



Skills-Based Hiring and Advancement: WIAC Discussion

January 25, 2023

U.S. Chamber of Commerce
Foundation

T3 INNOVATION
NETWORK



Agenda

- I. Welcome from Pam
- II. Purpose
- III. Background
 - A. SBHA Overview
 - B. Related Chamber Projects
- IV. Break
- V. Discussion

Discussion Topics After the Break

How can government promote open access and use of better skills information to inform policymakers, organizations, and individuals?

- Desired Outcomes
- Challenges
- Solutions
- Open Questions / Catchall

Discussion Purpose:

How can government promote open access and use of better skills information to inform policymakers, organizations, and individuals?



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Background

USCCF T3 Innovation Network



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The T3 Innovation Network's mission is to enable

the digital transformation of the talent marketplace by promoting data interoperability and harmonization across diverse stakeholders

This digital transformation will ensure that:

- all learning counts
- skills are used like currency
- learners and workers are empowered with data to pursue education and employment opportunities

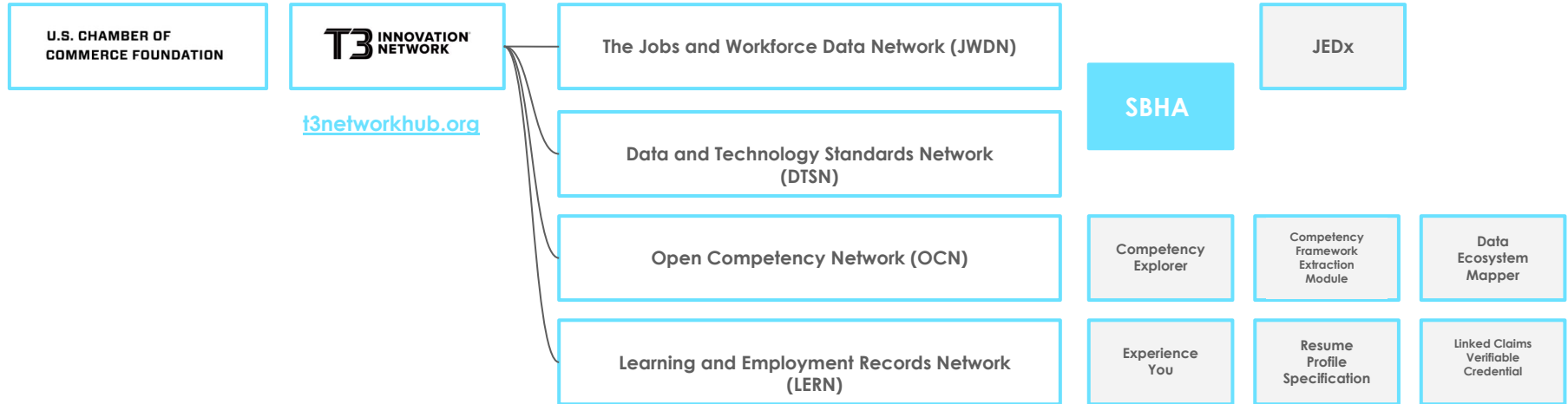
In 2018, **Phase 1** identified data interoperability challenges and developed a roadmap to address them.

From 2019-2022, **Phase 2** implemented the roadmap through eight projects.

The T3 “Network of Networks” convenes, aligns, and supports stakeholders working on core data infrastructure components:

- **Data and Technology Standards (DTS) Network**
- **Open Competencies (OC) Network**
- **Learning and Employment Records Network (LERN)**
- **Jobs and Workforce Data (JWD) Network**

USCCF Priorities



Skills-Based Hiring & Advancement (SBHA)

Project Team



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U.S. Chamber of Commerce
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DTSN Facilitator
Senior Analyst, QIP
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Jim Ireland

JWDN Co-Chair
Executive Director,
HR Open Standards Consortium



Alex Jackl

DTSN Co-Chair
CEO & Founder, Bardic Systems



Danielle Saunders

T3 SBHA & DESM Projects
Workforce Consultant

SBHA

Helps access and expand the talent pool and increase economic mobility.

Matches a work opportunity's requirements to a candidate's capabilities through:

- Validated job requirements
- Robust candidate information
- Skills-powered guidance services
- Fairer hiring and advancement experiences



"Skills"

We use skills broadly as shorthand for all types of measurable statements or assertions about what an individual knows and is able to do.

This includes validated statements about critical work tasks or activities and the key worker attributes or capabilities (e.g., knowledge, skills, abilities, and other characteristics) needed to successfully perform them within a work context. Also statements or assertions about previous job task performance and achievements in work histories with references and endorsements, credentialing assessment results verifying work task performance, knowledge, skills, and/or abilities, as well as learning outcomes assessed and verified by education and training providers. This broad definition of skills includes what some refer to as competencies from employer, educator, and job candidate perspectives.

Examples

Culture and Communication
Describe the roles of culture and bias in interpreting and conveying information
(SNHU Competency Framework)

Workplace Competencies:
Adaptability and Flexibility:
Entertaining new ideas:
Is open to considering new ways of doing things
(US DOL ETA Automation Competency Model)

Takes steps to mitigate the influence of bias in HR and business decisions.
(SHRM Body of Applied Skills and Knowledge)

Market Conditions

- Struggle for **qualified talent**
- Demand for **reskilling & occupational agility**
- Pre-hire **skill-based assessments**
- **Digital credentials** are too opaque
- Struggle to **explain skills**
- Lack of **career pathways** and **education-to-career pathways**
- Dynamic **job and skills architectures**
- **Soft skills** are core

Leveraging transparency in skills data, especially for Durable Skills, is the key lever in making organizational development and competitive advantage a reality.

- Alexander Alonso, Ph.D., SHRM-SCP, Chief Knowledge Officer,
Society for Human Resource Managers (SHRM)

Private-Sector Skills Tech

SkillsTech Market Matures

SkillsTech Applications



SkillsTech Tools and Middleware



Talent Intelligence Platforms



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Future Vision: Predicting Performance

An ability to **predict performance on the job** means:

- Decisions about the workforce based on skills more than on jobs
- Reduced disparate impacts in hiring/advancement processes
- Education/training and employer needs are aligned to close skills gaps
- Increased enrollment and completion through a clear connection between education/training programs and careers

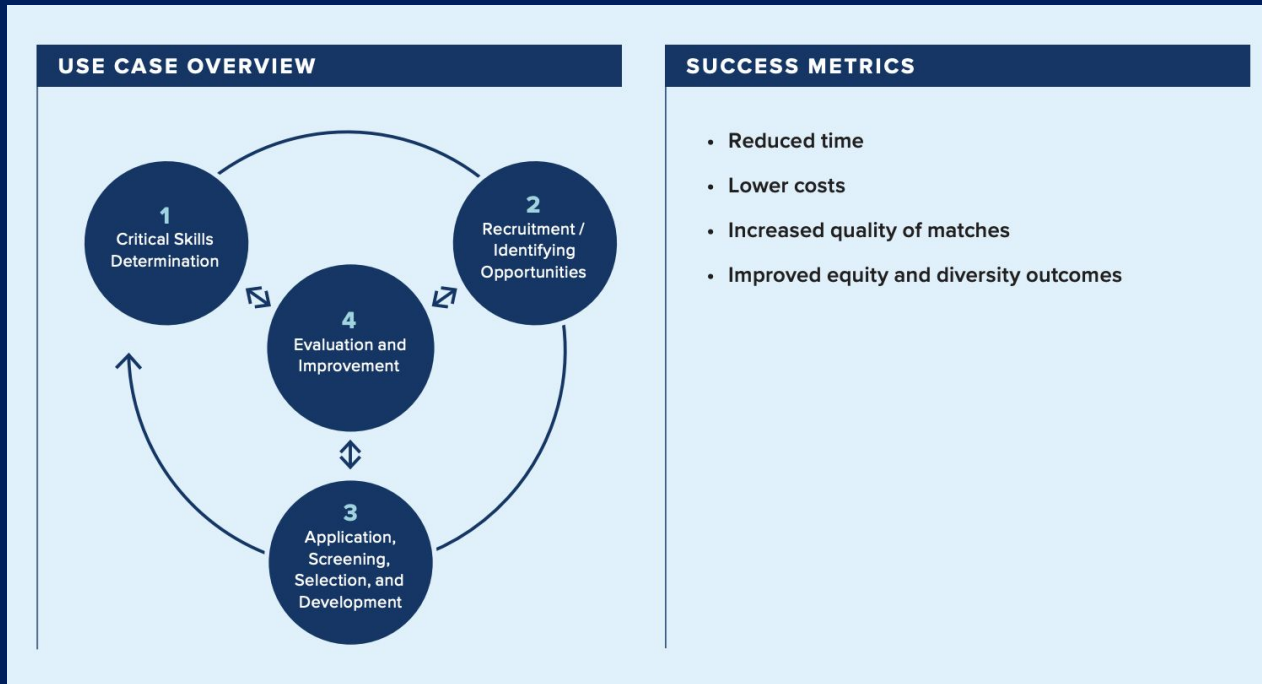
Original Project Objectives

- Develop a comprehensive set of end-to-end use cases for employers and candidates with related success metrics
- Explore their implications for T3 Networks and the broader community

Project Expansion

- Add education/training providers, who can improve employer ability to predict and plan performance and learner/worker ability to obtain skills needed to get hired or advance

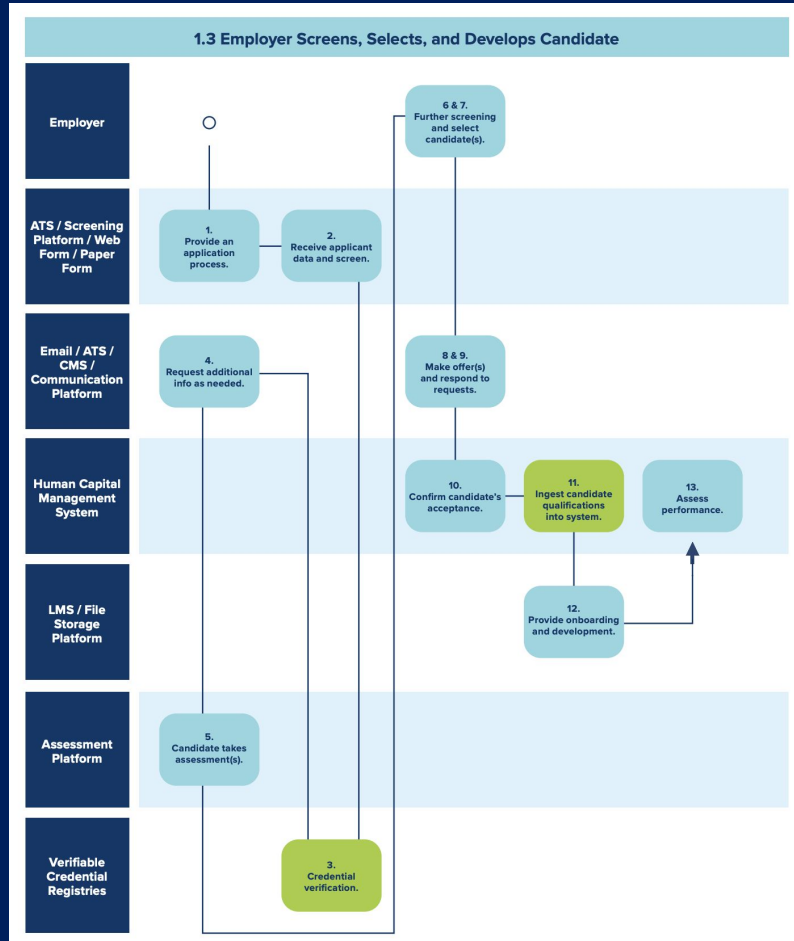
Use Case Overview



Priority Use Cases

		User Types	
		Employer	Internal & External Candidates
Categories	Critical Skills Determination	1.1 Employer Determines Critical Skill Requirements	2.1 Candidate Develops Critical Skills
	Recruitment / Identifying Opportunities	1.2 Employer Shares Job Opportunities and Recruits Candidates	2.2 Candidate Identifies Job Opportunities
	Application, Screening, Selection, and Development	1.3 Employer Screens, Selects, and Develops Candidate	2.3 Candidate Participates in Employer Screening, Selection, and Development
	Evaluation and Improvement	1.4 Employer Evaluates and Improves Outcomes	2.4 Candidate Evaluates and Improves Outcomes

Swimlane Diagrams of the Use Cases



1. Employer provides an application process that may include application forms, the uploading of applicant resumes, and other application materials, including a space for any LERs, digital credentials, and/or presentations.
2. Employer processes and organizes applicant data for comparing to job requirements, possibly including AI-based prescreening. The prescreening process uses intelligent skill matching which goes beyond string matching. It also is able to recognize alternative credentials. Rejected applicants are informed promptly.
3. Employer verifies verifiable credentials.
4. Employer requests additional information as needed to complete application process.
5. ...

Points of Failure

POINTS OF FAILURE SUMMARY

	POINT OF FAILURE	POTENTIAL SOLUTIONS
A	Job Data: Limited Access to and Use of High Quality Job Benchmark Data	Promote open access to structured data on jobs and job openings as well as related industry data.
B	Skill Frameworks: Limited Access to and Use of High Quality and Dynamic Open Competency and Skill Frameworks	Create guidance and tools for search and discovery for relevant competency and skill frameworks available through open networks.
C	Structured Data: Lack of Standards-based Machine-Readable Structured Data Including Skills Data	Promote the development and use of standards in creating machine-readable job descriptions/postings, resumes, LERs, and education/training program descriptions. Create resources, tutorials, and awareness campaigns to encourage the adoption and use of these standards.
D	Skill Descriptions: Skill Descriptions are Inadequate	Develop awareness and training resources that leverage standard recommended practices for well-defined competency definition including writing in standard formats that aid in computer processing and use of online skills networks and tools. While there will be no "common skills language," people writing competencies can choose which standard recommended practices and formats work best for them.
E	Algorithms: Limited Development and Use of Translation and Analysis Algorithms	Improve algorithm and AI development and use for skills translation and analysis, particularly for the determination of matches between employer requirements and candidate skills.
F	Interoperability: Lack of Data Interoperability and Sharing for More Effective Feedback and Advanced Data Analytics	Promote the alignment of standards for job descriptions/postings, resumes, LERs, and education/training program descriptions. Promote data sharing for improving feedback cycles for employers and candidates and advanced data analytics while protecting privacy.
G	Assessments: Lack of Reliable, Valid, and Aligned Assessments for Evaluation and Feedback	Improve the validity, reliability and alignment of assessments and how they may be better used for evaluation and feedback for employers and job candidates.
H	Employer Capacity: Limited Employer Leadership Commitment and HR Process Design and Management	Provide guidance and promote leading employer practices in skills-based hiring and advancement
I	Candidate Capacity: Limited Capacity of Job Candidates and Guidance Services and Systems	Promote leading practices in career guidance services and systems and build the capacity of job candidates to utilize them.

USCCF Priorities

- Employer skill requirement development, validation, and effective communication
- Developing and using algorithms for skills analysis
- Career guidance and job search assistance services and systems
- Developing the standards-based data infrastructure
- Communicating the value of SBHA

Leading SBHA Practices For Education/Training Providers

1. **Understand Role Requirements**

Determine a role's specific performance requirements, context of performance, and level/progression (e.g. L3 software engineer)

2. **Create/Align Content**

Create or align learning objectives, content, and instructional methodologies to better meet the performance requirements

3. **Set Learner Readiness Cutoffs**

Set learner entrance / eligibility requirements

4. **Align Assessments**

Assess to predict performance based on how employers screen and evaluate performance

5. **Issue Digital Credentials**

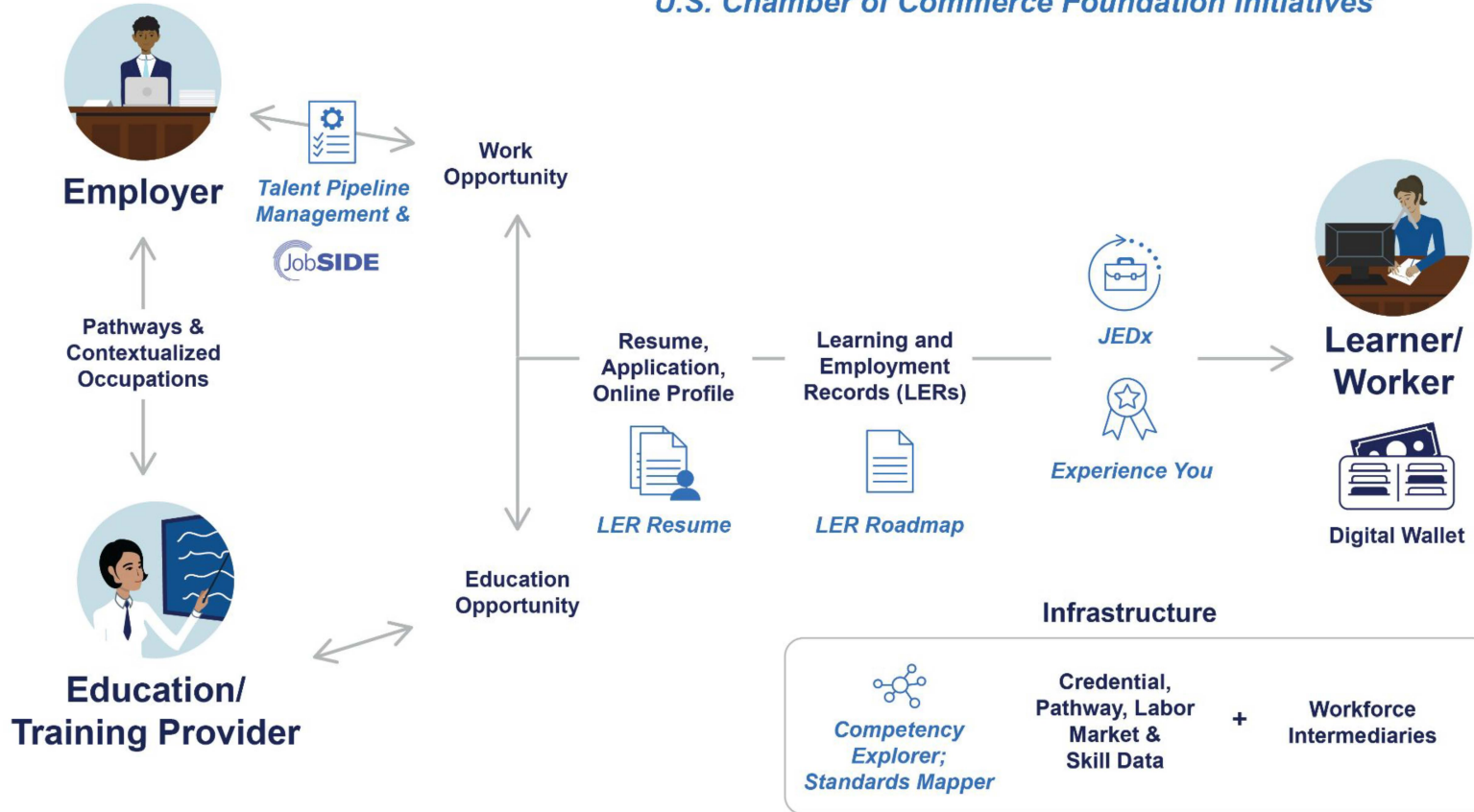
Provide students with employer-friendly records

6. **Improve Continuously Using Outcomes Data**

Collect data from alumni and employers, analyze, and implement findings

Skills-Based Hiring and Advancement Future Ecosystem

U.S. Chamber of Commerce Foundation Initiatives



Case Studies

We'd like to interview education/training providers who are aligned with skills-based hiring efforts spanning these areas:

- Military
- Healthcare
- Blue collar
- Frontline worker
- Postsecondary
- CTE
- Small business
- Flagship, high-tech implementation

Please suggest anyone we should reach out to!

SBHA and Military Careers

Military Services use skill identifiers in addition to occupational taxonomies and descriptions.

- Criteria for earning the skill identifier may include formal military or civilian coursework and/or work experience and supervisor evaluation
 - Example: An occupation of Software Developer or Computer Programmer might have additional skill identifiers to further clarify the skills required to perform in a specific position.
 - Each Service has specific occupational codes (e.g. Air Force Specialty Codes (AFSCs) include skill level requirements)
 - Each Service has taxonomies for identifying skills (e.g. Air Force Special Experience Identifiers (SEIs))

SEI_CODE	TITLE	REQ
7BH	Agile Software Development-Artificial Intelligence (AI) Algorithm Developer	Description: Designs, develops, and implements enterprise-scale Artificial Intelligence (AI) and Machine Learning (ML) models and algorithms solutions. Award Requires: (1) 6 months experience performing Agile Software Development AI Algorithm Developer duties [<i>*in specific AFSCs</i>] and commander's recommendation; (2) or similar Agile Software Development experience as well as commander's recommendation and 1D7 AF Career Field Manager (AFCFM) approval or similar units with Career Field Manager (CFM) approval.
9IL	AI Lead	Requires successful completion of LEAD, DRIVE or equivalent program and six (6) months of full-time experience leading an artificial intelligence team. NOTE: Award and removal of the SEI must be coordinated through SAF/AQ.MIT.
9IM	Machine Learning	Requires Masters of Science degree in Machine Learning or Deep Learning from accredited university. NOTE: Award and removal of the SEI must be coordinated through SAF/AQ.MIT.

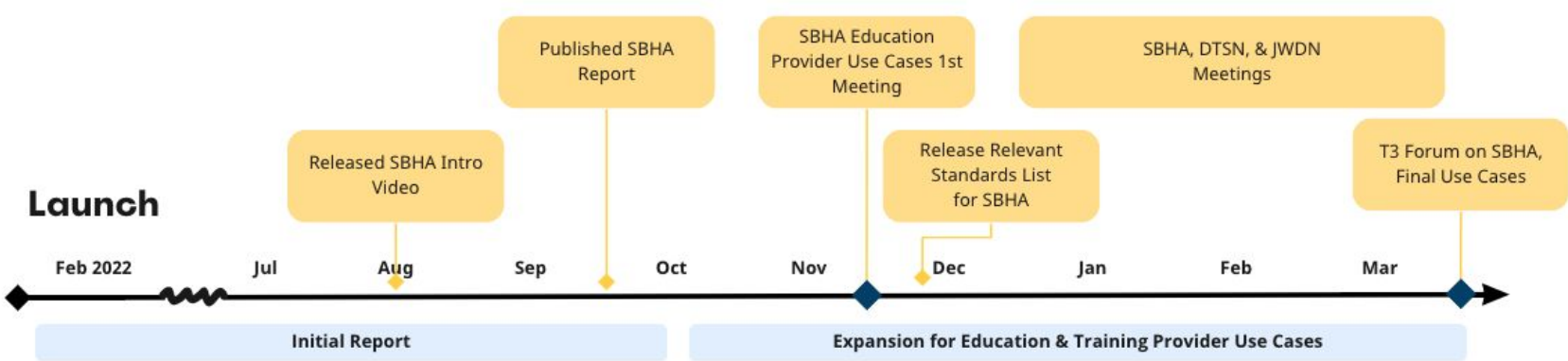
- In many cases, career progression specifies requirements for attaining skill designations (skills-based training and advancement is built into the career progression system)

Army SBHA Example

Skills Based Training is actively being used in the military to decrease training time and increase training effectiveness

- (example: (Army MOS 91J (quartermaster chemical equipment repair) course teaches how to diagnose electrical faults on multiple water purification units vs. just one piece of equipment. Learners get hands on practice)
 - Represents a shift towards training transferable skills vs how to fix a specific piece of equipment
 - Training and credentialing programs are part of a lifelong learning philosophy that will offer skills transferability when a servicemember transitions to the civilian workforce

SBHA Project Milestones



How SBHA and Digital Credentials Work Together

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Ecosystem Components



Employer Job Descriptions Will Contain:

- Relevant skills, education, credentials, & experience
- Physical, legal, location, & permit requirements
- Links to skills that enable easy comparison
- Distinctions between preferences and requirements

Digital and Human Intermediaries Connect the Pieces:

- Job boards
- Employer career sites
- Staffing firms
- Social networks
- Internal referrals
- Search engines
- Gig platforms
- Job and career centers
- Community-based organizations

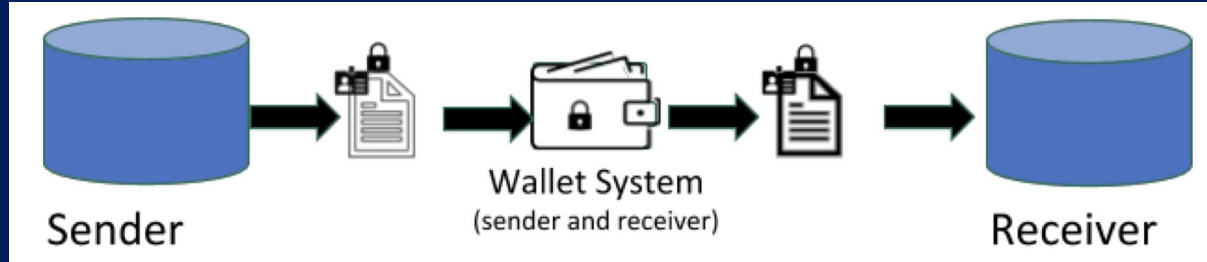
Resumes Will Contain:

- Contents like a narrative/objective, work and other experience, credentials including degrees, badges, certificates, and certifications
- All of which can be precisely linked to records, evidence, skills, and competencies

Digital Wallets Will Contain:

- Resumes/CVs
- Records issued by employers and education/training providers
- Assessment results
- Other evidence of achievements like work samples
- Identity and immunization records
- Licenses and permits
- All can be stored with proof of authenticity

Current Digital Credential Technology

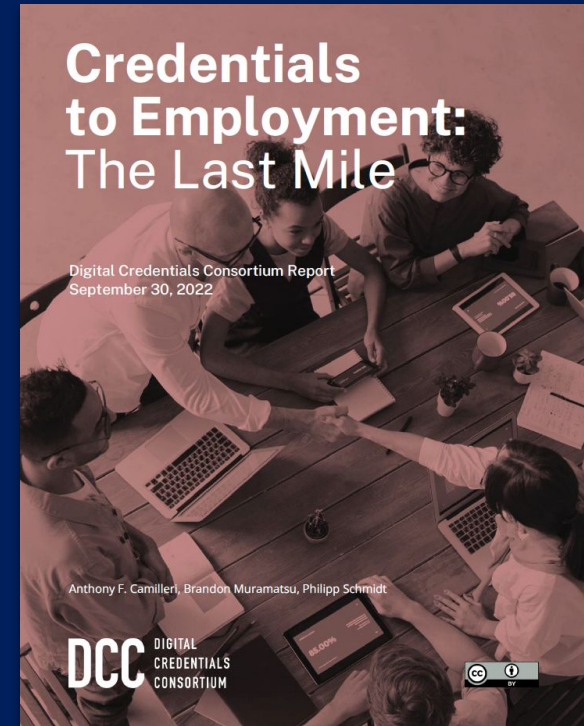


Verifiability Is Not Enough

"Employers do not consider improved verifiability a strong enough incentive to move from traditional credentials to digital versions of these credentials. Verification alone... is not considered to generate sufficient business value to justify the cost of updating technology systems and workflows."

- Digital Credentials Consortium (DCC)

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Employers Want A Larger Shift

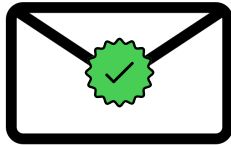
A "paradigm shift" of skills-based hiring and lifelong learning supported by validated signals from providers and employers merits large-scale change

Digital Credentials Consortium (DCC)

Two Sides to Trust in Skills-Based Hiring and Advancement

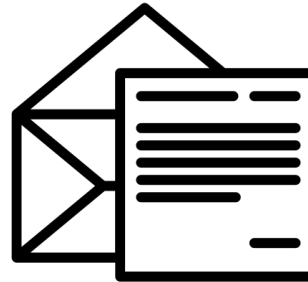
Verification

seals an envelope around a record to ensure authenticity



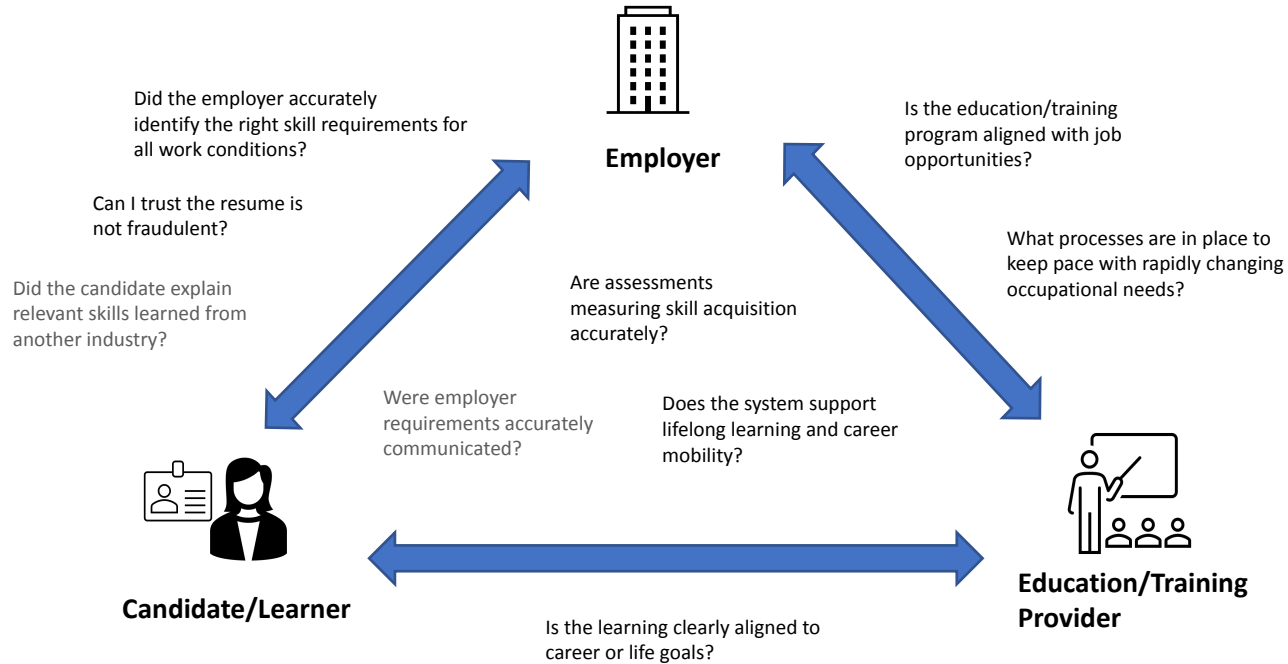
Validation

makes sure the record contents can be predictive of success in the position based on validated employer requirements



Employer Requirements

Trust Roadblocks



Two Sides to Trust

- **Verification:** The LER ecosystem offers **verifiable** learning and employment records:
 - allow employers to trust that digital credentials received directly from candidates are **authentic** (not tampered with)
 - and the identity of LER issuers are **authentic**
 - this addresses the trusted exchange of information, not that the information is aligned with employer needs
 - LERs are the "buckets" that carry authentic information.

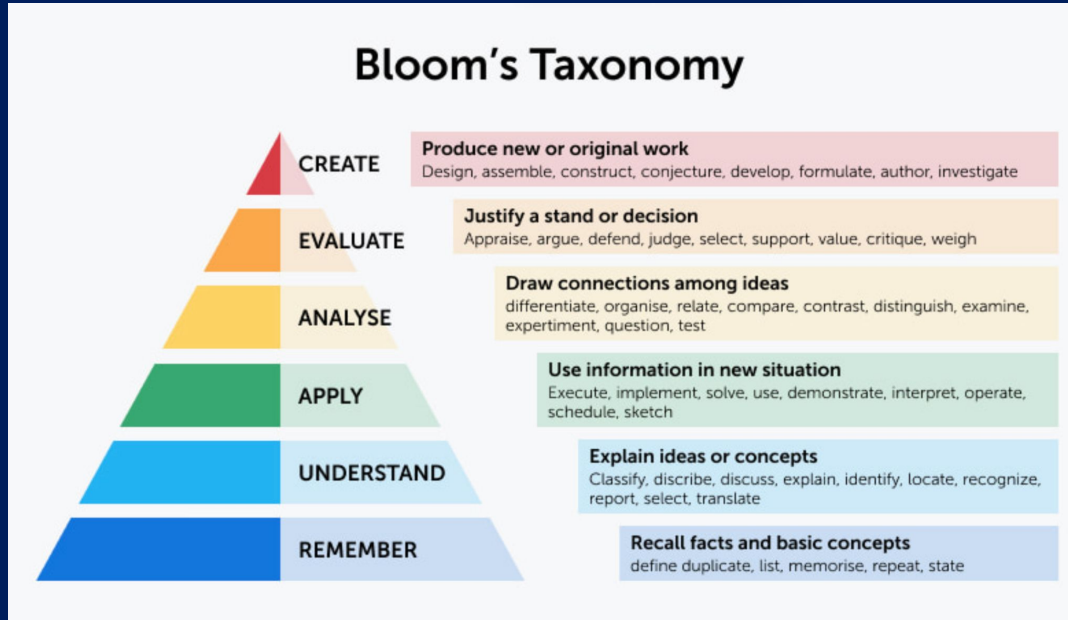
Employers, education providers, and candidates in skills-based hiring also need trust in the meaning and applicability of LERs.

- **Validation:** Trustable prediction of performance also requires:
 - Employer transparency of **skills and evidence** needed to get or advance in a job
 - Validation that **assessment** by education and training providers used to issue competency-based credentials meet evidence and predict performance on the job
 - Trust that programs of learning lead to competence in employable skills

Mismatch Example

Education/training often assesses at a low level of Bloom's Taxonomy

Whereas employers often want to predict performance on tasks that require higher-order competence

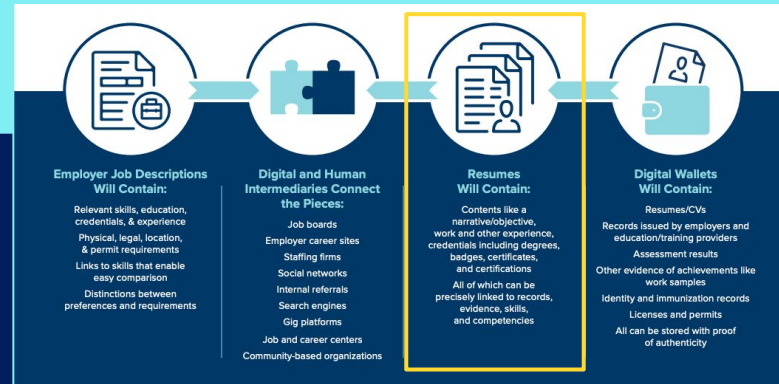


Related Chamber Foundation Projects

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Resume CV Standard



Resume/CV Standard

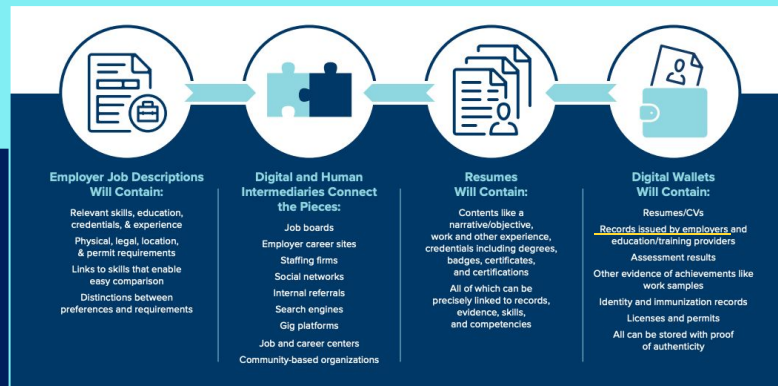
Goals

- Adopt structured LER credentials, as issued by formal bodies & self-issued
- Support phased adoption change model
- Minimize changes to existing architectures
- Leverage emerging decentralized design for equity and agency of all parties

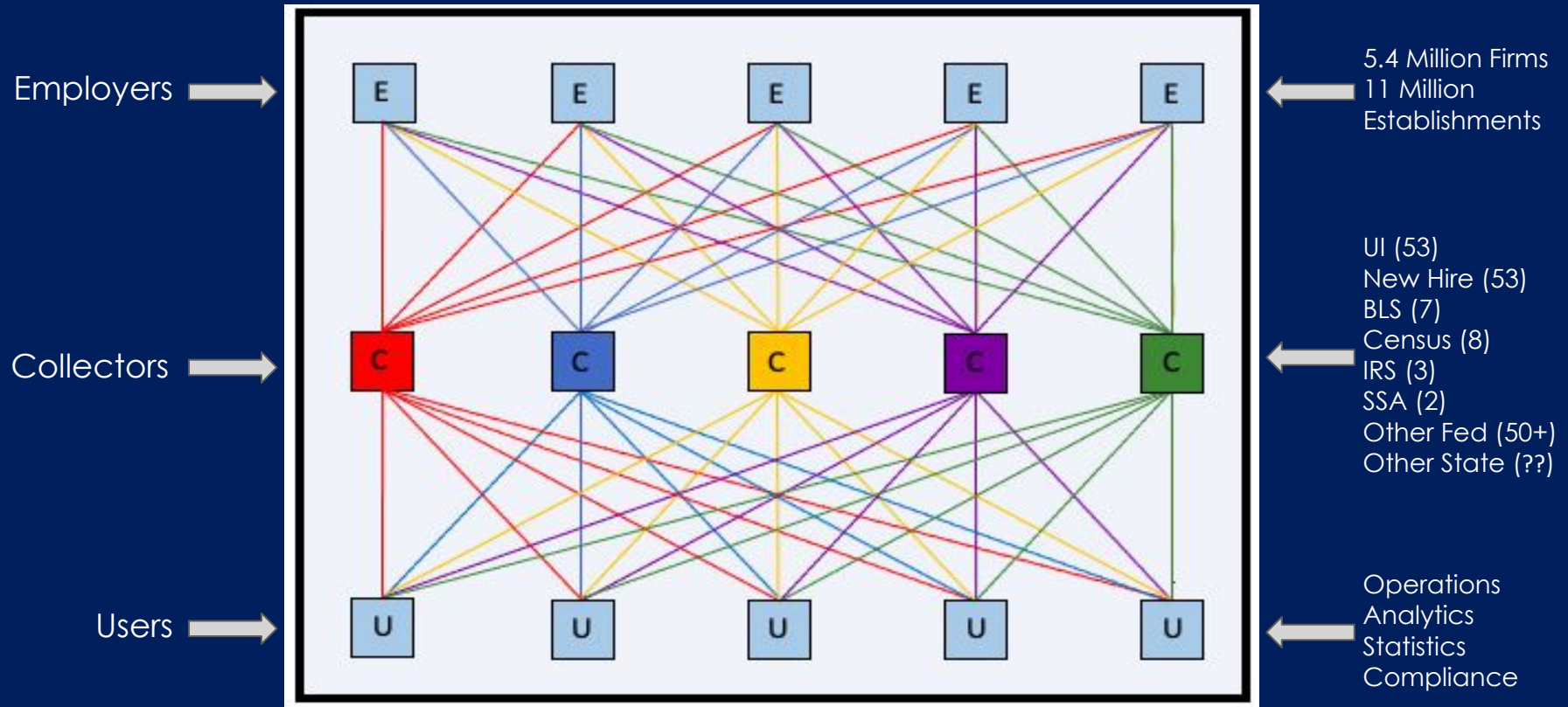
Options

- Resume as a *Verifiable Presentation* of LERs
- Resume as LER self-authored structured narrative *linked* to supporting LERs substantiating claims and additional digital objects.
- Hybrid of the above with LER envelope carrying payloads of varying content types & unique identifiers (eg., LER, XML, PDF, etc. payloads, with unique identifiers ranging from email addresses to DIDs)

JEDx



Current State: UI Data Collection and Use in Context



JEDx Architecture

- **Employer Reporting to Federal and State Governments**
Reducing costs and improving data quality in employer reporting to federal and state governments for program administration and economic statistics
- **Public and Private Workforce Analytics**
Improving access and use of more comprehensive workforce analytics services for employers, learners/workers, and government agencies, including government labor market information and evidence-based policy and research
- **Learner/Worker Empowerment and Trusted Records**
Empowering people to use their own verifiable employment and earnings records to apply for career and educational opportunities and government programs and benefits—building on the T3 Network’s work in support of Learning and Employment Records (LERs)

JEDx Pilot Phases

0

- **Bridging from Design Phase to Pilot Phase**

1

- **JEDx Sandbox Team**—Develops and tests JEDx sandbox environment with privacy obligation metadata and state deployment provisioning capabilities
- Push simulated data to a JEDx “Sandbox” via JDX Standard API, manual web form, or upload
- **Collectors & Submitters**—Define plan for agencies to receive enhanced collection

2

- **Collection Partners**—Deploy an instance of the JEDx “Sandbox”
- Push simulated data to state JEDx instance.
- **Collection Partners** - Plan, recruit employer partners and test process to incorporate JEDx collection alongside existing systems, processes, and uses

3

- **Submitters**—Pilot pushing real data with default privacy obligation metadata using the JEDx API into a JEDx environment and sharing data to support existing collection processes
- Develop and test the use of JEDx enhanced data to support existing and novel use cases

4

- **Stakeholders** integrate richer data sets from JEDx pilot into processes, such as UI fraud and error detection, implementing JEDx value to collectors and submitters
- **JEDx Stakeholders**—Decide on data governance for public-private partnership

Show what is Possible

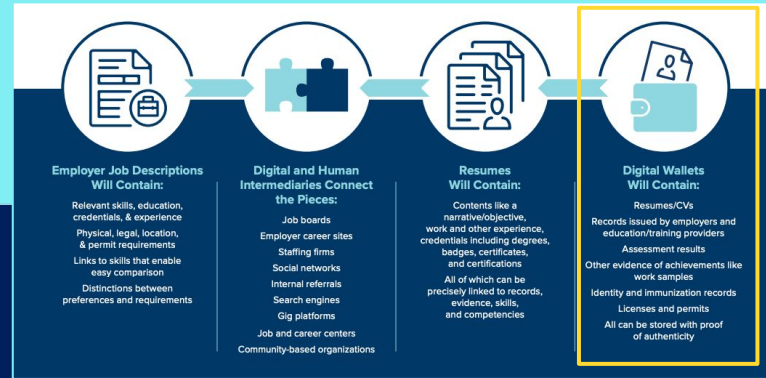
Support what is Feasible



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JEDx

LER Roadmap



Overview

Create a **map of the LER ecosystem** to provide a shared vision, identify areas of leverage & opportunities for intervention, and guide our coordinated action.

- Facilitated by **NationSwell**
- Stewarded by a group of neutral organizations
 - Brookings Institution
 - Digital Credentials Consortium
 - Digital Promise
 - Jobs for the Future
 - National Governors Association
 - National Association of Workforce Boards
 - SHRM
 - T3
- Extensive research to build on existing know-how
- Multiple touchpoints for stakeholder engagement
- A resources for and by the community
- Supported by Walmart, informing a planned 2023 RFP

Experience You



Scaling LERs: Experience You

Problems

Current LER efforts focus on issuing new records rather than targeting already earned achievements. Diverse (l)earner experiences are often excluded from these workflows.

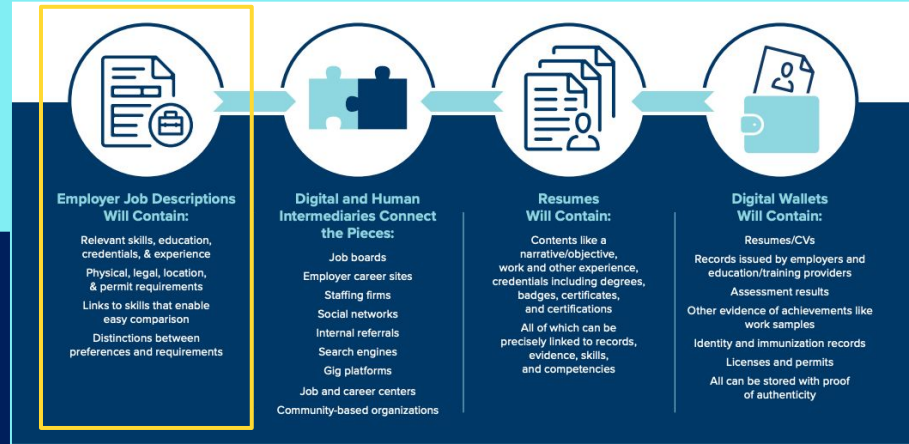
Purpose

Ideate and prototype tools to convert massive amounts of unstructured data (e.g., transcripts, resumes, and employment history) associated with an individual's education, employment, and experience into structured, machine-actionable data about knowledge, skills, and abilities for self-verification.

Outcomes

Galvanize a community of data and technology vendors and researchers in developing AI tools to quickly and accurately translate past education, work, and life experience into LERs.

JobSIDE



Job Skills for In-Demand Employment (JobSIDE)

- Suite of tools to source validated data on skills and jobs from employers
- Enables education and training programs to align curriculum, credentials, assessments, and records of learning to employer needs
- Aids in change management with employers by improving how they organize, share, and use information
- JobSIDE will be piloted with select partners in 2023 and fully deployed in 2024

Competency Explorer

← Skills →



Employer Job Descriptions Will Contain:

- Relevant skills, education, credentials, & experience
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Digital and Human Intermediaries Connect the Pieces:

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Construction

This course introduces the technical knowledge and skills required to pursue careers in the construction industry, including knowledge of design, operation, and maintenance of technological systems...



Competencies

[\(Expand all / Collapse all\)](#)

CONP.01 Technical Skills: Use the technical knowledge and skills required to pursue the targeted Architecture & Construction careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster.

CONP.01.01 Read, interpret, and use technical drawings, documents, and specifications to plan a project.

CONP.01.01.a Interpret drawings used in project planning.

CONP.01.01.b Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.

CONP.01.02 Use and maintain appropriate tools, machinery, equipment, and resources

Framework details

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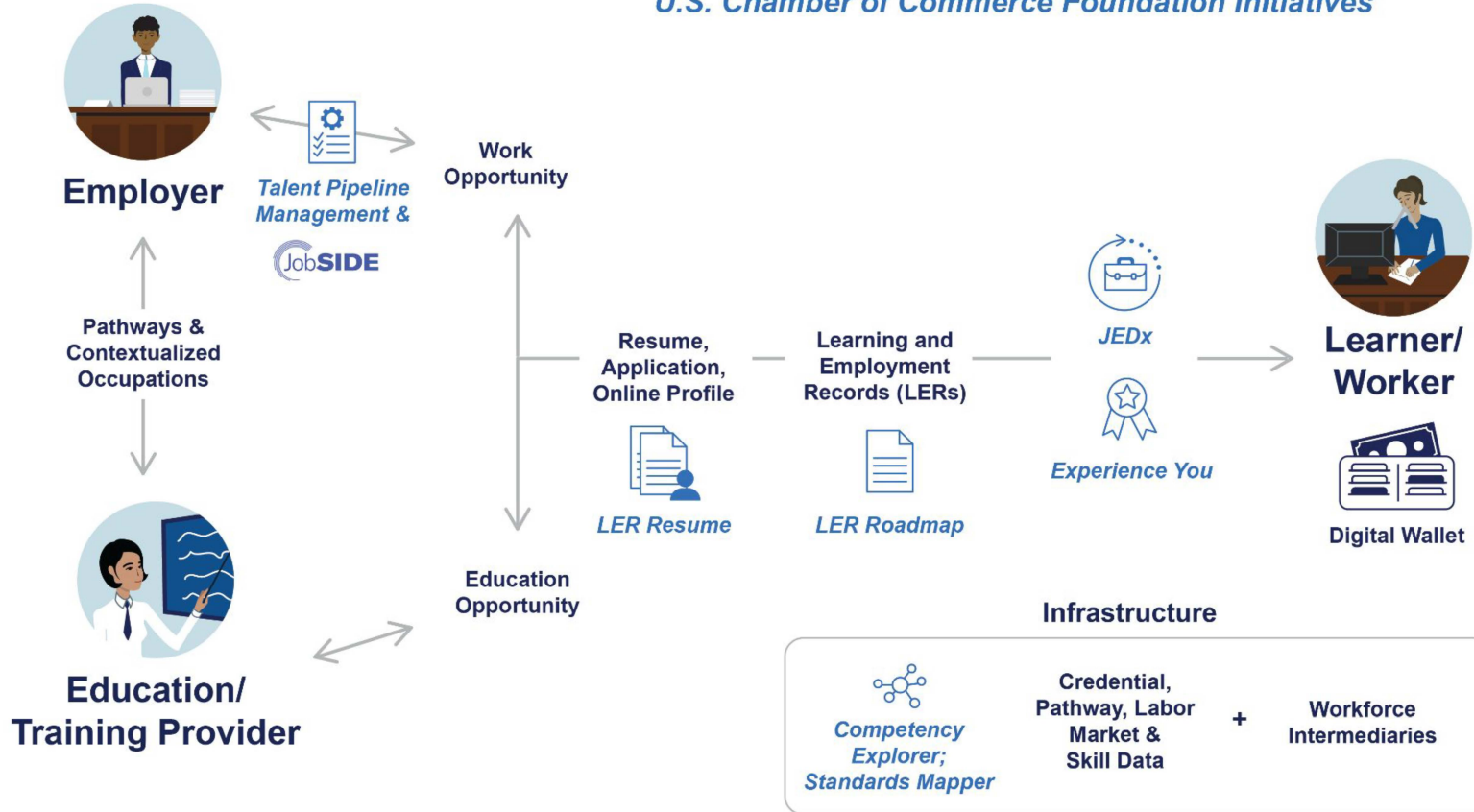
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Q & A

Break

Agenda Review

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- Desired Outcomes
- Challenges
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Discussion

Discussion Topics

How can government promote open access and use of better skills information to inform policymakers, organizations, and individuals?

We'll brainstorm for each of these in order:

- Desired Outcomes
- Challenges
- Solutions
- Open Questions / Catchall

MORE INFORMATION



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