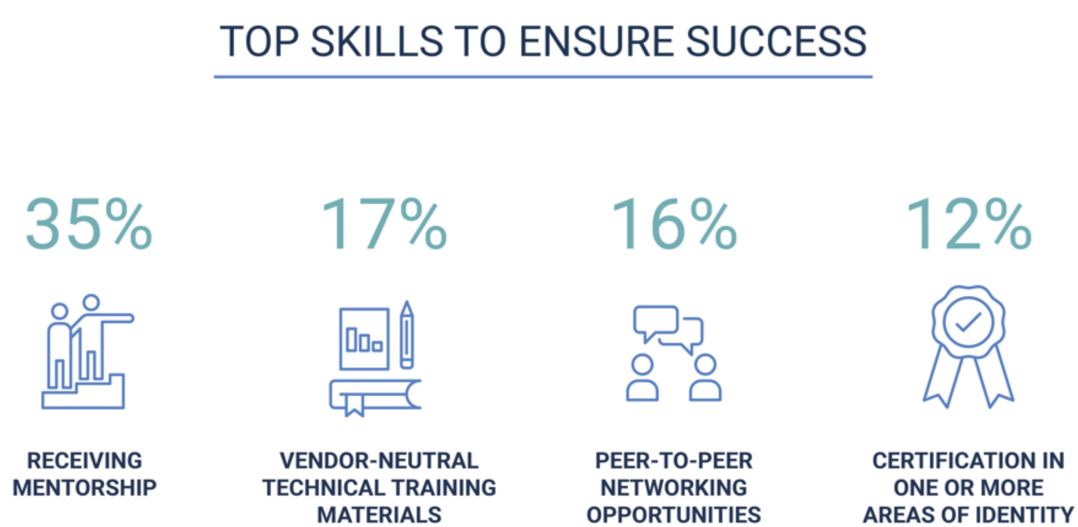
Potential Response

- Certification in one or more areas of identity
- Opportunities to blog or otherwise contribute to an industry newsletter or publication
- Opportunities to present at an industry meet-up or conference
- Opportunities to teach other identity professionals
- Other (please specify)
- Peer to peer networking opportunities
- Providing mentorship
- Receiving mentorship
- Vendor-neutral technical training materials

Question Commentary

Response options have remained unchanged since the introduction of the survey in 2018.

Responses and Observations



Mentoring and training continue to be viewed as essential to ensuring success within the identity industry with Peer-to-Peer Networking Opportunities also remaining in a top position. However, in an exciting turn of events, this year saw Certification in One or More Areas of Identity join the ranks as a top priority for ensuring success. IDPro's CIDPRO™ program was launched this year, providing the first ever opportunity for global industry certification. The recognition of the need for employers and practitioners to have a system for establishing a baseline for qualified skills has trumped previous years' responses that event attendance is necessary. This is likely due to the onset of COVID and the shift to virtual events versus in-person activities but also represents the importance of a program such as CIDPRO.

Priorities

This section of the Survey explores what respondents consider to be their employer's top identity-related priorities for the next 18th months, as well as their own individual areas of interest. This helps to elucidate the differences between personal and corporate priorities and explores any potential gaps in skill sets, training, development and staffing, at the trend level.

Enterprise Priorities

Survey Question

What are the top identity-related priorities for your organization (or your customers' organizations) in the next 18 months? (Choose no more than 3)

Potential Responses

- Access Certification
- API Protection
- Blockchain (or similar) Identity
- Consortia-based Identity
- Contextual/Risk-based Authentication
- Customer/Citizen Identity and Access Management
- Directory Services including Active Directory
- Fine-grained Authorization and/or Attribute-based Access Control
- IDaaS; Cloud Identity Management
- Identity for IoT and Connected Devices
- Identity Proofing/Vetting
- Identity Standards Development
- Mobile Identity Management
- Multi-factor/Strong Authentication
- Other (please specify)
- Privacy-related Applications of Identity
- Privileged Access
- Role Management and/or Role-based Access Control
- Security Applications of Identity
- Self-sovereign or user-centric identity
- User provisioning and Lifecycle Management
- Web Access Management and/or Federation

Question Commentary

The list of potential responses is unchanged since the introduction of this section in 2019. It is important to note that responses given here are from the individual practitioners' perspective and so may not directly align with the actual organization priorities but are intended to provide insight into what the practitioner believes is of importance to their employer.

Responses and Observations

WHAT ARE THE TOP IDENTITY-RELATED PRIORITIES FOR YOUR ORGANIZATION (or your customers' organizations) IN THE NEXT 18 MONTHS?

31% MULTI-FACTOR/ STRONG AUTHENTICATION

25% CUSTOMER/CITIZEN IDENTITY AND ACCESS MGMT

23% IDAAS; CLOUD IDENTITY MGMT

21% PRIVILEGED ACCESS

21% API PROTECTION

18% USER PROVISIONING AND LIFECYCLE MGMT

18% FINE-GRAINED AUTHORIZATION AND/OR ATTRIBUTE-BASED ACCESS CONTROL

16% CONTEXTUAL/ RISK-BASED AUTHENTICATION

Multi-Factor/Strong Authentication remains in the top position while Customer/Citizen Identity and Access Management, IDAAS; Cloud Identity Management, Privileged Access, and API Protection gained over the last two years' results, moving to the forefront of what practitioners perceive as identity-related priorities for their employers and customers.

Individual Priorities

Survey Question

As an individual practitioner, what are the top identity-related areas that you are interested in learning about in the next 18 months? (Choose no more than 3)

Potential Responses

- Access Certification
- API Protection
- Becoming a mentor
- Blockchain (or similar) Identity
- Consortia-based Identity
- Contextual/Risk-based Authentication
- Customer/Citizen Identity and Access Management
- Directory Services including Active Directory
- Fine-grained Authorization and/or Attribute-based Access Control
- IDaaS; Cloud Identity Management
- Identity for IoT and Connected Devices
- Identity Proofing/Vetting
- Identity Standards Development
- Mobile Identity Management
- Multi-factor/Strong Authentication
- Privacy-related Applications of Identity
- Privileged Access
- Receiving mentorship
- Role Management and/or Role-based Access Control
- Security Applications of Identity
- Self-sovereign or user-centric identity
- User provisioning and Lifecycle Management
- Web Access Management and/or Federation

Question Commentary

The list of potential responses is unchanged from 2019 allowing for more meaningful comparison and analysis of the 'enterprise' vs. 'individual' priorities.

Responses and Observations

TOP IDENTITY-RELATED AREAS THAT YOU ARE INTERESTED IN LEARNING ABOUT IN THE NEXT 18 MONTHS

29% IDAAS; CLOUD IDENTITY MGMT	22% IDENTITY FOR IOT AND CONNECTED DEVICES
28% SELF-SOVEREIGN OR USER-CENTRIC IDENTITY	21% BLOCKCHAIN (OR SIMILAR) IDENTITY
24% IDENTITY STANDARDS DEVELOPMENT	21% CUSTOMER/CITIZEN IDENTITY AND ACCESS MGMT
22% IDENTITY PROOFING/VETTING	21% SECURITY APPLICATIONS OF IDENTITY

IDAAS; Cloud Identity Management and *Self-Sovereign or User-Centric Identity* remain steady from last year with the most significant shift seen as *Customer/Citizen Identity and Access Management* and *Security Applications of Identity* experienced sharp increases as skills practitioners are most interested in developing over the next 18 months.

Diversity

The Diversity section of the survey is new for 2021. It is now well understood that diverse and inclusive teams perform better work and make better decisions. For the digital identity industry specifically, however, there is the added consideration that the solutions we build must be fit for purpose for a globally representative audience. This requires a diverse body of professionals.

Until now, there has been no sector-specific data either on the overall composition of the body of identity professionals, nor on the level of proactive attention given to this area by key employers in the sector. This section of the survey is a first attempt to provide some insight.

Whilst a good first step, it is also right to recognise that it is necessarily incomplete. These questions tend to be highly personal, and—for many—emotive and sensitive. This section of the survey was made entirely optional as a result. Although the survey was carried out entirely anonymously, we still saw a noticeably lower response rate in this section relative to the rest of the survey. Further, specific questions within the section had an even higher skip rate. Beyond that, it is difficult to carry out such a survey meaningfully on a global basis. Ethnicity questions, in particular, are highly influenced by geographical context.

Some questions—including a general question about Ethnicity—were asked as free-text questions, either because there was no other sensible way to solicit data, or to provide opportunity for opinion and feedback gathering. It is worth noting that, disappointingly though perhaps not surprisingly, these free-text fields did elicit a small amount of highly negative commentary. It is important for the industry as a whole to continue to communicate the value and relevance of supporting a diverse and inclusive approach to digital identity.

Setting those issues aside, the initial engagement and response from both members and non-members alike is sufficient to allow us to paint an initial picture and start to provide insight and recommendations to the industry as a whole. We expect to refine this part of the survey in future years, taking responses and learning from this year into account.

Workplace Diversity and Inclusion

Survey Question

My organization is dedicated to diversity and inclusiveness. (Select one)

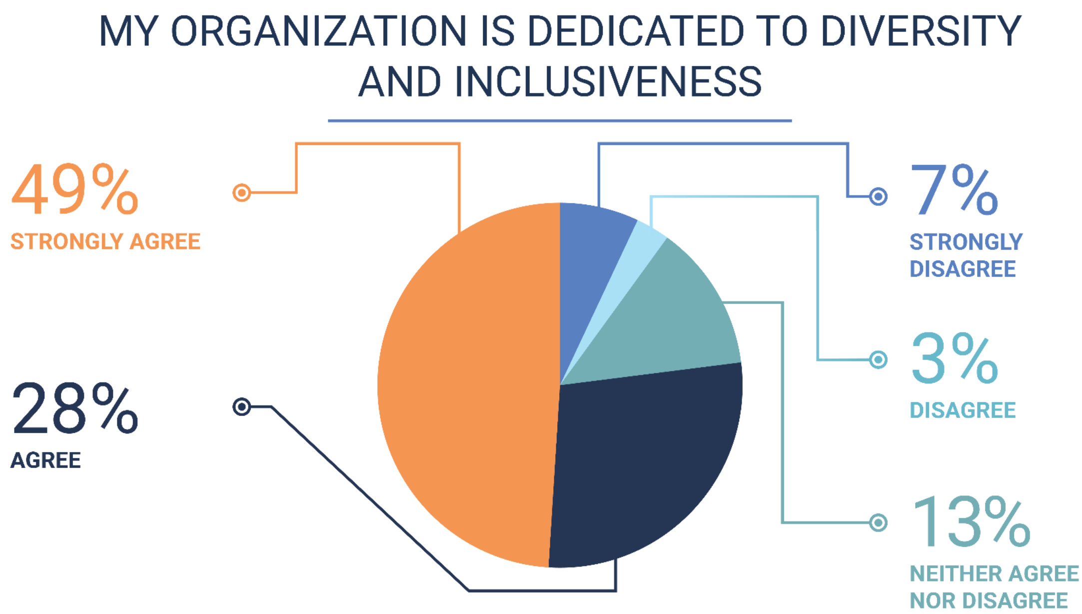
Potential Responses

- Strongly Disagree
- Disagree
- Neutral/Neither agree or disagree
- Agree
- Strongly Agree

Question Commentary

Building diverse and inclusive teams requires leadership and support throughout the organization, driven as a priority by senior leadership. This question explores how well established this endeavour is across the industry.

Responses and Observations



A significant majority of survey participants agreed or strongly agreed that their organization is dedicated to diversity and inclusiveness. On the face of it, this is good news. Note, however, that responses will be skewed by the percentage of IDPro members who work at large software companies known to have highly active diversity programs; and by the relatively small representation of respondents from outside of North America and Europe.

Diversity and Hiring

Survey Question

My company hires people from diverse backgrounds. (Select one)

Potential Responses

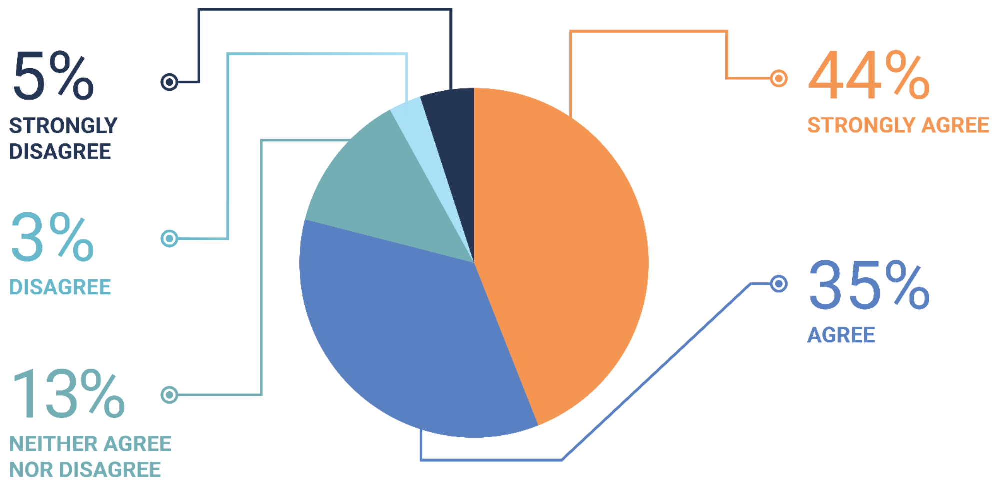
- Strongly Disagree
- Disagree
- Neutral/Neither agree or disagree
- Agree
- Strongly Agree

Question Commentary

This question seeks to establish how successful organizations are in fostering a diverse and inclusive workplace.

Responses and Observations

MY COMPANY HIRES PEOPLE FROM DIVERSE BACKGROUNDS.



Again, *prima facie* a sense that the 'diversity health' or organizations in the identity sector is good. As with the previous question, however, it is likely that the sample size and scope is an influence on the responses.

Sense of Belonging

Survey Question

I feel like I belong at my company.

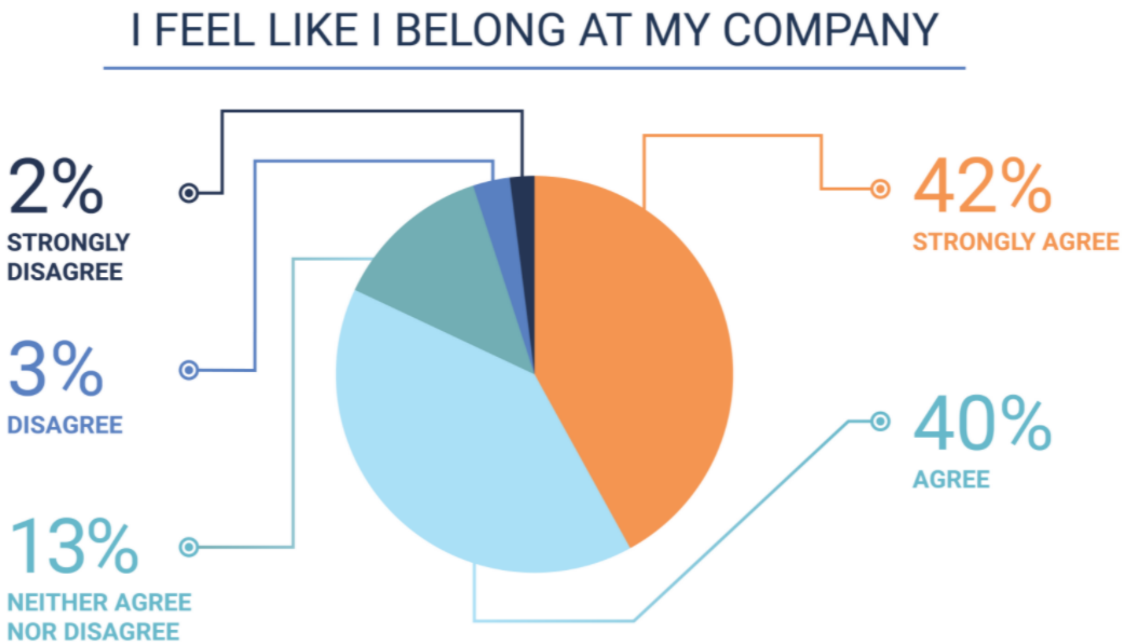
Potential Responses

- Strongly Disagree
- Disagree
- Neutral/Neither agree or disagree
- Agree
- Strongly Agree

Question Commentary

This question provides a baseline insight into the individual's own perception of inclusion within their organization.

Responses and Observations



A healthy majority of respondents in the survey indicate that they feel well settled within the organization they work. As with prior questions in this section, it is likely that sample size and scope have an impact on the responses. It is nonetheless heartening to see only a small percentage feeling fundamentally at odds with their place of work.

Diversity Priority

Survey Question

How much of a priority is diversity to you, yourself?

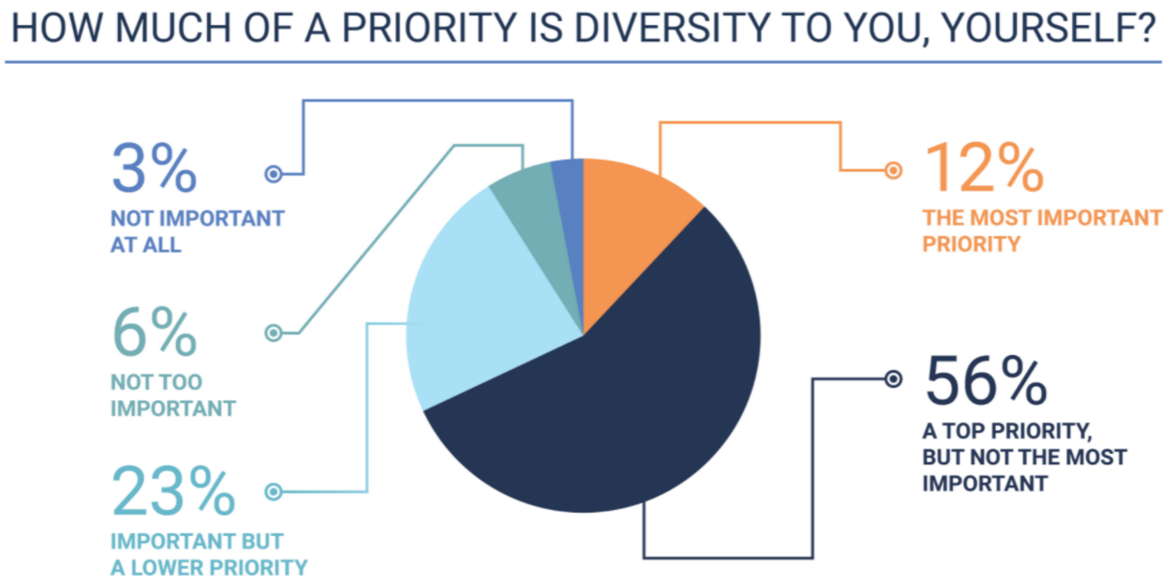
Potential Responses

- The most important priority
- A top priority but not the most important
- Important but lower priority
- Not too important
- Not important at all

Question Commentary

This question shifts the focus on to the individual themself, and seeks to establish a baseline of how well the importance of diversity and inclusivity has permeated across practitioners.

Responses and Observations



Responses to this question present a generally positive picture. Only a very small minority have—essentially—no interest in this area; the overwhelming majority recognise that improving diversity and inclusion across the industry is important. We might extrapolate and suggest that this also means that a majority of practitioners understands that more inclusive teams and practices result in better products, services and business outcomes.

Ethnicity

Survey Question

If you identify with one or more ethnicities, please share them here.

Potential Responses

Open text response

Question Commentary

As noted in the preamble to this section, and in 'other observations', it is extremely difficult to ask a meaningful 'ethnicity' question on a global basis; and essentially impossible to do it any other way that as a free text response. Context is simply too much of a factor.

Understandably, the response rate to this question dropped significantly (barely 30% of overall survey respondents chose to ask this question). Further, there was significant overlap between some responses, and insufficient discrimination between others, to allow for meaninful analysis. We will explore alternative ways of collecting this data in future years.

Sexual Orientation

Survey Question

What is your sexual orientation?

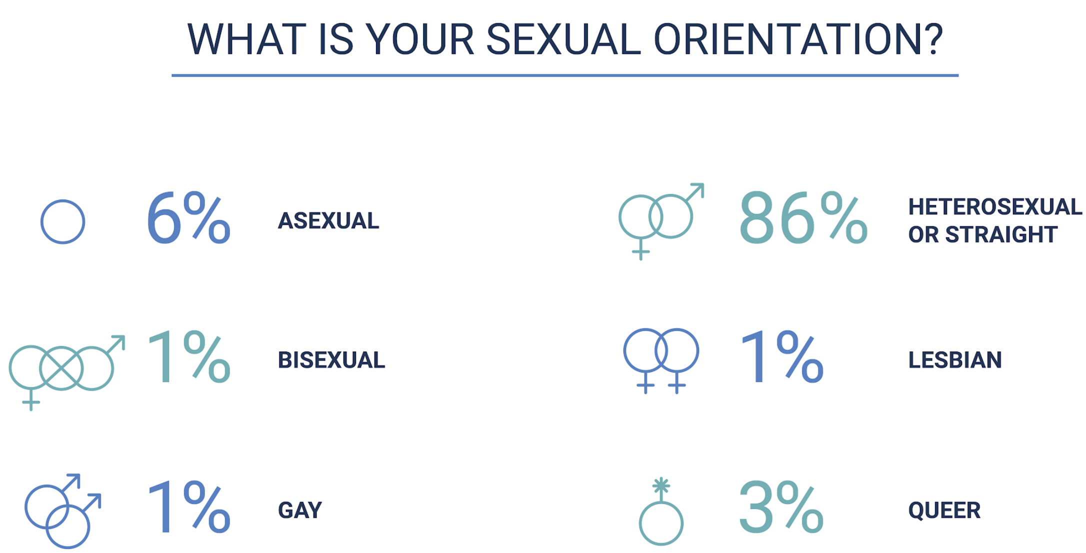
Potential Responses

- Asexual
- Bisexual
- Gay
- Heterosexual or straight
- Lesbian
- Pansexual
- Queer
- None of the above, please specify

Question Commentary

This question seeks to establish a baseline of self-identified sexual orientation amongst practitioners, as one indication of overall diversity.

Responses and Observations



As might be expected, response rates for this question were particularly low and certainly not sufficient to draw any meaningful conclusions. Nevertheless, the responses provide at least some indication of the current state across the practitioner cohort.

Gender

Survey Question

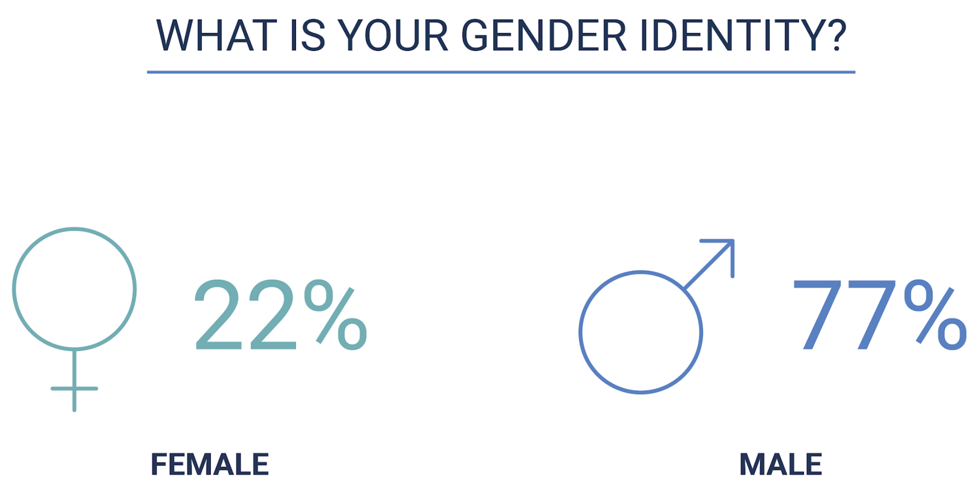
What is your gender identity?

Potential Responses

- Woman
- Man
- Genderqueer or non-binary
- Agender
- Not specified above, please specify

Question Commentary

This question seeks to establish a baseline of self-identified gender amongst practitioners, as one indication of overall diversity.



Response rates for this question were likewise particularly low and insufficient for meaningful analysis. Nevertheless, the responses provide at least some indication of the current state across the practitioner cohort.

Survey Data

IDPro is pleased to provide aggregated and summary results under the Creative Commons Attribution Non-Commercial Non-Derivative 4.0 license. For raw data and all other uses of the data, please contact director@idpro.org.

Acknowledgements

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