Counting Credentials, In Context 2025:

The Opportunities of Digital Credentials

DECEMBER 2025
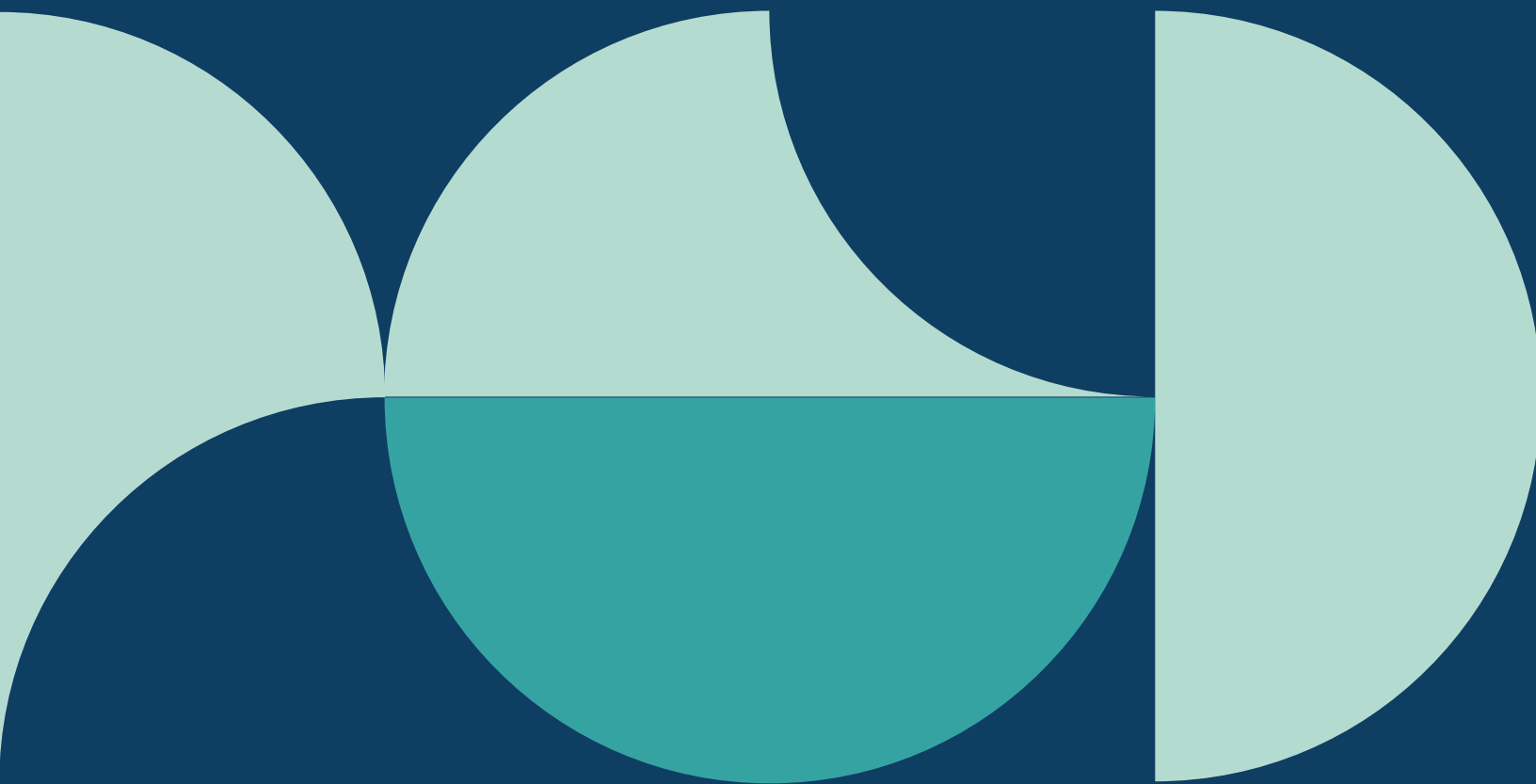
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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LETTER OF INTRODUCTION

Credential Engine's signature research report—the "Counting Credentials" series—has released its 2025 edition.

This "Counting Credentials, In Context" report is the first major companion piece we've issued alongside the Counting Credentials publications. We chose to undertake this report in order to broaden the understanding of the larger ecosystem in which educational and occupational credentials and skills exist, especially as we see an evolution toward the digitization of credentials. We sought to understand the emerging landscape in which these digital credentials are—or should—be used.

While there are significant and groundbreaking developments in the issuing of digital credentials and skills, there is still work to be done on the implementation of digital wallets and records, such as Learning and Employment Records (LERs) and Comprehensive Learner Records, and the deployment of them to learners, workers, and job-seekers.

Further, there is work to be done to have the systems, practices, and policies in place for employers to benefit from these digital resources, and for their use to become standard operating procedure in all workplaces.

But we remain optimistic that the benefits of digitization will prove undeniable and that their adoption will come to pass.

This report provides insights into the changing credential landscape. If you would like to learn more about Credential Engine's ability to help shape the future, we invite your partnership.

Sincerely,

BARBARA GELLMAN-DANLEY
Board Chair
Credential Engine

President
Higher Learning Commission

SCOTT CHENEY
Chief Executive Officer
Credential Engine

ABOUT CREDENTIAL ENGINE

Credential Engine's mission is to bring transparency to all credentials and skills to reveal the marketplace of credentials, increase credential literacy, and allow students, workers, employers, educators, and policy makers to make better informed decisions about credentials and skills, and their value. To achieve this mission, Credential Engine aims to produce a comprehensive, reliable count of every unique credential offered in the United States and improve the uniformity of how all types of credentials and skills are described so they can be searched, discovered, compared, and valued.

Since 2017, Credential Engine has diligently worked to lay bare an increasingly complex landscape of U.S. credentials, and to create the building blocks to make reliable and useful credential information more accessible for students, workers, and the employers who hire them. We have created a common schema, the Credential Transparency Description Language (CTDL), that allows individuals to make "apples-to-apples" comparisons between and among credentials, allowing us to map the connecting points between credentials, skills, qualifications, competencies, jobs, education, and training opportunities—the information that so many have been looking for.

The driving force behind Credential Engine's work has been a lack of clarity about what exactly is available in terms of education and training, the value of credentials and skills in the labor market, and what enables certain individuals to benefit from those opportunities more than others. To create a credential landscape that is transparent—accessible, discoverable, understandable, and navigable—we first must understand the landscape itself. We needed a clearer picture of what we are all dealing with so that we can appropriately act to meet the challenge of full and meaningful credential transparency.

Meaningful credential transparency relies on all of us contributing to and using the information found in the national Credential Registry—an open data, open-access network for timely and trusted information about credentials and skills across states, regions, and the entire country. Data added to the Credential Registry uses the CTDL schema to clarify, connect, and publish the credential and skill information for others to use. The CTDL is regarded as the standard language through which these 1.8 million unique credentials and their skills can be connected, compared, and contrasted—from evaluating whether a credential leads to a specific career and higher wages or if it leads to a higher-level credential, enhancing economic momentum and mobility.

To learn more about Credential Engine and find ways to get involved, please visit **www.credentialengine.org** and/or email **info@credentialengine.org**.

EXECUTIVE SUMMARY

The United States stands at the forefront of credential and skill opportunities never before possible. With more than 1.8 million credentials offered by more than 134,000 providers, the U.S. has the world's most diverse and extensive opportunities for talent development.[1] Yet this very richness presents challenges: How can learners, workers, and employers navigate such a vast marketplace to find the right opportunities? How can people collect and manage the numerous credentials that document their skills and abilities across a lifetime of learning and advancement? How can we most effectively match talent to opportunities?

The answer lies in embracing digital transformation and transparency to make credentials and skills discoverable, comparable, and meaningful. Digital credentials have fundamentally changed how we recognize, validate, and benefit from each person's knowledge, skills, and talent. Unlike their paper predecessors, digital credentials are searchable, verifiable, instantly shareable, and dynamically connected to other systems. They enable distributed credentialing authority, from universities to employers to community organizations, recognizing learning wherever it occurs. Most importantly, digital credentials are learner-centric, giving individuals control over their own records that capture lifelong learning across multiple sources.

A mature technology infrastructure now supports the transformative power of digital credentials. Open Badges provide flexible, verifiable digital representations of achievements. Learning and Employment Records (LERs) combine records from diverse sources into comprehensive representations of what a person knows and can do. Digital wallets offer secure storage and easy sharing.

The Credential Transparency Description Language (CTDL) serves as a common vocabulary, enabling humans, systems, and Artificial Intelligence (AI) applications to understand what credentials represent, how they connect to skills and jobs, and what pathways they enable.

This technological maturity arrives at exactly the right moment. Rapidly evolving skill requirements make continuous upskilling essential. Employers struggle to fill positions, often filtering out qualified candidates who lack traditional degrees. Skills-based hiring is emerging as the solution, but requires trusted, transparent credentials to function at scale. AI amplifies these possibilities, helping learners navigate complex pathways and enabling employers to identify talent through analysis of digital credentials.

The path forward requires creating meaningful digital credentials with rich metadata, recognizing distributed credentialing authority, and empowering everyone with digital wallets. Now is the time for action, to make all learning count for connections to learning and career opportunities.

The future belongs to nations that can most effectively develop and deploy human talent. By embracing digital credentials, the U.S. can transform an apparent challenge—the complexity of 1.8 million credentials—into its greatest competitive advantage. When every credential is discoverable, comparable, and actionable through linked open data, complexity becomes clarity, confusion becomes choice, and chaos becomes opportunity.

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1 Credential Engine. (2025). Counting Credentials 2025. Washington, DC: Credential Engine. https://credentialengine.org/allresources/2025-counting-credentials

Introduction:
A New Era of Credential Opportunity

A Global Credential Powerhouse

Providers in the United States offer an extraordinarily large number of credentials compared to other countries, a distinction that reflects both our nation's dynamic and ever-evolving economy and workplace requirements, as well as our decentralized approach to education and training. U.S. credential providers have created a uniquely flexible and responsive system. The U.S. credential ecosystem combines college and university offerings with innovative alternatives across all levels of learning, from private industry, professional organizations, online platforms, community activities, individual initiative, and more. This diversity represents both advantages and challenges. The advantage lies in unprecedented flexibility and choice. One can find credentials tailored to virtually any career path, skill set, or learning method. The challenge, however, is making sense of this vast marketplace. How does a cybersecurity certificate from a community college compare to a security awareness badge from an online platform? What skills does each credential represent? Which ones do employers value? These questions become answerable when credentials are described using standardized, transparent data structures that allow for comparison and discovery, and these data structures are key to the strength of the U.S. credential marketplace.

The Context of Rapid Change

The transformation of credentials from paper documents to digital assets didn't happen overnight, but the COVID-19 pandemic dramatically accelerated this shift. When campuses closed in 2020, educational institutions had no choice but to quickly pivot from in-person and paper-based services to those that could be provided remotely and digitally. What might have taken a decade of gradual change happened in months. Institutions prioritized a move to electronic transcripts,[2] and a year into the pandemic, more than 60% of all undergraduate students were enrolled in at least one online course.[3]

This rapid digitization fundamentally changed expectations. Students who experienced the convenience of accessing their records online and managing their educational documentation through their phones came to expect these services as the norm. The old model of requesting paper transcripts weeks in advance, paying for each copy, and mailing them to recipients seemed as outdated as using a typewriter.

This digital transformation in education coincided with equally dramatic shifts in the labor market, creating a perfect storm of change. People transitioned to working online and entire job categories were created or eliminated. People came to expect more control over their own time and job choice, accelerating changes in worker mobility. According to a 2024 report from the U.S. Bureau of Labor Statistics, the median length of time employees stay with a company is just 3.9 years.[4] This means the average person may have more than 12 different jobs in the course of their work lives.

Even more striking, the World Economic Forum's 2025 *Future of Jobs Report* reveals that 39% of a worker's existing skills will be transformed or become outdated between 2025-2030.[5] The report points to advances in technology, particularly AI, as key drivers reshaping both the fastest growing and fastest declining jobs. In this context, any model that assumes earning a high quality credential in one's 20s and relying on that for their entire career is not viable. Workers need to continuously update their skills, and they need ways to credibly communicate these evolving capabilities to employers.

2 American Association of Collegiate Registrars and Admissions Officers, "More Schools Implementing Electronic Receipt of Test Scores and Transcripts Due to COVID-19," AACRAO, April 16, 2020, https://www.aacrao.org/who-we-are/newsroom/article/2020/04/16/more-schools-implementing-electronic-receipt-of-test-scores-and-transcripts-due-to-covid-19.
3 Harvard Online, "Shaping the Future of Online Learning," Harvard Online Blog, accessed 2025, https://www.harvardonline.harvard.edu/blog/shaping-future-online-learning.
4 Bureau of Labor Statistics, "Employee Tenure in 2024," news release, 2024, https://www.bls.gov/news.release/pdf/tenure.pdf.
5 World Economic Forum, "The Future of Jobs Report 2025," 2025, https://www.weforum.org/publications/the-future-of-jobs-report-2025/.

The Evolution of Digital Credentials: From Paper to Power

How Digital Credentials Have Changed the World

To understand the revolutionary potential of digital credentials, we must first understand how fundamentally they differ from their paper predecessors. The transformation from paper to digital credentials represents more than a simple format change—it's a complete reimagining of how we recognize, validate, share, and benefit from learning. Credentials are no longer standalone, because digital credentials are backed by data that connects them across the world of learning and work, including verification and evidence of what a person knows and can do.

Key characteristics of digital credentials maximize their benefits in the context of rapid change:

Digital credentials are digital.
This statement might seem obvious, but its implications are profound. When credentials exist as data rather than paper, they become searchable, verifiable, trusted, and connected with other digital systems. A paper certificate can hang on a wall; a digital credential can populate a job application, trigger a salary increase, unlock the next course in a learning pathway, or be discovered by an employer searching for workers with specific skills. The digital format transforms credentials from static, siloed records into powerful, dynamic assets.

Digital credentials are easy to issue, recognizing all types of learning.
In the paper era, issuing a credential required formal processes, official seals, and significant administrative overhead. Today, credential capabilities are embedded in learning platforms everywhere, from online courses to corporate training systems, from community activity tools to professional conference apps. This democratization means that a much wider range of learning can be recognized via digital credentials: completing an online tutorial, participating in a hackathon, mentoring colleagues, or mastering a new AI tool. When issuing a credential is a simple step embedded in these activities, we can more easily realize the potential of recognizing learning wherever it occurs and we see this in the numbers reported in the 2025 Counting Credentials Report.

Digital credentials facilitate distributed authority.
Perhaps no change is more significant than the expansion of who can issue credentials. No longer the sole purview of registrars and superintendents, credential-issuing authority now extends to teachers recognizing specific competencies, supervisors validating on-the-job skills, peers acknowledging collaborative abilities, and industry experts certifying specialized knowledge. Professional organizations and industry bodies have expanded their role as credentialing authorities, often with more market recognition in specialized fields than traditional educational institutions. This distribution of authority means that credentials can be tailored to be specific, timely, and relevant to actual workplace needs.

Digital credentials are learner-centric.
In the paper world, institutions controlled transcripts and charged fees for access. In the digital world, we have the potential for more open access, so that individuals can own and control their earned credentials. They can then aggregate their achievements from multiple sources, combining a traditional degree, employer-issued badges, professional certifications, online course completions, and more into a comprehensive picture of their capabilities. This shift in control fundamentally changes the power dynamic, giving people agency over their own learning narrative.

Digital credentials capture lifelong learning.
Old models viewed education as a ladder, climbing from high school to post-secondary to professional credentials, with each rung making the previous one less relevant. Digital credentials support a more realistic model, where learning is continuous and multidirectional. An engineer might earn a project management certificate mid-career, then add a data ethics badge, while maintaining currency in industry skills through annual recertification. These credentials don't replace each other; they accumulate into a rich picture of evolving expertise.

Digital credentials are easy to share and show off.
The rise of professional networking platforms like LinkedIn, Handshake, or ResearchGate, has fundamentally changed how people present their professional identities. Digital credentials fit naturally into this ecosystem. With a few clicks, a credential can be shared on social media, embedded in an email signature, included in a digital portfolio, or submitted with a job application. And unlike most social media, digital credentials are verifiable and can show proof, using transparent and consistent data. This ease of sharing amplifies the value of credentials, changing them from private achievements into public signals of capability.

The Digital Credential Marketplace and the Technologies That Make It Possible

The marketplace for digital credentials has matured into a massive and increasingly sophisticated ecosystem serving hundreds of millions of people.[6] Understanding this marketplace requires recognizing the different digital credential technologies in use and how they serve complementary purposes in documenting learning and skills.

Digital Transcripts
have evolved beyond electronic versions of paper academic records issued by K–12 and higher education institutions. Innovative digital transcripts can include course-level learning outcomes, skills demonstrated, and links to student portfolios. With the addition of open standards like the Credential Transparency Description Language (CTDL), transcripts can be machine-readable using linked data, so that a system or AI application can parse the skills and knowledge that the credential represents, rather than just showing "Biology 101" or "English 202."

Open Badges
are the most widely adopted innovation in digital credentialing. These open standard digital representations of achievements contain built-in metadata about what was learned and who issued the credential. Unlike a paper credential that can be easily forged, Open Badges are cryptographically signed and instantly verifiable. They can represent anything from completing a course, to mastering a specific occupation technique, to demonstrating leadership in a community project. The flexibility of badges means that a full range of learning achievements from many diverse sources can be recognized, credentialed, and shared. Open Badges are designed to include data in CTDL so that these diverse representations of learning can be consistently described and connected to other credentials, jobs, and pathways.

Learning and Employment Records (LERs)
combine multiple digital credentials, providing comprehensive views of an individual's learning, work, and skills. LERs can include degrees, professional certifications, employer-provided training, military experience, apprenticeships, and validated skills from many different types of organizations and sources. LERs are controlled by the individuals who hold these credentials, not by institutions or product vendors, giving learners and workers the ability to curate and share their full story or selected credentials with employers or education providers.

6 See Badge Count Report 2025 from 1EdTech and Credential Engine. https://content.1edtech.org/badge-count-2025

Digital Wallets

provide a secure storage and management layer for all these digital credentials. Just as people have become comfortable storing their credit cards and driver's licenses in digital wallets on their phones, learning and employment credentials are following the same path. A digital wallet might contain dozens or hundreds of credentials earned over time, all instantly accessible and shareable. The wallet ensures that individuals maintain control over their credentials while making them easy to use when applying for jobs, enrolling in further education, or seeking promotions.

Credential Transparency Description Language (CTDL)

is an open, linked data language that describes credentials, providers, skills, quality assurance, costs, duration, pathways, jobs, outcomes, and more. CTDL is a structured way to represent exactly what a credential is and how it connects to education and work. It serves as a common language for describing credentials in ways humans can understand and machines can interpret, including AI applications that provide more accurate results based on structured data. The power of CTDL comes from its expansive set of terms, combined with linking capabilities. Rather than credentials existing in isolation, CTDL lets credentials tell complete stories. For example, an Open Badge in cybersecurity doesn't just state its name, because it has the power to link to the specific skills it covers, the assessment methods used, the job roles it prepares someone for, other credentials it stacks with, and the average salary increase associated with earning it. CTDL enables transparent, consistent meaning across the digital credential marketplace.
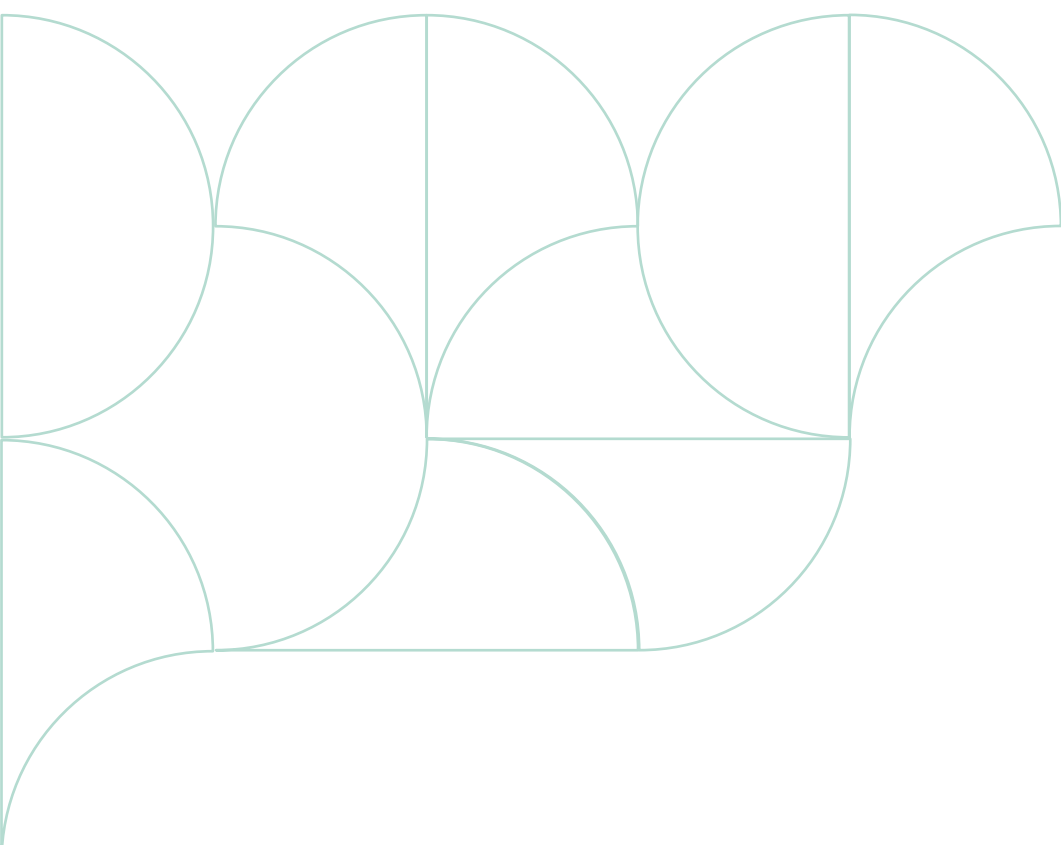
The Current Landscape: Fueling Credential Innovation

The Rise of Skills-Based Hiring and Advancement

The transformative power of digital credentials is advancing at exactly the right moment, as employers fundamentally reconsider how they identify and evaluate talent. The traditional hiring model of filtering candidates by degree requirements and previous job titles is breaking down because it doesn't meet the needs of our rapidly changing economy. A wide range of short-term credentials and skill sets enable more targeted hiring models, and digital credentials are necessary to capture this diversity.

46%

of job seekers are familiar with digital credentials

77%

report that communicating their skills to prospective employers was easy

More people are choosing shorter-term, non-degree credentials because of practical economic drivers. With rising higher education tuition costs and mounting student debt, people question the return on investment of traditional four-year degrees. The average student loan debt now exceeds $39,000, and many graduates struggle to find employment that justifies this investment.[7] Industry-aligned credentials, certificate programs, and targeted training offer alternatives that can be completed in months rather than years, at a fraction of the cost. These credentials are more tailored to the exact sets of skills people are seeking in order to get hired or advance into specific job roles.

A Jobs for the Future 2024 survey reveals how people use the digital credentials they earn through these many different types of education and training. The survey found that 46% of job seekers are familiar with digital credentials, and importantly, one in four have actually used digital credentials in their resume or job application materials. Among those who have used digital credentials, 77% report that communicating their skills to prospective employers was easy, which is a striking contrast to the difficulties many face in explaining the relevance of traditional transcripts to workplace needs.[8]

Digital credentials that represent more granular learning and skills can help address the challenges of matching talent to jobs. According to ManpowerGroup, 71% of U.S. employers can't fill their open positions.[9] This might seem paradoxical when there are millions of job seekers in the U.S.,[10] but a recent Harvard Business School study reveals the problem: 88% of employers acknowledge they are filtering out highly skilled candidates simply because they lack traditional qualifications such as bachelor's degrees or specific previous job titles.[11] These hiring methods create an artificial talent shortage.

This realization, coupled with a rise in non-degree credentials, has sparked a movement toward skills-based hiring. More than half of U.S. state governments have enacted legislation or executive orders encouraging skills-based hiring practices.[12] These policies typically aim to eliminate degree requirements for government positions where degrees aren't essential. And state leaders encourage private employers to follow suit to bolster economic development.

7 Hanson, Melanie. "Student Loan Debt Statistics" EducationData.org, 2025-08-08, https://educationdata.org/student-loan-debt-statistics
8 Jobs for the Future, "Exploring the Role of Digital Wallets and Digital Credentials in a Changing Job Market," 2024, https://www.jff.org/idea/exploring-the-role-of-digital-wallets-and-digital-credentials-in-a-changing-job-market/.
9 ManpowerGroup, "Talent Shortage Survey," accessed 2025, https://go.manpowergroup.com/talent-shortage.
10 https://www.bls.gov/news.release/empsit.t01.htm
11 Joseph Fuller et al., "Hidden Workers: Untapped Talent," Harvard Business School Project on Managing the Future of Work and Accenture, September 2021, https://www.hbs.edu/managing-the-future-of-work/Documents/research/hiddenworkers09032021.pdf.
12 National Governors Association, "Empowering Progress: Harnessing Skills-Based Strategies to Drive Public Sector Excellence," accessed 2025, https://www.nga.org/publications/empowering-progress-harnessing-skills-based-strategies-to-drive-public-sector-excellence/.

Opportunity@Work's *Tear The Paper Ceiling* campaign, launched in 2022, has brought national attention to the more than 70 million workers in the U.S. who are skilled through alternative routes (STARs) rather than through bachelor's degrees.[13] These workers have developed valuable skills in community colleges, military service, certificate programs, bootcamps, on-the-job training, and self-directed learning. The campaign has assembled a coalition of major employers committed to changing their hiring practices, recognizing that talent is equally distributed, but opportunity is not.

However, skills-based hiring faces a critical challenge: how do employers know if candidates have the skills that they claim? Digital credentials become essential here. They can provide data and evidence that make skills-based hiring practical and scalable. A candidate can claim they know Python programming, but a digital credential can specify exactly which Python skills they've demonstrated, how recently they were assessed, and by what authority. This data layer transforms skills-based hiring from an ideal into an operational reality.

The Integration with Daily Digital Life

Digital credentialing is part of a broader shift toward digital identity and documentation. This context is crucial for understanding why digital credentials are positioned for explosive growth.

Consider how rapidly digital wallets have become part of daily life. According to CapitalOne's Digital Wallet Statistics, 53% of Americans use digital wallets more frequently than traditional payment methods.[14] This represents a fundamental shift in how people think about carrying and using important documents and payment methods. The same psychology that makes people comfortable tapping their phone to buy coffee can lead to sharing digital credentials from one's phone when applying for jobs.

The transformation extends to government-issued identification. Seventeen U.S. states and territories now issue digital driver's licenses.[15] These are authoritative and verifiable anchors for a person's identity. They are recognized by the Transportation Security Administration at airports. In some states, residents can store their driver's licenses in their Apple Wallet or Google Wallet, using them for everything from age verification to opening a bank account. By 2026, Gartner predicts that over 500 million smartphone users worldwide will rely on digital identity wallets for verification.[16]

This widespread adoption of digital identity and wallet capabilities creates a powerful expectation: if people can store their driver's license, credit cards, concert tickets, and airline boarding passes digitally and securely, why shouldn't they be able to store and share their educational and professional credentials the same way? This is driving demand from people who want their achievements recognized in formats that fit their digital lifestyles.

These expectations go deeper than just storage and sharing. Digital credentials and records can interact with other digital systems in ways paper never could. A digital badge earned for completing an AI course could automatically update a LinkedIn profile, trigger eligibility for advanced courses, qualify someone for a job interview, or meet requirements for a professional certification. And because digital credentials use transparent open data standards, they flow more effectively through digital ecosystems, creating value at each step.

53%
of Americans use digital wallets more frequently than traditional payment methods

13 Opportunity@Work, "Tear The Paper Ceiling," accessed 2025, https://www.tearthepaperceiling.org/.

14 CapitalOne Shopping, "Digital Wallet Statistics," January 2025, https://capitaloneshopping.com/research/digital-wallet-statistics/.

15 Transportation Security Administration, "Digital ID Participating States," August 2025, https://www.tsa.gov/digital-id/participating-states.

16 https://www.gartner.com/en/newsroom/press-releases/2024-09-24-gartner-predicts-at-least-500-million-smartphone-users-will-be-using-a-digital-identity-wallet-by-2026

The Role of AI in Accelerating Credential Value

AI is revolutionizing how we can discover, understand, and benefit from credentials. AI's ability to process and apply complex information makes it the perfect enabler for navigating a marketplace of 1.8 million credentials.

Consider the challenge facing a mid-career professional who wants to upskill for a data science job. Without AI, they might spend weeks researching different programs, trying to understand prerequisites, comparing employment outcomes, and mapping potential pathways. With AI, they could describe their current skills and career goals in natural language and receive personalized recommendations for credential pathways, including time estimates, cost comparisons, and projected outcomes based on others with similar backgrounds.

AI can also help credential providers improve their offerings. By analyzing job postings, career trajectories, and skill demands,

AI can identify gaps in the credential marketplace and suggest new or revamped credentials that would meet emerging needs. It can help institutions understand which skills are most valued by employers and adjust their programs accordingly. When credentials and skills are described using CTDL, this analysis becomes far more precise and actionable, because AI is much more accurate when it uses structured data.

For employers, AI transforms the challenge of skills-based hiring from overwhelming to manageable. Instead of reviewing hundreds of applicants with diverse credentials, an employer can use AI tools to parse CTDL-described credentials to identify credential holders with the specific skills needed. This doesn't replace human judgment, but instead augments it by ensuring that qualified candidates aren't overlooked simply because their credentials are not understood.

Addressing the Trust Challenge

The digital transformation of credentials brings tremendous opportunities, but it also surfaces new challenges around trust and verification. The same technologies that make it easier to share achievements also make it easier to fabricate them, creating what some call an "arms race" between credential fraud and verification technology.

The proliferation of AI tools has intensified these challenges. Employers report receiving floods of remarkably similar applications, often with identical phrasings and claimed skills, making it difficult to distinguish genuine qualifications from AI-generated fiction.[17] A recent study from StandOutCV revealed disturbing statistics: 64% of people surveyed admitted to lying on their resume at least once, with 29% specifically lying about having a college degree when they didn't.[18]

These trust issues threaten to undermine the entire value proposition of skills-based hiring. If employers can't trust the credentials and skills that candidates present, they may default back to traditional proxies like requiring degrees from known institutions, perpetuating the very barriers that skills-based hiring practices and digital credentials are meant to overcome.

This is where the verification technology architecture of digital credentials becomes crucial. Cryptographic signatures ensure that a digital credential hasn't been tampered with after it is issued. Credential verification standards allow credentials to be verified without contacting the original issuer, protecting the credential holder's privacy while ensuring authenticity.

Equally important is having structured, open, linked data inside the credentials, so that they can be read consistently and interpreted for their intended purpose. Transparent data enables employers to make informed decisions about which credentials to trust, based on how the learning achievements were assessed, by what authority, using what methods, and under what quality assurance structure. Digital credentials provide data to make these distinctions clear, searchable, and interpretable by people and systems.

17 The New York Times, "AI Job Applications," June 21, 2025, https://www.nytimes.com/2025/06/21/business/dealbook/ai-job-applications.html.

18 StandOutCV, "Study: Fake Job References and Resume Lies," accessed 2025, https://standout-cv.com/usa/stats-usa/study-fake-job-references-resume-lies#key-findings.

Unlocking Unprecedented Opportunities

The Path Forward: From Complexity to Clarity

We stand at an inflection point. The U.S. has the world's most diverse credential marketplace of over 1.8 million credentials, powered by technologies that make credentials digital, portable, and transparent. The question now is not whether digital credentials will transform learning and employment, but how quickly we can scale the benefits of these solutions.

The path forward requires continuing to advance several key transformations:

Create and issue meaningful digital credentials.
The technical ability to issue digital credentials already exists in many platforms, but too many of these credentials lack the rich metadata that makes them valuable. By enabling CTDL data structures in credentialing platforms, we can ensure that every credential issued includes clear information about what it represents, how it was earned, and why it matters.

Recognize distributed authority.
The democratization of credentialing has only just begun. We need to continue to expand credential-issuing capabilities to everyone who recognizes learning, from supervisors validating on-the-job training, community organizations teaching employability skills, peers acknowledging collaboration, and individuals self-asserting their own learning with appropriate evidence. Every expansion of credentialing authority creates new opportunities for recognizing valuable skills that traditional systems miss.

Empower everyone with their own digital credentials.
Digital wallets for credentials need to become as ubiquitous as digital wallets for payment. This means making wallets easy to use and integrated with the platforms where people work and learn. It means ensuring that learning and employment records of all types can be automatically added into digital wallets, and that credentials earned decades ago can be used alongside those earned yesterday.

Make all learning count.
The average person develops valuable skills through countless experiences that never result in formal credentials, including solving problems at work, learning from video tutorials, participating in community projects, or mentoring others. Digital credentials create opportunities to recognize and validate these learning experiences, transforming them from invisible assets into visible qualifications for meaningful careers. When we make all learning count, we dramatically expand each person's ability to apply their own talents. When we make all learning count, we increase the human capital available to drive economic growth.

Connect credentials with opportunities.
Credentials only create value when they connect to opportunities. This means making credentials searchable by employers, enabling matching between credentials and job requirements, and creating pathways that show how credentials connect to each other. Credentials described using clear, transparent data empower dynamic career navigation and visualization of new opportunities.

The Challenges That Remain

While progress is clear, challenges remain in fully realizing the potential of digital credentials. Acknowledging these challenges is essential for developing strategies to address them.

Adoption gaps

persist, particularly among smaller employers and educational institutions. While large corporations and universities have resources to implement digital credential systems, smaller organizations often lack technical infrastructure, budgets, and expertise. Bridging this gap requires not just technology solutions but also training and support systems that make digital credentials accessible to all stakeholders.

Quality assurance

becomes more complex as credentialing authority becomes more distributed. When anyone can issue a digital credential, how do we distinguish high-quality, rigorous ones from those with little value? Open data helps by making credential requirements and assessment methods transparent, but the market still needs more diverse mechanisms for quality validation that don't recreate the gatekeeping that digital credentials are meant to overcome.

Cultural change

may be the biggest challenge. Many employers still prefer traditional degrees from recognized institutions, even when non-degree credentials provide valuable skills. Many people still view traditional educational pathways as safer, even when they're more expensive and time-consuming. Changing these deeply embedded cultural preferences will take time and visible success stories.

Measuring Success

As we scale digital credentials, we need robust ways to measure their impact and value. Several key measures are emerging as indicators of success:

Employer perception and adoption

are trending positive. A 2024 report from Collegis Education and UPCEA found that 95% of surveyed employers were at least somewhat familiar with digital credentials, with a majority recognizing their value in demonstrating employee initiative and commitment to continuous learning.[19] K-12 employers in particular have embraced digital credentials for educators, with district-level and state-level policies and incentives in 33 states.[20] And a 2025 Coursera report states that 96% of employers agree that digital credentials strengthen job applications.[21]

Learner and worker benefits

extend beyond employment outcomes. Digital credentials give learners and workers increased self-confidence, expanded awareness of opportunities, and greater control over their career narratives. Digital credentials help them see connections between different learning experiences and identify pathways they hadn't previously considered.

Technology providers like Accredible document high satisfaction rates among people who have earned digital credentials, with 96% considering these credentials valuable for their careers and 92% planning to pursue additional learning.[22]

Economic impact

is beginning to be quantified at scale. California's Mapping Articulated Pathways program projects billions of dollars in savings when students receive appropriate credit for prior learning, which can be documented through digital credentials.[23] And employers recognize that digital credentials reduce costs in hiring and provide cost-effective ways for people to demonstrate skills.[24]

System efficiency improvements and cost savings

are equally important. When credentials are transparent, duplicate and overlapping programs can be identified and consolidated. College transfer credit decisions that once took weeks can happen automatically. Workforce boards can identify credential gaps and surpluses in real-time. These efficiency gains free up resources for improving credential quality and supporting the success of people pursuing these credentials.

19 Collegis Education and UPCEA, "Employer Perception of Microcredentials," 2024, https://collegiseducation.com/insights/employer-perception-microcredentials-infographic/.
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Conclusion:
Maximizing Talent

The United States has one of the world's richest, most diverse (if not the richest and most diverse) landscape of credential opportunities, enabling massive expansion of talent. With over 1.8 million credentials spanning every field of human endeavor, from academic degrees to cutting-edge industry certifications, from apprenticeships to on-line courses, we have credential ecosystems of unprecedented scope and flexibility.

Digital credential technologies and practices, which have been invented, refined, and expanded over the past 15 years, have transformed millions of learning achievements from isolated activities into interconnected pathways for career and economic development. The maturation of open standards makes it possible to navigate this vast marketplace with precision, discovering talent and opportunities that might otherwise remain hidden, and understanding the value of credentials that might otherwise seem opaque.

This is the era of credential and skills opportunities. The very complexity that can feel overwhelming is actually our greatest asset, because it represents millions of ways for Americans to develop valuable skills, advance their careers, and contribute to economic growth. The challenge is not to simplify this ecosystem by reducing options, but to make it navigable through transparency and smart technology.

In this new era of individual empowerment, digital credentials ensure that all learning counts. Whether someone develops skills in a classroom, on a factory floor, through military service, or via online tutorials, those achievements should be recognized, validated, and leveraged. This democratization of credentialing doesn't diminish the value of traditional education. It expands the definition of valuable learning to include the full range of human capability development.

As we navigate rapid workforce changes, digital credentials provide the flexibility and portability needed to ensure no learning goes unrecognized and no talent goes untapped.

We stand at a pivotal moment. The convergence of key factors creates the context for immediate advances:

- The landscape of credentials is rich and diverse, and increasingly more so every day.

- The technical infrastructure for digital credentials is mature and proven; numerous initiatives are underway to make this infrastructure ubiquitous.

- Adoption of standards like Open Badges and CTDL power credential transparency and interoperability.

- Employers are embracing skills-based hiring and advancement.

- Workers need continuous reskilling to remain relevant in an AI-transformed economy.

- Digital wallet adoption has created the expectation of digital documentation.

- AI technologies can help us navigate and optimize complex credential pathways.

They allow workers to adapt quickly to changing demands, employers to find the skills they need regardless of where those skills were developed, and educators to design programs that respond to real market needs.
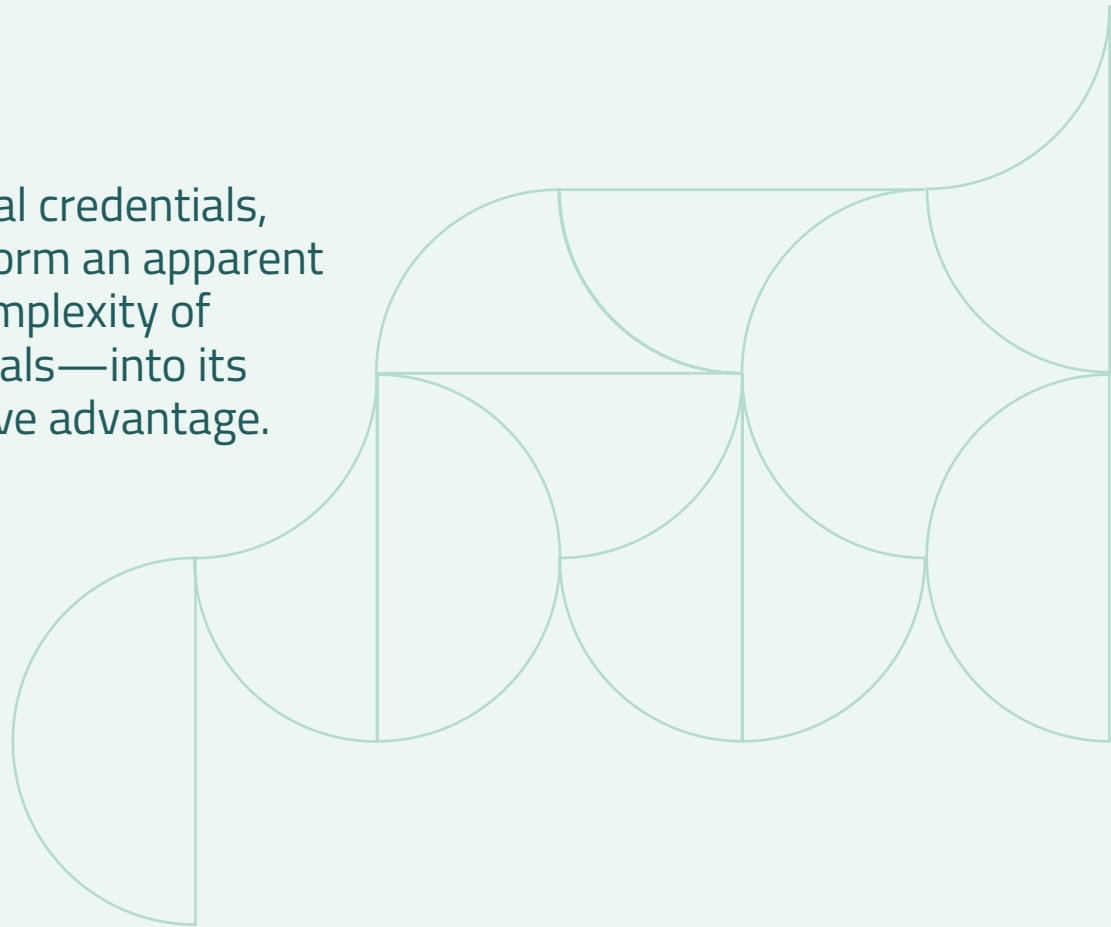
The economic implications are staggering. When we can efficiently match the skills of workers with available jobs, when we can reduce the time and cost of education and training through recognition of prior learning, when we can help workers reskill quickly for emerging roles, we unlock trillions of dollars in economic potential. This isn't just about individual success stories–it's about national competitiveness in a global economy where human capital is the ultimate differentiator.

The question is not whether we should embrace the opportunities of digital credentials, but how quickly we can scale them to benefit all Americans. We must build a more adaptable workforce that can meet whatever challenges the future brings. Every day we delay is a day where qualified workers are rejected for lacking traditional credentials, where valuable talents go unrecognized, and where learning happens but isn't counted. The data infrastructure exists, the

technologies are ready, and the need is urgent.

The future belongs to nations that can most effectively develop and deploy human talent. By embracing digital credentials, the U.S. can transform an apparent challenge—the complexity of 1.8 million credentials—into its greatest competitive advantage. When every credential is discoverable, comparable, and actionable through linked open data, complexity becomes clarity, confusion becomes choice, and chaos becomes opportunity.

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