Wellspring Initiative
PHASE II EMPLOYER READINESS SURVEY & REPORT

PREFACE

This report summarizes recent research on the application of digital credentials to education and employment funded by the 1EdTech Foundation as part of the Wellspring Initiative.

1EdTech Foundation is a non-profit 501c3 organization that seeks to accelerate technology ecosystems to improve the effectiveness of educational systems worldwide. 1EdTech Foundation works in concert with the affiliated non-profit IMS Global Learning Consortium, the world’s largest and most dynamic educational technology collaborative, consisting of over 675 organizations worldwide and other implementation partners.

Wellspring is an ambitious multi-year initiative working on rewiring connections between individuals and opportunities for a better tomorrow. The goal is to develop a more effective education-to-employment-to-lifelong learning ecosystem. The project facilitates collaboration among organizations, including employers, institutions, and technology providers, leading the way in deploying various parts of the ecosystem. The expectation is to enable deployment and broad adoption of a new generation of digital achievement records, resumes, applicant tracking systems, and talent management systems.

This report focuses on understanding how corporate hiring and talent development processes will accept digital credentials developments on the mid-term horizon. Wellspring expects to conduct additional research along these lines as various technology components required to enable better connections are developed and deployed.

We invite those interested in this work to join our collaboration!

Rob Abel, Ed.D.
President of 1EdTech Foundation
CEO of IMS Global Learning Consortium

1EdTech Foundation acknowledges the generous financial support for this work from the Charles Koch Foundation and the Walmart Foundation.
INTRODUCTION

Over the last decade, digital credentialing has become a major global trend in education and workforce development. Educational institutions have been developing and issuing shorter-form credentials in response to job market demands. New types of professional education providers and even employers have begun to issue credentials. In addition, traditional, static, paper-based credentials such as college diplomas are becoming more digital, shareable, and verifiable. The COVID-19 pandemic accelerated these existing trends, which sped up the adoption of online technology as an educational delivery mechanism—and the digitization of recruiting and hiring processes in the job market.

As colleges and universities, professional associations, educational technology firms, and other parties who are either credential issuers or enablers seek to grow and improve their offerings, the crucial employer demand side of the equation is still underexplored. There are plenty of news headlines about exciting new cloud-based HR technology systems, the promise of new types of credentials disrupting degrees, and employers adopting skills-based hiring practices – but very little in the way of basic quantitative measures and the state of the landscape at this intersection of education and talent.

This survey report is an outgrowth of the 1EdTech Foundation and IMS Global Learning Consortium’s Wellspring Initiative, which aims to bring together institutions and corporations to accelerate an education-to-work ecosystem. Wellspring’s work is based on the use of open standards for verifiable digital credentials that capture learning achievements and skills to empower individuals to find jobs and help transform the education system as it moves from valuing seat-time to skills. In several areas, this survey also builds on and extends Northeastern University’s previous, first-of-its-kind national survey on employers’ use of educational credentials in hiring and related innovations.¹

Given the rapid development and still early state of the digital credentialing ecosystem, the goal of this survey is to provide market intelligence on employers’ interest and readiness with respect to digital credentialing and the use of competency frameworks by exploring priorities, strategies, and practices within employers’ talent function. The survey results that follow can help guide the development of future strategies and resources to address gaps in digital credentialing awareness and value perception, an important foundation for the growth of a more robust digital credential market. Employers themselves, educational providers, technology platform companies, standards organizations, and many other interested parties can benefit from the data and benchmarks highlighted in the following analysis.

About the Survey Sample

This survey of 750 HR leaders was designed by Northeastern University researchers and IMS staff and administered online in partnership with market research firm Dynata in May 2021 to its nationally representative panel of U.S. business decision-makers. Respondents were qualified as managers in the HR function with primary responsibility or final decision-making authority for hiring, recruiting, and talent strategy. The sample is generally representative of the U.S. economy as a whole, across a full range of industry sectors and organizational sizes. Full details of the sample are provided in the Appendix.

KEY TAKEAWAYS

- Technology tools are playing a growing role in hiring—including creating and managing job descriptions—and in the adoption of skill and competency frameworks. 75% of HR leaders report that they have some type of technology system or bank of competencies and roles to use when creating job descriptions, and about half the time, these are integrated with external systems.

- Skill or competency frameworks that consistently define the knowledge, skills, and abilities for roles are commonly used for hiring, assessing candidates or employees’ current knowledge and skills, and staffing and resource planning. How often these frameworks are updated is highly variable, ranging from every few years in most cases to a small share of employers who are updating these frameworks continuously. Respondents also report being open to the use and potential benefits of industry-led external competency frameworks, with 69% agreeing that these could be beneficial in creating a more fluid market for talent in their industry.

- A majority of organizations (73%) reported having some level of dedicated talent analytics efforts underway, ranging from modest strategies and resourcing to powerful predictive analytics with dedicated teams and technology, reflecting the growing availability of people analytics technology tools and the maturation of this emerging area within HR organizations.

- 34% of HR leaders indicated that their organization is operating with a skills-based hiring strategy that focuses more on competency in hiring rather than over-relying on college degrees: this is an increase from 23% in a similar survey question three years ago. An additional 42% of respondents say that their organization is exploring and considering these approaches.

- The top motivations for skills-based hiring include more rigorous and better hiring outcomes (66%) and diversity, equity, and inclusion (62%). The most common skills-based hiring approaches include pre-hire testing/assessment (67%) and emphasizing structured interviewing (58%), among other approaches.

- The educational credentials presented by candidates in the hiring process are often but not always verified: respondents see value in means that would make educational credentials more verifiable and trusted. When asked to characterize the utility of traditional college transcripts, only 44% of HR leaders considered them very or extremely useful.
● Awareness and experience with digital badges appear to have grown modestly, with 87% of HR leaders reporting that they have at least heard of digital badges, up from 78% in a similar survey three years ago—including 48% who have encountered badges in screening candidates or hired a badge holder. Still, there remains an opportunity and need to grow familiarity and awareness with new types of digital credentials as half of all respondents either say they “don’t know much about” digital badges or have never heard of them.

● Many of the value propositions and use cases associated with digital credentials in hiring and L&D appear to resonate with HR leaders. These include, for example, the potential to more accurately measure skills and specialized knowledge, providing evidence of mastery and documentation of learning. However, since many are not experienced with digital credentials, these value propositions and benefits are prospective more than already achieved.

● Across various survey responses, HR leaders suggested an interest in the potential of newer, more digital approaches to improve hiring, skill assessment, training, and credentialing. When indicating the top barriers within their organization that might pose a challenge to adoption, the top results were technical integration with other HR systems, lack of budget or time, and the challenges associated with including all talent channels or coordinating with colleges and universities.

Context: Talent Strategy Priorities and the State of Technology Systems

First, it is helpful to establish a sense of HR leaders’ talent strategy priorities, as this is the broader context within which the use of educational credentials and learning records exists. Notably, in a very tight labor market today, talent strategy has risen to the top of C-suite agendas.2

Respondents indicated that training and upskilling (86%), compliance (83%), and recruiting and hiring new employees (81%) are their foremost priorities, based on rating these activities either “very” or “extremely” important. These were closely followed by workforce planning (77%), increasing workforce diversity, equity, and inclusion (75%), and automating talent strategy processes and practices (64%).

As another important piece of context, the survey sought to establish the general state of organizations’ HR and talent acquisition technology systems, e.g., applicant tracking, ERP, and human resource information systems. This provides a contextual baseline for understanding organizations’ readiness for digital credentialing since the capabilities and limitations of these systems often influence or enable the adoption of new practices.

In a check-all-that-apply question, more than one-third of respondents (39%) said that their systems “are effectively integrated with each other,” and 32% of respondents characterized their systems as “cloud-based.” Only 33% considered their systems “a strategic advantage.” Encouragingly, only 27% of respondents indicated that “accessing the right data is a challenge,” and just 17% said that their systems “are often a barrier.” Overall, this suggests a very mixed picture relative to a potential ideal in which these systems—as a general category—are strategic assets, but is consistent with expectations. As explored more later in this report, around half of organizations are technologically very well-prepared for adopting approaches that this survey explored. Likewise, nearly half of all respondents (49%) reported that they plan to make major upgrades to their systems in the future.

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Job Descriptions and Competency Frameworks

The design and administration of job descriptions is a key aspect of talent management and matching candidates to jobs. How job roles are codified and articulated closely links organizations’ potential adoption of competency frameworks and new approaches to educational credentialing and skill assessment.

Perhaps not surprisingly, most HR leaders report that creating and managing job descriptions within their organization is centralized—and characterize the process as rigorous and standardized.

How would you describe how the creation and management of job descriptions is handled within your organization?

- Centralized - haphazard, inconsistent: 14%
- Centralized - rigorous, standardized: 61%
- Decentralized - haphazard, inconsistent: 11%
- Decentralized - rigorous, standardized: 9%
- None of the above: 5%

**FIGURE 1.**
75% of respondents report having some type of bank of roles and competencies in a technology system that they can draw on when creating a new position description. Of course, this could be as simple as an online file folder or job library. Of those who do have a system, half (51%) say that it is integrated with outside third-party systems and job posting boards, suggesting that in many cases, external systems and standards potentially have the opportunity to shape the framing of an employer’s specific job roles.3

Many in the HR field have recognized that job descriptions can be burdensome to keep up-to-date—and that this is increasingly the case in a world where skills requirements and evolving so quickly.4 The dynamic nature of jobs sets the stage for the related use of skill or competency frameworks.

Skill and Competency Frameworks

Skill or competency frameworks are formalized models that define the knowledge, skills, and abilities associated with success in various job roles and business functions.

The vast majority (85%) of surveyed HR leaders report that they use skill or competency frameworks for at least some roles within their organization, as indicated in Figure 2.

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3 In a separate survey question, 73% of respondents agreed or strongly agreed that “LinkedIn and other networks/job boards have a growing impact on the talent discovery process.”

The most common activities that these frameworks are used for include hiring (74%), assessing candidates/employees’ current knowledge and skills (64%), staffing/resourcing planning (63%), and identifying learning and development opportunities (54%).

Interestingly, how often these frameworks are updated varies widely. As Figure 3 illustrates, half of the respondents report updating their frameworks every few years, while another 43% say they are updated either a few times a year (26%) or continuously (17%).

These responses, when taken together, suggest that the typical skill/competency framework is refreshed about once every 18 months.

Given the constantly evolving nature of skills, in certain cases, employers have the opportunity to benefit from industry bodies and professional associations that are developing various frameworks that define skills-related standards for industry sectors and occupations. However, there has been an open question about individual employers’ receptivity to or ability to apply these external frameworks to their jobs.

A substantial majority—69%—agreed that these types of resources could be beneficial in creating a more fluid market for talent in their industry, and 72% agreed that industry frameworks could be useful in aligning the outputs of education and training programs with their needs. However, 41% of respondents felt that these types of frameworks would be difficult to implement because they don’t account for their specific job roles. Only one-quarter (24%) characterized these frameworks as “not especially useful.”
Talent Analytics and Skills-Based Hiring

As in other areas of business, the HR function is undergoing a technology-driven transformation that includes the growing application of data and analytics to processes and decision-making. The application of analytics to talent strategy is also a potential foundation for de-emphasizing the reliance on degrees in hiring and can be closely coupled with the use of digital credentialing and competency frameworks.

A majority of organizations (73%) reported having at least modest efforts in using data and analysis to shape HR and hiring decisions. Notably, 37% of respondents said they have “significant predictive analytics strategy with dedicated teams/technology.”

These responses appear to reflect the growing availability of talent analytics tools and the maturity of the practice within some HR organizations, potentially creating a strategic foundation for a future in which HR and hiring decisions are more data-driven and influenced by algorithms. This is an area that could benefit from deeper exploration.

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Skills Based Hiring

Over the last few years, skills-based hiring practices that focus hiring decisions on competencies and capability over degrees and pedigree have become increasingly popular, attracting significant attention from business leaders, government, and the media. However, there has been relatively little analysis of employers’ interest in and use of these strategies or motivations. This skills-based hiring trend is also of special interest to colleges, universities, and other educational providers as it could diminish to the primacy of the degree as a hiring requirement.

Northeastern University’s prior research surveying HR leaders in late 2018 found that at that time, 23% of organizations said they had a formal skills-based hiring effort underway or were moving to put them in place—and that a further 39% were exploring or considering this direction.

Some organizations are making a strategic commitment to skills-based hiring practices by focusing on demonstrated competency, rather than over-relying on college degrees. Which of the following best describes the extent to which your organization has formal initiatives like this in place, or is considering this approach?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6%</td>
<td>We're not doing this - and are not likely to consider in the future</td>
</tr>
<tr>
<td>16%</td>
<td>We're not doing this - but might consider it in the future</td>
</tr>
<tr>
<td>42%</td>
<td>We’re exploring and considering this</td>
</tr>
<tr>
<td>34%</td>
<td>We are already operating in this way</td>
</tr>
<tr>
<td>2%</td>
<td>Not sure/don’t know</td>
</tr>
</tbody>
</table>

FIGURE 5.

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8 Gallagher, Educational Credentials Come of Age, Ibid.
Today, it appears that the adoption of and interest in skills-based hiring practices has indeed grown. As shown in Figure 5, 34% of HR leaders reported that they are “already operating in this way” with respect to skills-based hiring practices—while another 42% are exploring and considering it. Only 6% of respondents said that they’re unlikely to consider this type of approach.

In a check-all-that-apply question, 76% of respondents exploring or already engaged in skills-based hiring were asked about their motivations for this. As Figure 6 below indicates, the most popular motivations from these selections include “more rigorous, better hiring outcomes” alongside “diversity, equity, and inclusion.” These responses appear to confirm the interest in skills-based hiring as an approach that can potentially lead to better hiring processes and decisions and in more equitable ways—a priority that rose to the top of many corporate agendas over 2020.

What are the main motivations for your organization's consideration or use of skills-based hiring practices?

- More rigorous, better hiring outcomes: 66%
- Diversity, equity, and inclusion: 62%
- Limited supply of degreed talent - need to expand the pipeline: 39%
- Frustration with the products of colleges and universities: 29%
- Regulatory/EEOC concerns: 29%
- Other: 1%

FIGURE 6.

Note: For clarity, some slight, intentional changes to language were made to this survey question between years.

In addition, the survey sought to explore which specific approaches to skills-based hiring are being used or considered. Figure 7 below illustrates that the top approach is pre-hire testing/assessment (67%), followed by structured interviewing (58%). These were followed approaches pursued by just over one-third of respondents: requesting more evidence or using portfolios (39%), prioritizing certifications (39%), and relaxing or eliminating college degree requirements (36%).

To the extent that many of these practices are still emerging, they represent an exciting area for continued monitoring and deeper exploration.
Educational Credentials and Academic Transcripts

The survey also explored particular practices related to the role of educational credentials and associated academic records in hiring. A first question here concerned whether organizations formally verify or confirm the educational credentials presented by candidates in the hiring/recruitment process. Not surprisingly, verification was common—but at times depended on the context, as indicated in Figure 8.

As part of the recruitment and hiring process, does your organization formally verify/confirm the educational credentials (e.g., degrees) presented by candidates?

- No, never: 7%
- Sometimes depending on the context: 37%
- Yes, always: 56%

In a follow-up question, 50% of respondents indicated that this verification was done in-house; 20% reported that credential verification was outsourced, and 31% indicated a combination of the two.
In addition, 64% of HR leaders agreed "it would be valuable for candidates' learning/credential claims to be validated by the distributed ledger (e.g., blockchain)." A similar share (60%) agreed that "credential misrepresentation and fraud" are significant business problems. These findings speak to the potential value of educational credentials that are more easily verifiable and trusted.

HR leaders also characterized the utility of traditional college and university transcripts in the hiring process. Only 44% of respondents considered transcripts at least "very useful."

**FIGURE 9.**

How would you characterize the usefulness of college/university transcripts (academic records of courses, grades, etc.) in the hiring process?

- Not applicable: 3%
- Not at all useful: 8%
- Somewhat useful: 25%
- Useful: 20%
- Very useful: 24%
- Extremely useful: 20%
Digital Credentials: Growth in Digital Badge Awareness

Although digital credentials are still relatively new in the hiring landscape, the growth in recent years has been significant. As with the steadily increasing awareness and acceptance of online degrees over the last few decades, HR leaders’ understanding of digital credentials grows as more individuals encounter and earn them.\textsuperscript{11} Digital badges are the most mature and widely-awarded type of microcredential—with 43 million Open Badges awarded to date, up significantly from 24 million in 2018.\textsuperscript{12}

87\% of survey respondents report that they have heard of digital badges—up from 78\% in a similar survey in 2018. However, only 48\% of respondents are well-acquainted with badges, having encountered them in screening candidates (33\%) or hired someone who holds a badge (15\%). Notably, this half of respondents who have encountered or hired badge holders is up from 40\% in 2018.

What is your level of awareness or experience with "digital badges" (information-rich records of verifiable achievements, often containing evidence of competency, that are easily shared on the web or social media)?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have never heard of them</td>
<td>13%</td>
</tr>
<tr>
<td>I have heard of them, but don’t know much about them</td>
<td>35%</td>
</tr>
<tr>
<td>I have encountered them in screening or hiring candidates</td>
<td>33%</td>
</tr>
<tr>
<td>I have hired someone who earned them</td>
<td>15%</td>
</tr>
<tr>
<td>Don’t know/not sure</td>
<td>3%</td>
</tr>
</tbody>
</table>

Thus, the market appears split between about half of HR leaders who have encountered or used badges in hiring—and about half who say they are either unfamiliar with or do not know much about them. This appears to confirm the expectation that familiarity with badges is growing steadily over time—but also reflects an opportunity and a need for growing awareness or understanding among employers about these new types of credentials.

\textsuperscript{11} Gallagher, Educational Credentials Come of Age, Ibid.

\textsuperscript{12} IMS Global Learning Consortium, Badge Count 2020 Findings, \url{http://content.imsglobal.org/badge-count-2020/badge-count-2020-findings/}
In addition, organizations’ readiness to integrate digital credentials into their hiring processes and systems varies. In separate survey questions, about half (54%) of respondents agreed or strongly agreed that “our hiring systems are ready to interpret data from digital credentials,”—while 51% agreed that “data-rich learning and achievement records would challenge our hiring systems and current processes.”

Given the potential utility of digital credentials in hiring, and learning and development, the survey tested the resonance of various value propositions or associated use cases. These results are presented in Figure 11.

As the graphic illustrates, the value propositions associated with digital credentials generally appear to resonate for HR leaders, with well over half rating these as potentially “very” or “extremely” impactful. At the same time, the clustering of these responses together suggests a relatively minor distinction between many of them. The specific, skills-oriented focus and evidence of competency potentially associated with digital credentials seem to appeal to employers—and this was a clear theme in open-ended comments as well.
Although hiring was the major—but not exclusive—focus of this survey, a related question explored the value of digital credentials and new technologies to document current employees’ learning and development, specifically. Here the most valuable use cases clustered in a similar range and included:

- Supporting professional development plans for employees or demonstrating a culture of learning (64%)
- Documenting internal course/training completion for compliance (63%)
- Analyzing talent pools for available skills (62%)

Notably, these activities are prominent in the existing cases of employers in the marketplace (outside of the survey) who have invested heavily in badging their workforce.

Respondents were also ultimately asked whether the growth of microcredentials (such as digital badges and new types of online certificates) is likely to diminish the emphasis on degrees in hiring over the next 5-10 years. Nearly half (47%) answered “yes,” while 26% responded “no”—and 27% answered, “not sure/do not know.”

An open-ended follow-up question explored the rationale for why HR leaders chose their given response. The selected examples on the following page add perspective and color to our understanding of this still-evolving question and the associated issues.
Selected Comments Related to the Prospect of Digital Credentials Diminishing the Emphasis on Degrees in Hiring

“The world is waking up to the idea that for many roles in the business, a degree does not matter. Experience is the key in many industries.”

“Not everyone can obtain certain school certificates for several reasons. Focusing on the skills that they have proven through other means outside of the educational system is more efficient because many school systems do not fairly judge people’s skill.”

“I believe degrees will remain a standard and digital badges will be an enhancement. However, badges without education will not be as openly accepted. I think the digital badges will work best on internal promotions as you show your company you are working to improve your skillset.”

“I think we’re already moving toward more skill based work because college is so expensive. I think proof of skills and continuing education will be more important than just a degree. A degree will still be important too, but continuing education and proof of credentials could open the door for people without degrees.”

“I think that while digital certificates will enhance hiring in the future, they will not replace the current procedures.”

“I believe the impact of digital credentials will have a significant impact in the hiring process. We are seeing a dramatic drop in candidates for all positions and anything that would enable verification of qualified candidates would significantly impact qualified hires and hopefully long-term retention.”

“I feel like with digital records we will have a more robust background on our employment and academic achievements. With everything being recorded on a footprint we will be able to respond and see exactly the credentials of the person regardless if they have actually obtained a degree. It will also allow us to see past work history which I find to be very beneficial.”

“The overall global workforce is headed toward more diversity and inclusion and micro-credentials or digital badges would allow my company and businesses alike to focus more on actual skill and competency for potential new positions instead of relying on college degrees that really only indicate possessing the knowledge.”

“There is a lot to be said about achieving a college degree and from where the degree was earned. College degrees allow one to judge a person’s learning potential and also their resolve to succeed. Accredited universities tend to produce better candidates. Having a college degree implies that a candidate was able to balance several factors to obtain success and graduate. Furthermore, the college experience cannot be replicated by digital badges.”

“With the government shutdown of 2019, and the Covid-19 pandemic of 2020, we have transitioned to a completely remote workforce. Our recruiting and hiring process has become more analytics friendly. We trust what we can verify.”

FIGURE 12.
Finally, respondents were asked to rank the top barriers within their organization that might challenge newer, more digital approaches to hiring, skill assessment, L&D, and credentialing, which appear below in Figure 13.

What are the top barriers within your organization that might present a challenge to newer, more digital approaches to hiring, skill assessment, L&D, and credentialing? Please rank your top three.

Here, the forced ranking approach provides a clearer sense of relative priority, with technical integration with other systems re-emerging as an important theme when framed from this perspective—followed by “lack of budget or time” ranked the second most frequently. It is potentially encouraging that some of the posited barriers—especially related to legal concerns, regulations, culture, and others—were chosen by fewer respondents.

Finally, given the survey’s focus, a concluding question explored whether or not HR leaders would be ready and interested in piloting a platform that could match their organization’s hiring needs with trusted partners, such as educational institutions, using verified digital credentials and achievement records. 69% said that they would be open to shaping/exploring such a system, and 62% believed that their existing systems and processes would take advantage of such an approach.
CONCLUSION

Technology is playing a more prominent role in employers’ HR strategies and operations. We hope that the picture painted by this survey and the implications explored throughout can potentially help credential providers—and those that enable new approaches to credentialing—respond to employer needs and better interface with this increasingly digital world of hiring and workforce development.

One of the macro themes is more data-driven hiring and continued experimentation with skills-based hiring. Employers’ experience with and awareness of digital credentials appears to have grown over time, but it is still somewhat limited. HR leaders appear optimistic about and receptive to the potential value of digital credentials. However, these benefits are untested in many cases as it is still early in developing a digital credential market. Here, continued exploration, education, and dialogue can help better match the growing supply of digital credential offerings with employer-side talent demand—and ensure that education providers can adapt to changes in how employers are hiring and what types of signals or evidence of competency and potential they value.

As demonstrated in one of the final survey questions regarding potential barriers to adopting more digital hiring, skill assessment, and credential processes, technical integration across various HR systems appears to be key. Here technical and conceptual standards can play an important role.

In addition, it will be beneficial to study the practices of early adopters of digital credentialing and competency frameworks—and develop more employer-side and educational reference cases that have the potential to evolve these approaches from experiments or curiosities with potential impact and value, into efforts and products that have proven and documented ROI.

Acknowledgments


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APPENDIX A

Profile of Survey Respondents

This survey of 750 HR leaders was designed by Northeastern University researchers and administered online in partnership with market research firm Dynata in May 2021 to its nationally representative panel of business decision-makers. Respondents were qualified as managers in the HR function with primary responsibility or final decision-making authority for hiring, recruiting, and talent strategy.

As indicated in the profile data below, respondents spanned a wide range—and we believe the sample tracks closely against the U.S. economy as a whole is attempting to achieve a diversified, representative national sample for this level of scale. The focus was on high-level representation rather than understanding differences by industry or employer size. As detailed below, respondents represented both businesses (the majority) and non-profit organizations/government agencies—both large and small. Note that at small firms, the CEO or owner often leads the talent function.

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Accommodation and Food Services</td>
<td>3%</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing, and Hunting</td>
<td>1%</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>2%</td>
</tr>
<tr>
<td>Construction</td>
<td>7%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>6%</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>9%</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>12%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12%</td>
</tr>
<tr>
<td>Other Services</td>
<td>2%</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>6%</td>
</tr>
<tr>
<td>Public Administration or Government</td>
<td>4%</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>3%</td>
</tr>
<tr>
<td>Retail</td>
<td>9%</td>
</tr>
<tr>
<td>Tourism and Hospitality</td>
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<tr>
<td>Transportation and Warehousing</td>
<td>4%</td>
</tr>
<tr>
<td>Utilities</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
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</table>

<table>
<thead>
<tr>
<th>Job Level</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Partner/principal</td>
<td>4%</td>
</tr>
<tr>
<td>C-level executive</td>
<td>12%</td>
</tr>
<tr>
<td>EVP, SVP, VP</td>
<td>8%</td>
</tr>
<tr>
<td>General manager</td>
<td>15%</td>
</tr>
<tr>
<td>Director/department head</td>
<td>27%</td>
</tr>
<tr>
<td>Manager/senior manager</td>
<td>22%</td>
</tr>
<tr>
<td>Owner or president</td>
<td>12%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th># of Employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>15%</td>
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<tr>
<td>50-99</td>
<td>12%</td>
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<td>100-499</td>
<td>12%</td>
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<tr>
<td>500-999</td>
<td>20%</td>
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<tr>
<td>1,000-4,999</td>
<td>12%</td>
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<td>5,000-9,999</td>
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<td>10,000</td>
<td>11%</td>
</tr>
</tbody>
</table>
About 1EdTech Foundation

1EdTech Foundation facilitates cooperative investment catalyzing a connected ecosystem of innovative educational products and digital credentials that together accelerate teaching and learning innovation enabling every individual to achieve without limits. For more information visit https://www.1edtech.org.

About IMS Global Learning Consortium

IMS Global Learning Consortium is a non-profit partnership of leading educational institutions at all levels, government organizations, and edtech suppliers that enable better digital teaching and learning by collaborating on interoperability and adoption initiatives. Together, we are committed to achieving an open and inclusive education technology ecosystem that powers learner potential. IMS hosts the annual Learning Impact conference and other engagement opportunities throughout the year to recognize the impact edtech innovation has on access, affordability, and scalability while advancing the leadership and ideas to shape our future. View the interactive IMS Annual Report at imsglobal.org/about/annual_report/2020.

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