



2020 Assessment Technology

AT A GLANCE

For use in entry-level and middle-skill IT jobs and training programs, including apprenticeships. Our market scan identifies the most promising assessment technologies that are poised to generate significant social impact and are aligned to particular topic areas.

Developed by



OCTOBER 2019



About Our Market Scans

The world of work is rapidly evolving. New education and training models are needed to prepare students and workers for the jobs and careers of the future and to support the talent needs of business today. At JFF Labs, we scan markets to identify the most promising work and education technologies that are poised to generate significant social impact and are aligned to particular topic areas, such as work-based learning, assessments, immersive learning, and others.

Who We Include

We work with entrepreneurs and growth-stage companies to accelerate and scale workforce and educational technology innovations. We feature mission-aligned companies and nonprofit organizations of all sizes, from seed-stage startups founded by inspiring innovators and entrepreneurs to growth-stage organizations already creating significant social impact and business value.

Who We Feature

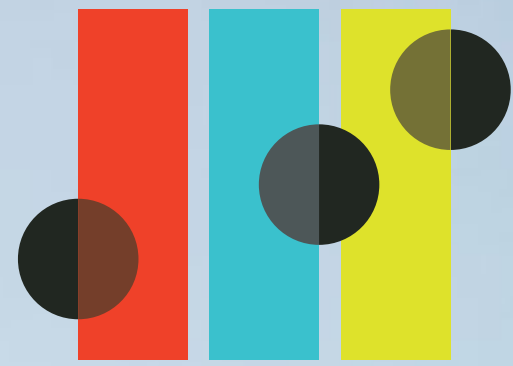
We selected 12 standout companies to represent the range of solutions we see in the market today. In general, these companies are creating significant business aligned with social impact, developing potentially transformative innovations, or led by inspiring founders and teams that we believe in.



JFF is building a society in which everyone has access to the skills, resources, and credentials they need to achieve economic advancement. To reach this goal, we accelerate the alignment, transformation, and reimagination of the American workforce and education systems.

JFF and JFF Labs operate in tandem to pursue the same mission: to build a society in which economic advancement is attainable for all.



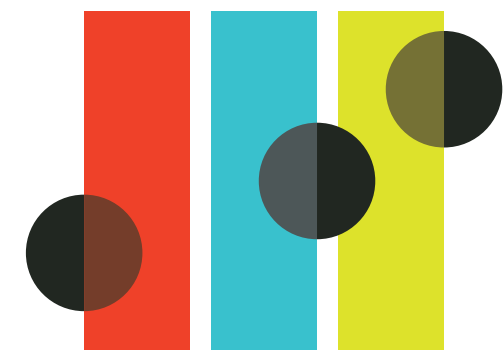


JFFLABS

Launched in 2018, JFFLabs bridges JFF's traditional field leadership with new relationships, innovation practices, and business models.

JFFLabs partners with visionary entrepreneurs, Fortune 500 companies, and investors to foster innovative solutions that create positive change in education and workforce systems. We provide a critical connection between traditional systems and new technology, financial models, and forward-leaning leaders.

We develop solutions and strategies that leverage our experiences building businesses, making investments, mobilizing technology, and working with corporate partners.



JFFLABS

ACCELERATION

Published by the JFF Labs Impact Accelerator

JFF Labs works with mission-aligned entrepreneurs and growth-stage companies to accelerate and scale technology-based solutions for impact.

In 2018, we established a new, nonprofit accelerator model to lead the field in identifying, selecting, and accelerating technologies to increase access to education and training.

Our custom, go-to-market acceleration program is designed to benefit partners, system stakeholders, and the people they serve. We work with companies with demonstrated product/market fit and have the ability to deliver meaningful social impact in tandem with the growth of their business.

Working across JFF and JFF Labs, our Impact Accelerator aligns social impact with the needs of business, education, and workforce systems.

The Impact Opportunity

When we talk about scale we don't mean serving, say, 500 people. To us, scaling means acknowledging the full scope of an issue and not settling for fractional progress. With our work, we're looking to have an impact on hundreds of thousands—if not millions—of people.

At JFFLabs, we create social impact for workers, learners, businesses, and traditional systems. We partner with companies that have established product/market fit and demonstrate the ability to deliver meaningful social impact in tandem with business value. Our impact priorities are:

- Good jobs and careers
- Education and training
- Equity and inclusiveness
- Advancement and economic security





“One of my favorite things about JFF is that they are constantly seeking out and supporting innovations in the workforce development space, and leveraging their networks to bring nonprofit organizations, employers, funders, and education institutions together to explore new ideas.”

- Ebony Beckwith
EVP & Chief Philanthropy Officer, **Salesforce.org**



How We Select Companies

We begin our process with data—lots of data.

For this market scan, we reviewed more than 450 companies of all sizes and stages, evaluating each for its alignment with our impact potential framework. Next, we narrowed the field and conducted numerous interviews and deep dives into the companies.

Finally, we argued. Who should be included? Who is not quite the right fit? Who is not quite the right fit? We asked the hard and honest questions that brought us to the companies we feature in this scan.



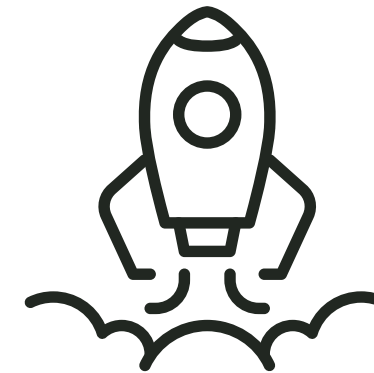
Scan

Survey // Scour // Study
Search // Examine // Audit
Analyze // Review // Scan
Diligence // Discovery //
Exploration



Deep Dives

Assessment // Evaluation
Analysis // Interview
Understand // Learn



Select

Vet // Organize // Publish
Invite cohort partners

A Note on What is Not Included

The assessment market landscape is complex and growing rapidly. New and already established players from around the world are creating assessments for all industries and verticals. For this scan, we focus primarily on workforce and talent development assessments appropriate for use in the information technology (IT) sector and with entry-level and middle skills and jobs.

In general, we did not include solutions developed specifically for the K-12 market, assessments for sectors other than IT (for example, manufacturing, health care, etc.), personalized learning systems using artificial intelligence (AI), learning management systems, as well as potentially other technologies and systems.

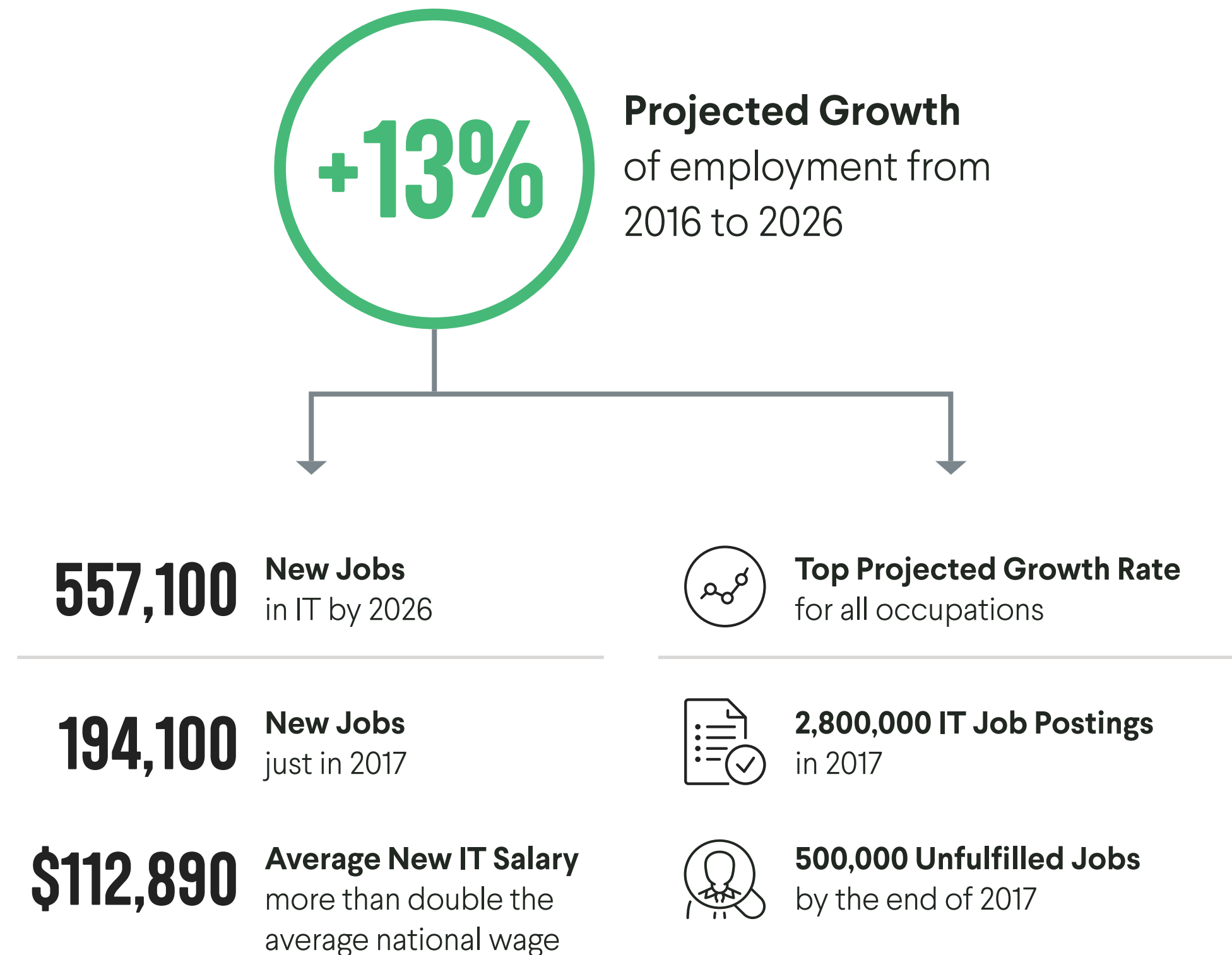
Why Assessments?

Transformative innovations in cloud computing, big data, and cybersecurity have spurred tremendous growth in IT. At JFFLabs, we see this as an opportunity to help young people and individuals in transition access high-quality careers that pay family-supporting wages. But to take advantage of this opportunity, we must train hundreds of thousands of new workers over the coming years.

Assessments paired with IT pre-apprenticeship programs can be particularly effective because they support career exploration and identify candidates most likely to be successful.

WHY ASSESSMENTS?

IT Growth Statistics

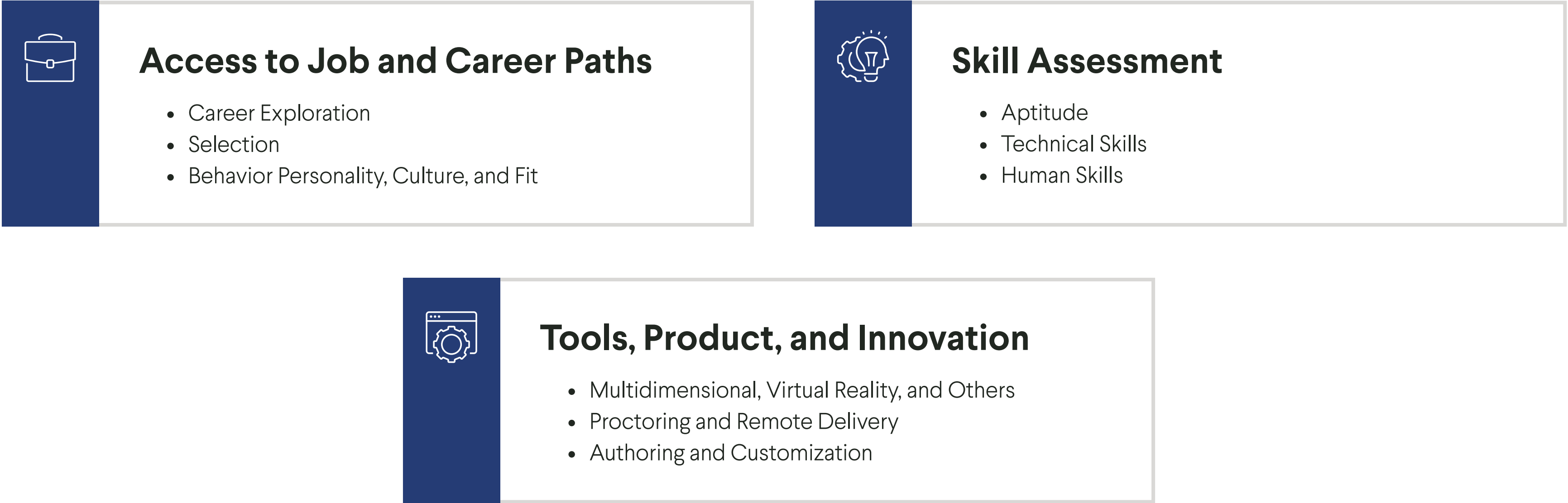


Source: The Bureau of Labor Statistics; Computing Technology Industry Association.

Market Segments

Similar to market segments found in other scans, our segments are aligned to our four impact priorities of Good Jobs and Careers, Education and Training, Equity and Inclusiveness, and Advancement and Economic Security.

The Assessment Market Scan segments are designed to help a range of stakeholders navigate, understand, and engage a dynamic marketplace of innovators and providers.





Assessment Technology Segment

Access to Jobs and Career Paths

Assessments are powerful tools that help people explore and access quality career pathways as well as support employers as they identify previously overlooked talent who have the skills to be successful.

Sub-segments

Career Exploration

Explore job and career opportunities based on interests, aptitude, skills, and/or other dimensions.

Selection

Identify people likely to be successful in a particular job role or education/training program.

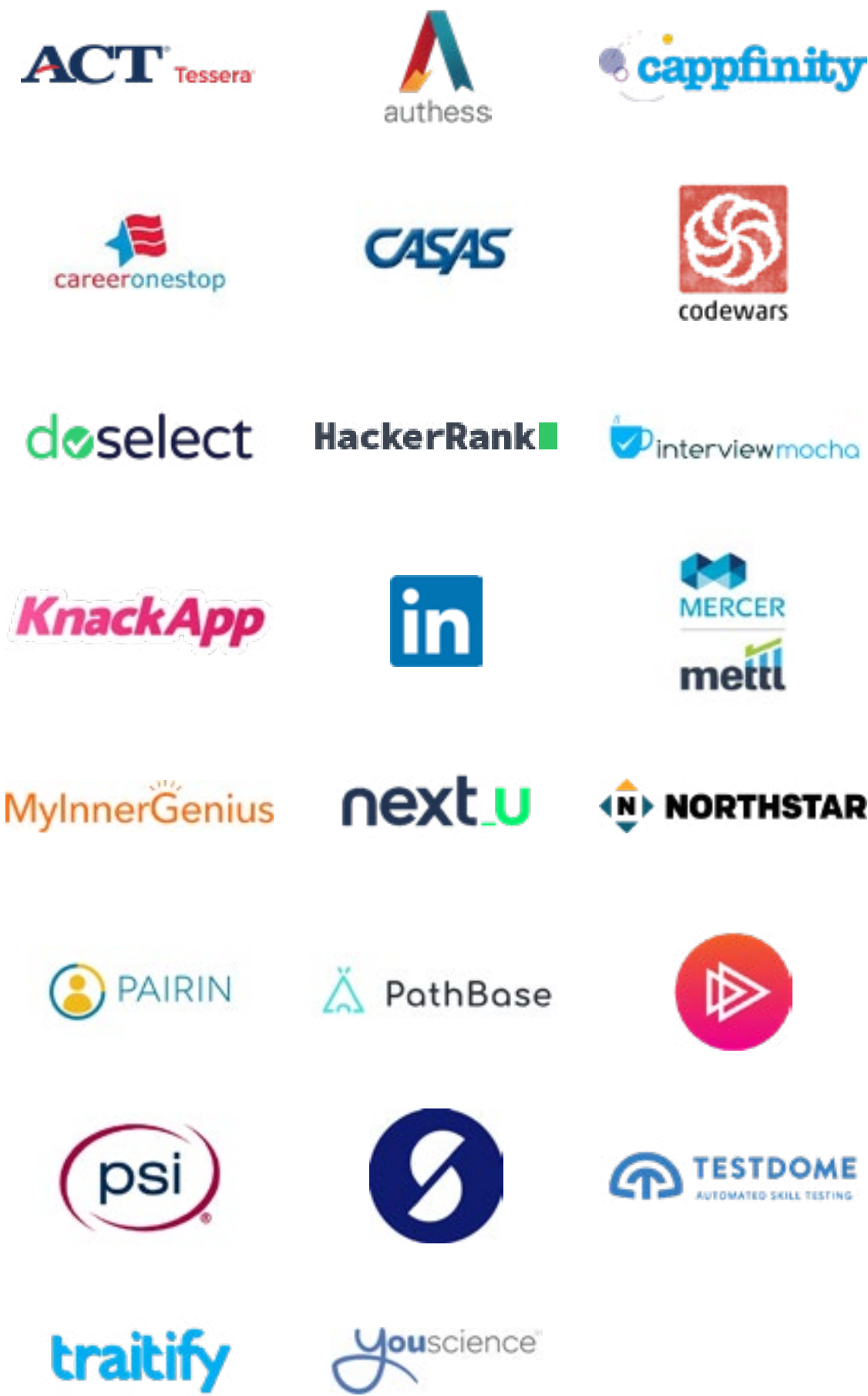
Behavior, Personality, Culture, and Fit

Understand a person's personality and/or general qualities which may indicate likelihood of success in a job role, career, education/training program, or on a team.

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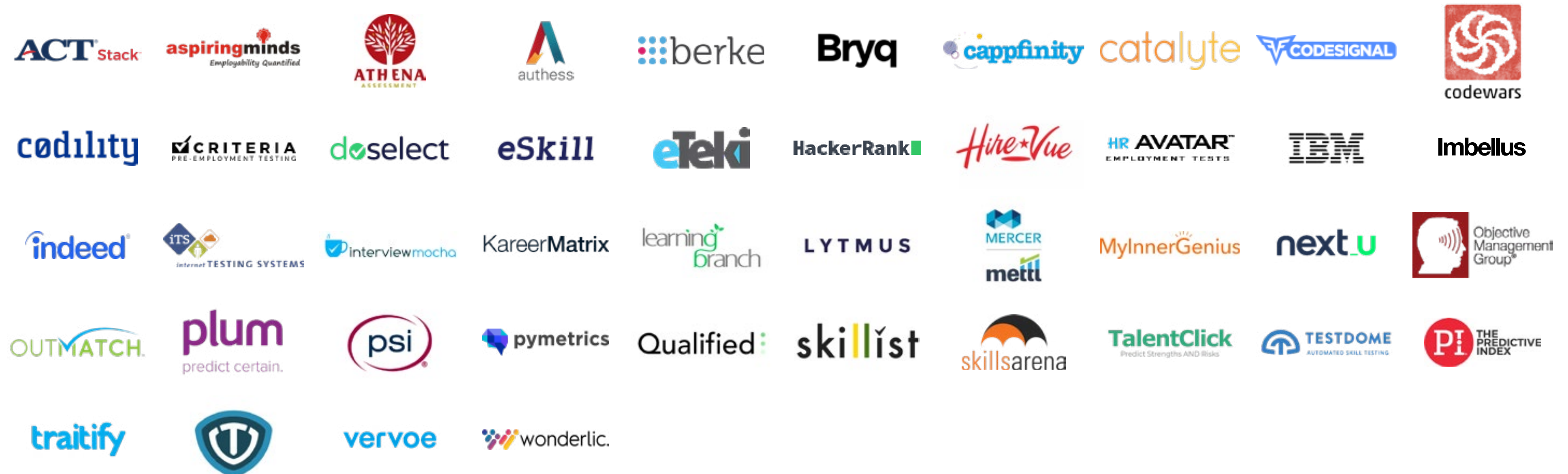
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Selection

Identify people likely to be successful in a particular job role or education/training program.





Assessment Technology Segment

Skill Assessment

Assessments help employers improve business performance through increased engagement, reduced turnover, and higher rates of productivity that drive business results.

Sub-segments

Aptitude

Understand a person's inherent qualities to indicate likelihood of success in a particular role or career, education/training program, on a team, or in other contexts.

Technical Skills

Measure proficiency with a specific skill, task, or assignment.

Human Skills

Understand a person's uniquely "human" skills, such as communication, critical thinking, ethics, and problem-solving. Commonly referred to as soft skills, employability skills, 21st-century skills, and other labels.

Skill Assessment

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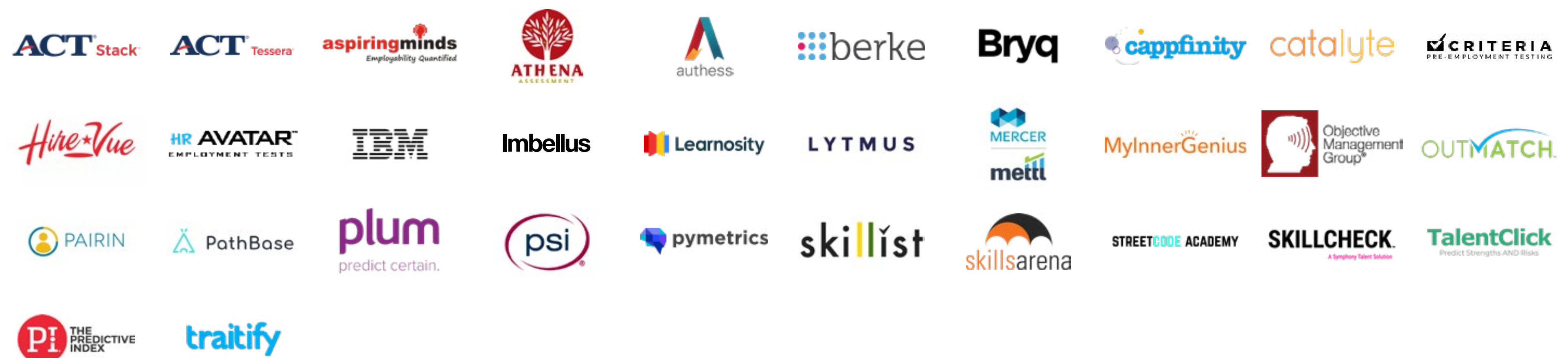
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Assessment Technology Segment

Tools, Product, and Innovation

Recent advances and innovations in technologies, like AI and immersive learning, have significantly reduced costs and increased efficacy of assessment solutions across the board.

Sub-segments

Proctoring & Remote Delivery

Has remote delivery of assessment tools and/or supports remote verification of a person's identity.

Authoring & Customization

Supports development and delivery of customized assessment solutions.

Multidimensional, Virtual Reality, and Others

Simultaneously measures more than one dimension of an individual. For example, an assessment that measures both digital and logic skills simultaneously.



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Authoring & Customization

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JFF LABS

2020 Innovators to Watch



Key Performance Indicators

4.7 Million

ACT WorkKeys National Career Readiness Certificates earned

26,000

Employers supporting WorkKeys and WorkKeys Readiness Certificates

About ACT Stack

ACT Stack is a singular platform providing access to ACT's full suite of workforce assessments. Employers can personalize their mix of available assessments to validate foundational cognitive skills, industry-specific skills across multiple sectors, and essential (soft) skills. Stack offers approximately 160 different assessments, allowing for flexibility and customization to create a testing experience that best serves customers' priorities.

"As governor, I can't stress enough the importance of having a productive and qualified workforce to meet the needs of business and industry and to encourage economic growth. We all have a stake in making Arkansas and our country more competitive by closing the skills gap that threatens our economy, and the ACT Work Ready Communities initiative is helping to do just that. **This initiative is designed to assist these counties in developing its workforce in hopes of giving their communities an economic advantage.** It helps employees to say, I am ready and get credentials to get a job. It helps employers to know how to identify workers and helps community to recruit industry because they can say they have a certified workforce."

- Arkansas Governor Asa Hutchinson

Why now?

This is a solution for employers who want to identify and measure foundational skills, industry-specific skills, and essential skills for both prospective and current employees. ACT Stack says they are the premiere solution for validating skills among all assessment and certification solutions because they combine valid and reliable assessments with in-demand and reliable skill validations and make them available on a remote proctoring-enabled, anytime, anywhere, platform.

What is their competitive edge? Why will they succeed?

ACT Stack combines ACT assessments and credentialing programs, including ACT WorkKeys and ACT Tessaera Workforce with Aspiring Minds' Automata, an industry leading programming assessment; SVAR, a spoken English assessment tool; AI-powered spoken language assessments; and more than 200 simulations and skill tests.

What's their big vision? What does that/success look like?

ACT will power data-driven, personalized learning with innovative services that guide individuals from where they are to where they want to be. ACT says the company is committed to providing an array of quality solutions across a wide range of life decision points in an increasingly individualized manner so that all can benefit.



Key Performance Indicators

1 Million

Assessments delivered each year, across 150+ global clients

60%

Percentage of offers to candidates who identify as women in the pharmaceutical sector, compared with the industry average of 43%

About Cappfinity

Cappfinity provides strengths-based assessments with a unique offering—combining decades of human insight, 14 years of behavioral data, strengths expertise, and innovative technology to ensure that clients hire and develop people who will thrive in their company culture and drive success.

Cappfinity was commissioned to design and deliver the recruitment process for the British government's Civil Service Cyber Security Apprentice Program. Using its Strengths Test and Technology Mindset assessment, among others, Cappfinity was able to demonstrate impact for both the Civil Service and its candidates.

- **All vacancies** were successfully filled and additional candidates were offered jobs due to high-quality applicants
- **25% of offers were made to female candidates**, a significant increase on previous campaigns
- **98% of candidates** reported that the Civil Service was an innovative recruiter after using Cappfinity's Technology Mindset assessment

Why now?

Through their work in the UK and in Europe, Cappfinity has demonstrated strong commercial success and the ability to deliver social impact. Meanwhile, U.S. employers are becoming more receptive to implementing skills-based hiring approaches. Cappfinity recently acquired Koru, a U.S. company, and is focused on accelerating its efforts in the U.S. market.

What is their competitive edge? Why will they succeed?

Cappfinity is grounded in deep academic and occupational psychology focused on strengths-based talent assessment research. Founded in 2005, the business initially was offline, and in 2012, Cappfinity moved into online assessments. Starting in 2015, the company moved to expand its work in areas including time-recorded, VR, and authentic assessment approaches. The acquisition of Koru, at the end of 2018, marks a strategic move by Cappfinity to a more productized approach that is not as dependent on deeper consulting engagement.

What's their big vision? What does that/success look like?

Cappfinity has a mission focus on how the company's approaches can be applied to achieve positive social impact. Their case studies include several examples of how Cappfinity has helped in areas like diversity and inclusion, advancing social mobility, expanding talent pipelines, and accessibility.



Key Performance Indicators

\$73,000

Average annual wage growth of Catalyte employees five years after program completion

82%

Percentage of alumni who earn over \$80K annually, five to six years after joining Catalyte

About Catalyte

Catalyte is a technology company that uses an AI-based algorithm to identify non-traditional technology talent to build and expand the U.S. technology workforce. Catalyte offers an apprenticeship model for talent and workforce development focused on software engineering, technology and process transformation, and application development roles.

Over the course of a weekend, Tony Richards quit his job at In-N-Out Burger in the Bay Area and moved to Chicago to take part in Catalyte's training program. He had no formal background in computer programming, no apartment lined up, and minimal savings to sustain himself through the five months of training. Tony graduated from the program, has worked as a Catalyte developer for over a year, has taught a training cycle, and **has achieved a level of financial and employment stability he never thought possible.**

Why now?

Catalyte is demonstrating strong commercial growth and positive wage gain and diversity outcomes. The company's model is an early entrant among new models for training and developing tech talent, adding to the capacity of traditional systems.

What is their competitive edge? Why will they succeed?

The market demand for technology and IT talent is massive and growing. Catalyte's results demonstrate higher rates of success and productivity than traditional approaches to tech hiring. Their approach is unique in the market. Catalyte has invested over a decade of R&D into building their Odyssey platform and has iterated and enhanced the product based on extensive real world data.

What's their big vision? What does that/success look like?

Catalyte has a stated goal of successfully training 10,000 people through their apprenticeship program in the next few years. Along with that goal, the company is focused on expanding their talent recruiting pipeline to engage underserved populations more effectively. Success should represent a \$75,000 increase in annual income after five years for 10,000 people.

Imbellus

Key Performance Indicators

90%+

Candidates report that the assessment is engaging or very engaging

70%+

Candidates report that the type of thinking done during the assessment is similar to the type of thinking they do on the job

About Imbellus

Imbellus is a simulation-based assessment company that's focused on articulating and identifying deeper thinking skills. The company's tool evaluates an individual's situational judgment and cognitive process. To ensure their product is inclusive and engaging, simulations are designed to take place in the natural world, with challenges that simulate problem-solving scenarios similar to those in the workplace.

Imbellus has developed a suite of AI-driven, simulation-based, cognitive assessments that measure how people think instead of what they know. Imbellus assessments have been developed with leading companies including McKinsey, and deployed in their recruitment processes where candidates report, for example: **"This assessment experience was great ... you use so much more than basic knowledge** (for example, math or English knowledge). **I feel that in this test I can show my creativity and the way that I think and resolve problems, not just in work, but in my life.**" Imbellus's north star has always been to adapt these assessments for K-12 students, to reorient the goal posts of our education system with relevant definitions of career and adulthood readiness.

Why now?

As college readiness no longer equates with adulthood readiness, Imbellus is designed to challenge rote learning environments and encourage shifts to project-based and simulation-based learning.

What is their competitive edge? Why will they succeed?

Imbellus is an early stage venture company, having raised \$23.5 million since its start in 2016. The company has strong partnerships with McKinsey & Company and a growing team of experts (in theoretical physics, game design, psychometrics, and more), including a former vice president of the College Board.

What's their big vision? What does that/success look like?

The company believes it can be a holistic competitor to the ACT and the SAT. In a world focused on content mastery, Imbellus wants to be the assessment platform that focuses on the cognitive processes that go beyond memorization and into decision-making and information processing.



Key Performance Indicators

1500+

Available skills assessments

5000+

Available skills assessments within three years

About Interview Mocha

Interview Mocha is on a mission to help organizations hire the right job candidates faster. In a bid to achieve this goal, the Interview Mocha team has built the world's largest skills assessment solution—a 1,500+ ready skills library. This library is slated to include 5,000+ skills within the next three years in order to meet the changing talent requirements of the future and help organizations and society build a well-skilled, future-ready workforce.

“HexaVarsity has one goal, to nurture a learning culture and help people grow and succeed. **With Interview Mocha we found the perfect assessment partner.** After the course completion, the assessment provided an apt picture of our consultant's strengths, skills gained, and laid the platform for further planning.”

Tamilselvan Muthunatarasan
Learning and Development manager, Hexaware Technologies

Why now?

Interview Mocha's vision goes beyond addressing current challenges. By 2030, it is estimated that up to 65 percent of the skills needed for the future workforce will be new. Through in-depth market research, Interview Mocha identifies emerging skills and collaborates with respective domain experts to create an up-to-date assessment library.

What is their competitive edge? Why will they succeed?

Interview Mocha's success is built on effective execution of its platform model. By rapidly developing its library of assessments, the company has built a strong customer base, including Altran, Capgemini, Credit Suisse, Hexaware, and Nielsen. Interview Mocha's customer acquisition model applies “consumerization of IT” mechanics. Interview Mocha's platform approach positions the company to quickly and efficiently add new skills assessments areas to their offering.

What's their big vision? What does that/success look like?

Interview Mocha has set out to be a leader in skills assessment with a focus on eliminating bias and guesswork from the hiring process. As the market moves to skills-based hiring as the norm, Interview Mocha is poised for massive growth and potential social impact.



Key Performance Indicators

2x

Candidates who use MyInnerGenius are almost twice as likely to stay in a job

2.5x

Candidates who use MyInnerGenius are almost 2.5 times as likely to be effective on the job

About MyInnerGenius

MyInnerGenius assesses students, employees, and jobseekers for pre-training, workforce rebalancing, and career planning to help them discover the perfect career match regardless of education or background. MyInnerGenius is a product of GreatBizTools, an HR technology company with a 40-year history of helping enterprises and small businesses improve their hiring and skills programs.

“Many people are in the wrong careers and don’t realize they are within reach of a better job. Most just need a few skills. Others don’t even know where to begin, what kind of career they should seek, and how to get there.

Working with JFF, we’re going to change that and help people find careers they will love, careers that will enrich their lives.”

Denise Leaser
President, GreatBizTools LLC

Why now?

Powerful forces like automation and AI are driving sweeping changes to the world of work and the skills that companies need to compete. These changes represent potential market demand and a meaningful social impact opportunity for MyInnerGenius.

What is their competitive edge? Why will they succeed?

Career fit assessments are the best way to identify innate skills, abilities, and personality traits to match people to careers they will love. MyInnerGenius Career Fit is a new science-based, non-biased solution that can assess cognitive skills, abilities, personality traits, and knowledge, regardless of education level, to identify the jobs that people were born to do.

What’s their big vision? What does that/success look like?

MyInnerGenius focuses on helping people, as well as businesses. The company is working on an initiative with IBM to help people get started in new careers in IT. People can use MyInnerGenius for free and align their career recommendations to IBM training. This allows participants to get meaningful, actionable results so they can get started in a new career.



Key Performance Indicators

3.8 Million

Over 3.8 million assessments completed to date

440,000

Over 440,000 Northstar Certificates have been earned

About Northstar

The Northstar Digital Literacy Assessment defines the basic skills needed to use a computer and the internet in daily life, employment, and higher education. Online, self-guided modules assess the ability of adults to perform these tasks. Test takers can receive certificates when they pass assessments in a proctored environment at a Northstar testing location.

The certificates earned from Northstar Digital Literacy Assessments affect the lives of learners in a variety of ways. **Learners have received promotions, been retrained for office jobs, become better citizens (taking actions such as emailing elected officials), connected with grandchildren, and experienced greater confidence in their own ability to learn.** One case study that exemplifies this growth is that of Maria Quinonez, 54, who completed 10 Northstar models. Because of her accomplishment, Maria was asked to work first as a teaching assistant in a beginning computer class and just recently became the lead teacher. She is now enrolled in Microsoft Office Specialist classes at a nearby university.

Why now?

Northstar is designed for lower-skilled adults defined within Adult Basic Education (ABE) as levels 3-4. The audience includes English-language learners, those seeking employment or preparing for higher education, and marginalized groups who have had limited access to digital literacy instruction and resources.

What is their competitive edge? Why will they succeed?

Northstar has scale and penetration in the ABE and digital literacy markets. In terms of scale they have more than 3 million assessments completed. Northstar also has significant access, with 670 active test sites in seven countries and in all 50 states.

What's their big vision? What does that/success look like?

Northstar is a comprehensive resource that is responsive to the unmet needs of adult learners and can help individuals function more effectively in their personal, family, educational, social, and civic lives.



Key Performance Indicators

Up to 3x

Employers report a threefold increase in employee diversity hiring

Up to \$19,000

The amount of wage increases in the first year after using PAIRIN coaching, job matching, and/or curriculum

65%

The reduction in employee attrition within one year of switching to competency-based hiring using PAIRIN

About PAIRIN

PAIRIN matches individuals to optimal careers, professional development, and jobs with their behavioral, science-based SaaS (software-as-a-service) products. PAIRIN's My Journey platform uses their behavioral assessment and a needs-and- desires survey to personalize career, education, and development recommendations for each individual based on their unique abilities, situation, and life stage. My Journey also facilitates direct connections to state agency resources, assessments, tools, and applications for seamless navigation and task management.

"I tell people to use PAIRIN because the assessment works! It provides a great depiction of people and reflects their behavior accurately. Having that level of insight allows me to create action plans to improve employee performance."

Roy Dockery
Vice President, Swisslog

Why now?

"We're in the worst talent shortage since 2007," according to Inc. magazine. U.S. businesses are struggling to find the right talent, and positions are sitting unfilled. Deloitte estimates that the skills gap will cost the United States \$2.5 trillion over the next decade. There is a 19 percent and growing gap between middle-skill positions and the people available to fill those openings. The only way to effectively address this need is to transform our hiring, education, and workforce markets to focus on competencies.

What is their competitive edge? Why will they succeed?

PAIRIN says it has the most accurate and detailed soft skills assessment available, and can measure 102 attributes in 7-10 minutes. It is the only longitudinal assessment that measures coachable, changeable behaviors and mindsets. And in areas where an individual wants to most develop, PAIRIN gives critical insights to coaches and counselors that accelerates the development process.

What's their big vision? What does that/success look like?

PAIRIN's vision is to be the #1 provider of career exploration and professional development solutions for states that implement both K-12 and adult workforce offerings on a single platform.

Qualified:

Key Performance Indicators

\$22,750

Amount saved on average per hire.

About Qualified

Qualified is built with the goal of providing a developer-friendly way to effectively assess technical skills. Keeping the developer experience as its focus, the company created a format that harnesses real-world tasks and uses integrated testing frameworks for a seamless coding experience. These ideals have built an enterprise-grade and educational-quality platform with developer appeal.

“Qualified gave us a deeper level of insight into each applicant by providing insights into things like ‘how are you applying and thinking through technical questions? And based on the curriculum that we provide, how are you applying that knowledge to answer coding challenges? . . . A lot of our developers were self-taught and so their in-depth understanding of algorithms wasn’t necessarily that high—but they could still build great products, were still mathematical, and could apply the concept of an algorithm to the way that they were building products.”

Maya Neria
Senior Product Manager, Andela

Why now?

Employers are looking for efficient ways to widen their talent pools, minimize bias in the hiring process, and avoid weak performers who seem convincing because of their credentials and past employers. Meanwhile, coding talent is looking for a platform on which they can learn and showcase their skills.

What is their competitive edge? Why will they succeed?

Qualified has developed an assessment system that appeals to developers and is efficient at scale. Typically, they’ve been able to save employers \$22,750 per hire, give employers viable assessments that allow them to equitably and reliably hire on merit, and offer candidates a comfortable environment where they can show their best work.

What’s their big vision? What does that/success look like?

Talent, skills, and abilities are much more evenly distributed among people than opportunity and Qualified aims to find and empower talent from all walks of life.



Key Performance Indicators

10,000

Number of applications started, 4K applications submitted to employers

>60%

Percentage of job seekers who receive offers through Skillist and don't have degrees.

About Skillist

Skillist is a skill-based, identity-blind hiring platform that connects companies seeking entry-level talent to relevant, often overlooked jobseekers. Their application process evaluates candidates on skills and potential rather than credentials. Employers use Skillist to translate job descriptions into a list of relevant skills that are critical to on-the-job success. Candidates use the platform to search and apply for professional, upwardly mobile opportunities that match their skills.

Skillist helped ezCater fill a unique role that most jobseekers are unfamiliar with. By orienting the job description and application on the key skills required, **Skillist made it easier for the hiring team to see transferable skills and select high potential candidates.** Fifty-six percent of applicants advanced to a phone screen after applying, and ultimately 15 percent of those screened candidates were hired. The hired applicants had a diverse set of prior experiences, including frontline retail and service jobs.

Why now?

Sixty-five million Americans have pursued education beyond high school, but don't have a college degree. At the same time, 7 million middle-skill jobs are posted each year and nearly 50 percent of them are unfilled. This is a huge labor market mismatch, and it stems from a broken job application process that Skillist aims to solve.

What is their competitive edge? Why will they succeed?

By working with companies to identify essential skills for on-the-job success and designing a more accessible application process, Skillist substantially broadens the applicant funnel. Instead of collecting the insufficient data of resumes, they obtain rich information about candidates' skills. This helps companies make better hiring decisions and allows them to build a much stronger dataset as well.

What's their big vision? What does that/success look like?

Skillist's long-term vision is to move the labor market to a hiring system that uses skills as a common "currency" to enable more effective hiring and a greater distribution of access to opportunity.



Key Performance Indicators

2x
Expanded pipeline

2x to 3x faster & half cost
Reduced time and costs to hire

65%
Reduced employee turnover

About Vervoe

Vervoe is an AI-powered skill-testing platform that helps companies hire the best candidate by focusing on who can do the job, not who looks good on paper. Vervoe uses machine learning to create tailored skills assessments that allow companies to test candidates for any skill and automatically grade their responses at any scale.

“I love that I’ve been able to consider candidates that I previously wouldn’t have had the time to review, including a candidate who injected passion into her application but had no prior experience. **With Vervoe we could still offer her an opportunity to try out; she was excellent** in her assessment and is doing so well in her job now! She normally would have been screened out.”

Vervoe Client

Why now?

Vervoe uses machine learning to create tailored skills assessments that can be automatically graded. Vervoe has invested heavily in data science and engineering, creating an AI-enabled assessment system allowing their clients to create customized, validated, and relevant skill assessments quickly and affordably.

What is their competitive edge? Why will they succeed?

Because of their initial investments in research and engineering, Vervoe is able to create validated assessments quickly and affordably across all industries, assessing a wide variety of skills and capabilities. Vervoe is also able to support enterprise clients at scale.

What’s their big vision? What does that/success look like?

Every day, wonderful, capable, and passionate people are unfairly excluded from the hiring process for reasons other than whether they can actually do the job. We want every candidate to have an opportunity to showcase their talent. We help companies see how candidates do job-related tasks so they can make hiring decisions based on performance, without bias.



More Great Companies to Watch

After reviewing more than 400 players in the workforce assessment space from across the world, we selected 71 companies for our market scan.

Our market scan features mission-aligned companies and nonprofit organizations of all sizes, from seed-stage startups founded by inspiring innovators and entrepreneurs to growth-stage organizations already creating significant social impact and business value.



Assessment Technology Landscape

Market Scan

This market scan identifies the most promising work technologies that are poised to generate significant social impact and are aligned to particular topic areas.

JFFLabs Accelerator Cohort Partners



Access to Jobs and Career Paths

Career Exploration
Explore job and career opportunities based on interests, aptitude, skills, and/or other dimensions.

Behavior, Personality, Culture, and Fit
Understand a person's personality and/or general qualities which may indicate likelihood of success in a job role, career, education/training program, or on a team.

Selection
Identify people likely to be successful in a particular job role or education/training program.

Skill Assessments

Aptitude
Understand a person's inherent qualities to indicate likelihood of success in a particular role or career, education/training program, on a team, or in other contexts.

Technical Skills
Measure a person's proficiency with a specific skill, task, or assignment.

Human Skills
Understand a person's uniquely "human" skills like communication, critical thinking, ethics and problem-solving. Also commonly referred to as soft-skills, employability skills, 21st Century Skills, and other labels.

Tools, Product, and Innovation

Multidimensional, Virtual Reality, and Others
Simultaneously measures more than one dimension of an individual. For example, an assessment that measures both digital and logic skills simultaneously.

Proctoring & Remote Delivery
Remote delivery of assessment tools and/or supports remote verification of a person's identity.

Authoring & Customization
Supports development and delivery of customized assessment solutions.



JFFLABS

2020 Trends

Accelerating adoption of quality assessment tools is expected to drive positive social impact for workers and learners as well as superior performance for businesses.



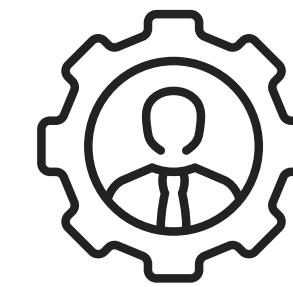
Positive Social Impact

Many of the companies included point to specific examples where implementing their technology improved diversity and created economic advancement opportunities for their employees while also enhancing business performance.



Superior Business Performance

Increased engagement, reduced turnover, and higher rates of productivity are ways that using assessments can help drive stronger business results.



Market Poised for Adoption

Organizations and companies are actively moving to adopt skills-based hiring approaches or are considering whether to adopt these approaches.

Market Dynamics



Technology Drives Down Adoption Costs

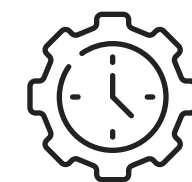
Recent advances in technologies like AI have significantly reduced the costs for employers to implement assessments.

Historically, adopting skills-based hiring approaches has been expensive for companies. For example, less than a decade ago, the costs associated with job profiling could range in the thousands of dollars per job.



Use of Assessments Drives Skills-Based Hiring; U.S. Lags Behind Adoption in Other Markets Like UK, EU, India

In the European Union and the UK, big players like Barclays, Ernst & Young, Lloyds, Microsoft, Aviva, and the UK Civil Service have adopted assessments to improve business results while also driving positive social impact. The rapid growth of the IT sector in India has created high employer demand for skills-based hiring technologies, which have propelled a fast-growing, competitive market for innovative startups.



U.S. Market Poised for Growth, and Adoption Is Accelerating

“A growing group of employers, non-profits, foundations, and technology firms are championing skills-based hiring and providing the tools to support it . . . including IBM’s “New Collar Jobs” effort, Skillful, Opportunity@Work, Lumina Foundation, and the U.S. Chamber of Commerce’s Talent Pipeline Management Initiative, among many others.” (see Northeastern - Educational Credentials Come of Age)

The Investment Case



Adoption Drives Positive Social Impact

There is clear potential for assessments to help talent from broader and more diverse backgrounds “test in” to roles that might not have been available to them using traditional background-based hiring approaches. Expanding adoption of good assessments is yielding corresponding positive social impact.



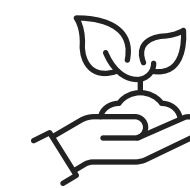
Social Impact Investment Is Advancing

Given the potential for assessment companies to deliver positive social impact, it’s not surprising to see that players like ECMC Foundation, LearnCapital, New Markets Ventures, Rethink Education, Village Capital, and others are active in this space.



Investor Activity Is a Barometer of Strong Market Adoption

Investor activity in the assessments space is robust. For 44 assessment companies that JFFLabs profiled, more than \$3.5 billion in capital has been invested in 179 deals with over 263 venture capital and private equity investors participating. In general, the median deal size for companies raising money has increased sharply over the past two years.



Consolidation and M&A activity indicates that the market is growing and customer demand is robust

Of 44 assessment companies profiled, there have been 13 exits (the point when investors sell their stake to take a profit or a loss). These exits include a \$1 billion merger and a \$350 million IPO.

Investment Activities

Looking at investment activity provides strong signals about momentum and adoption. As assessments are adopted more broadly, we are starting to see early signs of consolidation and concentration as leading solutions come into focus.

44

Companies

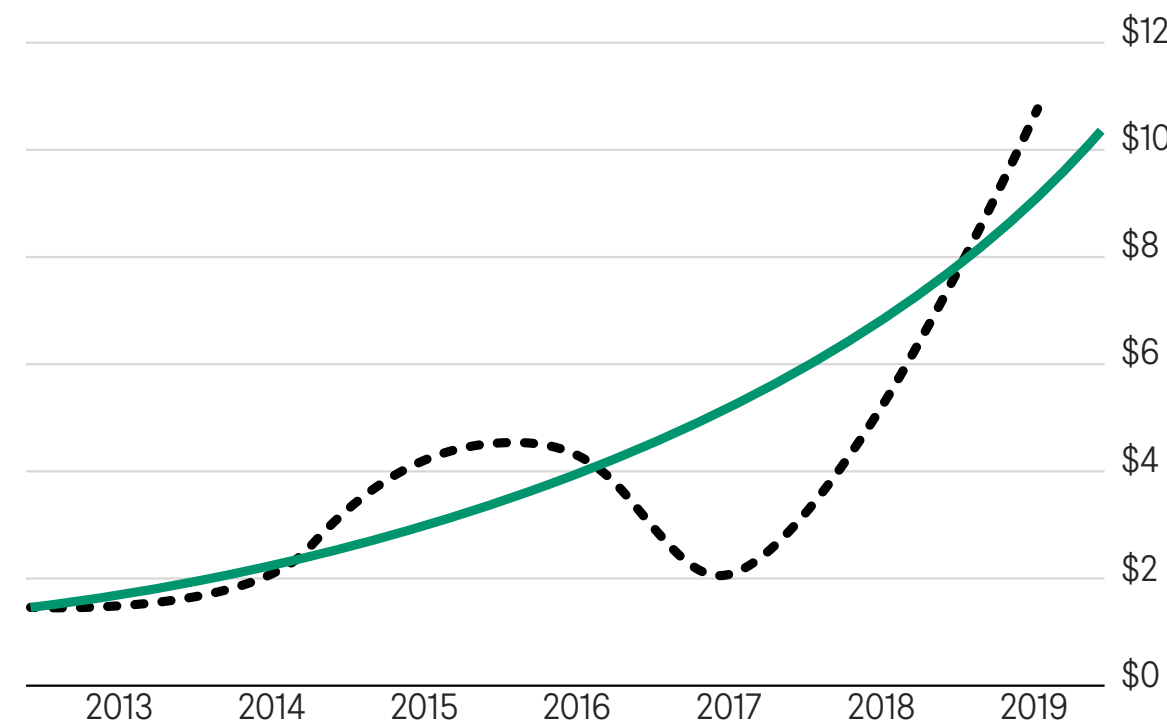
263

Investors

\$3.51B

Invested

Investors Are Placing Bigger Bets



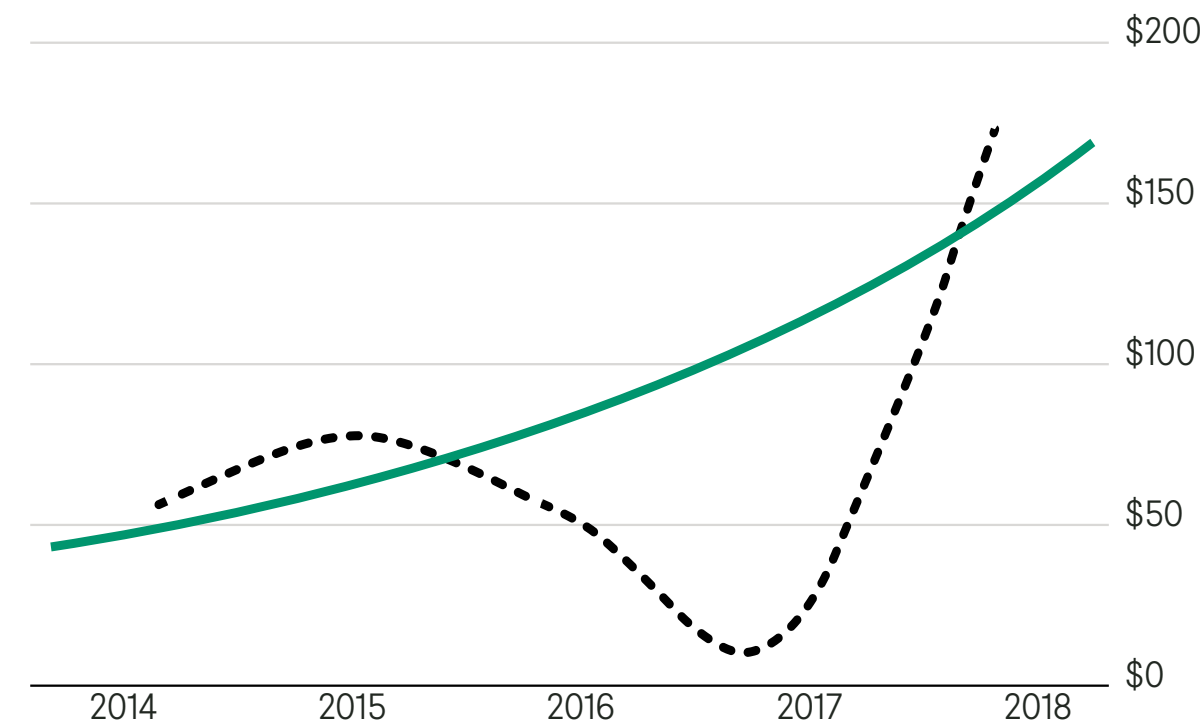
Median Dollars Invested

Increase > 3X since 2014

----- Actual

————— Trend

Valuations Are Increasing



Median Valuations

Increase > 3X since 2014

----- Actual

————— Trend

Lucrative Exits, Market Maturation

13 Exits

Highlights:

- Indeed (\$1B)
- PluralSight (\$1.9B)
- HireVue (Confidential)

2004 to present, based on Pitchbook data.

Technology Optimization



Human Skills

Sometimes called soft skills, human skills include creative problem solving, systems thinking, communication, and other non-technical skills. While assessing critical competencies is not new, we see big strides in using virtual reality, augmented reality, AI, and other innovations to accurately assess these critical skills.



Platform Approach

Numerous companies are emerging with new approaches for assessment and item development and delivery. For example, companies such as Interview Mocha are using a large network of subject matter experts to create items and assessments, allowing them to be almost immediately responsive to client requests and new, emerging skills.



Established Players Developing New Innovations

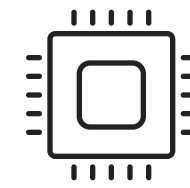
Throughout the market, established players like ACT and ETS are working to evolve their offerings, meeting the needs of education and workforce markets today. For example, ACT Stack is a new offering from ACT that includes their workforce assessments, and through a partnership with Aspiring Minds, now includes technical IT skill evaluation. The ACT Stack platform allows individuals to create unique assessments to suit their specific needs.

Technology Innovation



Use of Virtual and Augmented Reality (VR/AR)

Virtual Reality based assessments are perhaps some of the most exciting areas of innovation in the assessment market today. Within our market scan, Cappfinity, our cohort partner, is an early entrant to this space. The ability to create environments that simulate real-world situations to assess performance may be one of the most active areas in the market in the coming years.



Use of Artificial Intelligence (AI)

On par with the exciting innovations of virtual and augmented reality, artificial intelligence is transforming how assessments are developed, delivered, and scored. For example, our cohort partner Vervoe creates tailored skills assessments that are instantly auto-gradable using machine learning. Other companies similarly use AI to analyze data, and create more nuanced understanding of candidates. As artificial intelligence becomes more sophisticated, expect to see the format, style, and reliability of assessment methodologies evolve and

Conclusions

For decades, companies and organizations have used assessments to evaluate individuals, develop teams, and achieve superior talent performance and productivity.

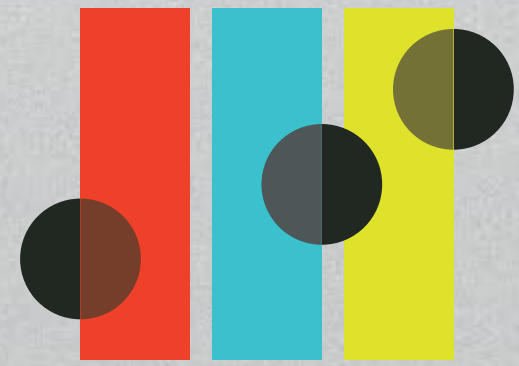
Today's advances in assessment technology help us create accurate, affordable, and efficient systems to evaluate talent based on what they know and what they can do, as opposed to relying on inaccurate signals such as a degree, pedigree, or social and professional network connections.

We have greater opportunities than ever before to leverage assessments in education and training programs—from higher education to apprenticeship to corporate training programs—as well as using assessments to create diverse teams and to achieve superior performance, productivity, and engagement. Assessments are an essential component of an effective talent pipeline, in hiring, and in education and training programs.

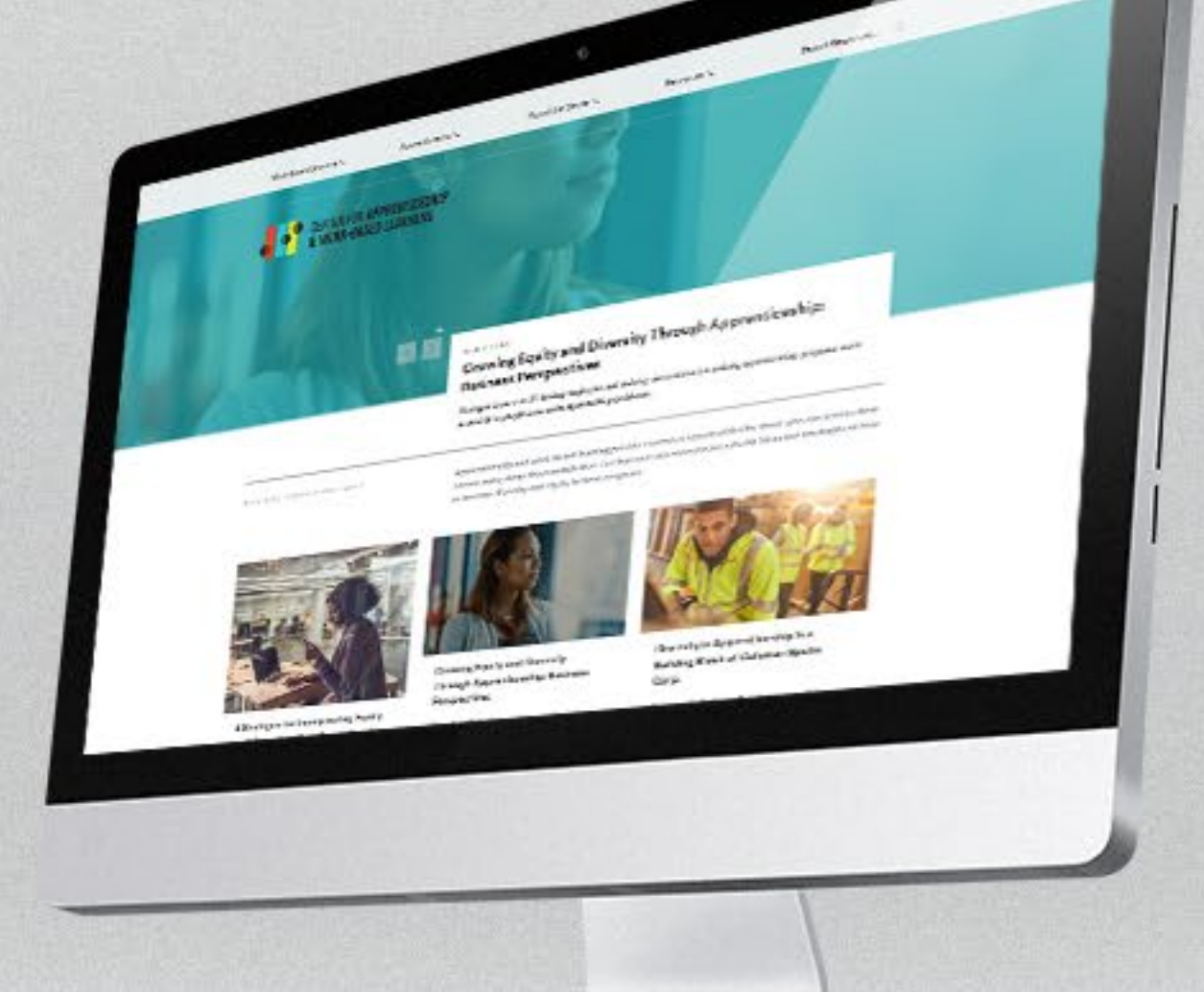
Through our work, we see that assessments will become an even more important tool in the identification, selection, training, and education of individuals across the globe. IT is a particularly vibrant space, and assessments fill a need as demand for workers with IT skills grows exponentially over the next decade.

However, our work is not done. We also see a strong opportunity for additional providers to enter the space, creating even more sophisticated assessments through the use of developing technologies, such as AI and VR. While the assessment space has evolved tremendously, we see a critical need for new assessment technologies and approaches, whether from entrepreneurs entering the space or established players. These solutions would potentially revolutionize how talent is evaluated and would critically support the transformation of education and workforce systems worldwide.

We welcome your feedback and questions. Please contact labs@jff.org



CENTER FOR APPRENTICESHIP & WORK-BASED LEARNING



In Partnership with the Center for Apprenticeship & Work-Based Learning

Launched in 2017, the Center for Apprenticeship & Work-Based Learning provides network and advisory services, training, and resources to employers, policymakers, and workforce development organizations as part of JFF's strategic offerings.

The Center also plays an important role in highlighting innovations that expand opportunities for people of color, women, opportunity youth, people with disabilities, and others who have traditionally been underrepresented in career advancement opportunities and well-paying jobs.

We believe in the power of apprenticeship and work-based learning, and we believe that with better access to the right information and support, this emerging community can drive this movement forward, improve people's lives, strengthen the American workforce, and provide businesses with the skilled workers they need to grow and prosper.

For more information, visit JFF's Center for Apprenticeship & Work-Based Learning, www.jff.org/center.



With Funding from Salesforce

Our Impact Accelerator is designed for entrepreneurs and growth-stage startups offering assessment solutions that will identify, select, and support the training of entry- and middle-skill talent in the IT industry.

The market scan and accelerator cohort are made possible through the generous support of Salesforce.org.

About Salesforce.org

Salesforce.org is the dedicated social impact team of Salesforce that delivers technology to nonprofits, educational institutions, and philanthropic organizations so they can connect with others and do more good. As the heart of Salesforce, we are committed to helping our customers improve the state of the world. www.salesforce.org



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