JEDx Jobs and Employment Data Exchange

Modernizing America's Workforce Data
Through a Public-Private Approach

June 2021

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EXECUTIVE SUMMARY

The U.S. Chamber of Commerce Foundation and the T3 Innovation Network conducted a two-month planning phase for the Jobs and Employment Data Exchange (JEDx) initiative with input from a public-private advisory committee. This report summarizes the results from this planning process. The JEDx initiative will pioneer a new public-private approach for modernizing America's workforce data, starting with jobs and employment data that employers and their human resources (HR) technology service providers currently report to federal and state governments.

This public-private approach has the potential to substantially reduce the reporting costs for employers and government while improving data quality and timeliness and protecting privacy. This approach also could provide more comprehensive data for public and private workforce analytics—including better labor market information and improved employment and earnings outcome data for evidence-based policy and program management. Further, it has the potential to provide more comprehensive and comparable data about jobs for improving job searches and the alignment of education and training programs to employer needs. Finally, this approach could empower workers to use their own data to pursue employment and education opportunities and apply for government programs.

The JEDx initiative will evaluate these potential benefits through four demonstration projects that address major stakeholder use cases and test key facets of a public-private data trust. One such project will focus on improving federal and state reporting, starting with Unemployment Insurance (UI) reporting, including enhanced UI wage records.

INTRODUCTION AND OVERVIEW

The U.S. Chamber of Commerce Foundation (Chamber Foundation) and the T3 Innovation Network (T3 Network) are launching the Jobs and Employment Data Exchange (JEDx) initiative to develop a public-private approach for collecting and using standards-based jobs and employment data. JEDx builds on the Chamber Foundation's Job Data Exchange (JDX) initiative,[1] to promote public-private standards for job descriptions and postings, and the T3 Network's Employment and Earnings Records Standards Project,[2] to develop and use public-private standards for comprehensive employment and earnings records. JDX explored applications for improved jobs data and promoting skills-based hiring; the T3 Network project explored applications for enhancing Unemployment Insurance (UI) wage records and improving federal and state reporting and labor market information. Both the JDX and the T3 Network efforts have been developed in cooperation with the HR Open Standards Consortium and other public and private partners.

The JEDx initiative started with a two-month planning phase to develop a vision and roadmap with input from a public-private advisory committee (see Appendix C). This committee was convened through three virtual meetings to examine components of the JEDx plan and then review the draft report.

This report summarizes the results from this planning process. It first presents the need for a new public-private approach. It then describes the JEDx mission, a vision of how this public-private mission will be realized, and a set of principles that will guide the effort. Next, the report details an initial focus on three major stakeholder use cases. The report then presents a roadmap for moving from the current planning phase to a design and test phase. This design and test phase starts with four proposed demonstration projects, which address one or more stakeholder use cases and test facets of a public-private data trust. The report concludes with a discussion of next steps in launching the JEDx initiative.

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1   Job Data Exchange, U.S. Chamber of Commerce Foundation, accessed May 5, 2021, https://www.uschamberfoundation.org/workforce-development/JDX.

2   "Developing and Using Public-Private Data Standards for Employment and Earnings Records," U.S. Chamber of Commerce Foundation, February 17, 2021, https://www.uschamberfoundation.org/reports/developing-and-using-public-private-data-standards-employment-and-earnings-records-0.

WHY A PUBLIC-PRIVATE APPROACH?

Modernizing America's workforce data requires a new public-private approach. Employers, workers, governments, and the general public all have interests and investments in how jobs and employment data are collected, compiled, accessed, and used. Providing each of these stakeholders with a voice in the design and governance of these processes offers the best opportunity to protect and serve all stakeholder interests and investments, including protecting privacy.

JEDx will pioneer this public-private approach for reinventing America's workforce data, starting with jobs and employment data that is developed, organized, and shared by employers and their HR technology service providers. This initiative comes just at the right time to address the following challenges.

- **Rapid labor market changes.** The availability and use of high-quality, timely, and trustworthy information about employers, jobs, and workers is more important than ever before, especially given rapid technological shifts, growing global competition, and more recent labor market changes accelerated by COVID-19.

- **Need for greater diversity, equity, and inclusion in labor markets.** In the United States, there is growing recognition of the need to increase diversity, equity, and inclusion in labor markets. Improved data are required to identify the challenges and opportunities for increasing diversity, equity, and inclusion and for evaluating progress.

- **Employers providing valuable data to the government.** Historically, employers have provided their data to federal and state government agencies to meet administrative reporting requirements and in response to surveys. Government agencies, in turn, have created public statistics to be used for public and private sector decision making, while protecting the confidentiality of the data.

- **Growing private sector interested in tapping the value from aggregated employer data.** Increasingly, the private sector is gathering large amounts of data from employers, aggregating that information, and sharing it to meet public and private sector data needs.

- **Disconnected systems lead to higher cost and lower value.** To a great extent, government administrative reporting systems and surveys are conducted by agencies independently. This results in growing burdens and other costs for employers and government as well as inconsistencies in how employer data are collected and used for different government reporting requirements.

- **Need for more comprehensive and timely data.** There is growing interest in how more comprehensive employer-provided administrative data (i.e., human resource management data) could play a larger role. For example, national and state initiatives have called for states to expand or enhance UI wage records. Employers are increasingly seeing the potential value from these enhanced wage records through improved workforce analytics. In addition, the lack of timely data delays public response to economic disruptions and makes it more difficult to detect fraud in public benefit programs.

- **Reporting burdens.** These efforts have raised major concerns among employers and their HR technology service providers about the increased costs of providing additional information across more states with different reporting requirements and systems—and the relative value to employers, especially given other federal and state reporting burdens.

- **Personal access to data.** In addition, individuals are increasingly concerned about having access to information stored about them and about how employers and government can enable workers/learners to use their own employment data to access jobs, education, and training opportunities.

- **Data privacy.** There is growing interest in the sharing and use of jobs and employment data through standards and protocols that protect employer and worker privacy and ensure security and protection from unauthorized data use.

- **Need for public-private standards to address inconsistent data definitions and data sharing practices.** Existing public and private data collection systems are inconsistent and incompatible and require greater standardization for both public and private applications. The United States is unique in having a public-private approach to data and technology standards development and use. In particular, federal policy strongly encourages federal agencies to use public-private voluntary consensus standards when available and applicable for addressing their needs.

Now is the time for a new public-private approach in which employers, HR technology service providers, and government agencies work together to organize, share, and use more comprehensive and timely jobs and employment data in ways that reduce costs and improve the value for employers, workers/learners, government, and other stakeholders. This public-private approach is also expected to improve the efficiency and equity, diversity, and inclusion of labor markets as well as protect privacy.

MISSION AND VISION

In pioneering a new public-private approach to modernizing America's workforce data, the JEDx initiative will be guided by a bold mission and vision.

JEDx will transform how jobs and employment data are developed, organized, shared, and used, which will yield greater value to employers, workers/learners, government agencies, and others; improve the efficiency and equity of labor markets; and protect privacy.

If successful:

- Employers, HR technology service providers, and federal and state governments will work together to:

  » Reduce employer reporting costs to government.

  » Reduce government data collection costs.

  » Improve data quality and timeliness.

- Government agencies will have the data they need for improving labor market information, economic statistics, and developing evidence-based policies.

- Employers, workers/learners, and government agencies will use enhanced public and private workforce analytics to better guide their decisions and investments in ways that improve the efficiency, diversity, and inclusion of labor markets.

- Workers/learners will be able to better use their own data to pursue jobs, education and training opportunities, and to access government programs and benefits.

- Jobs and employment data will be more widely shared and used, and privacy will remain protected.

GUIDING PRINCIPLES

JEDx will realize this mission and vision and pioneer a new public-private approach through the following guiding principles:

- **High-impact stakeholder use cases.** JEDx focuses on high-impact public and private stakeholder use cases that provide the most value to stakeholders and improve the overall efficiency and equity of labor markets. These high-impact use cases have performance metrics that clearly define stakeholder value and expected improvements in the labor market.

- **Higher value at lower costs.** JEDx pursues strategies that create higher stakeholder value at lower costs by enhancing available data and their use while employing more efficient technologies and reducing redundancies in data collection and verification.

- **Public-private collaboration.** In the design and governance of data collaboratives, JEDx promotes public and private collaboration and consensus to ensure that value is created for both public and private partners at the lowest costs possible. This public-private collaboration must break new ground in how to engage all major public and private stakeholders and seek buy-in from these stakeholders in how data are developed, shared, and used to create value.

- **Open data and technology standards.** JEDx promotes and facilitates the development and use of public-private data and technology standards to improve the efficiency of data sharing, data quality, and timeliness. JEDx works with standards organizations and other partners that follow open voluntary consensus processes and make their standards openly available for public and private sector use and that enable the use of open competency and skill frameworks.

- **Employer and worker privacy and security.** JEDx encourages the sharing and use of jobs and employment data through standards and protocols that protect employer and worker privacy and that ensure security and protection from unauthorized data use.

- **Empowering workers/learners.** JEDx empowers workers/learners to use their own employment data along with other types of learning and employment records (LERs) to pursue career and education opportunities and access government programs and benefits. Empowering workers/learners with their data also includes the ability to understand, manage, and make decisions about what data are disclosed, when, and for what purposes.

- **Ethical practices and equity considerations.** JEDx develops and promotes ethical standards, protocols, and codes of conduct—including equity considerations—in developing, sharing, and using jobs and employment administrative data.

STAKEHOLDER USE CASES

The JEDx initiative will focus initially on three major use cases that provide value to employers, workers/learners, government agencies, and others.

- **Employer reporting to federal and state governments.** Reducing costs and improving data quality and timeliness in employer reporting to federal and state governments for program and tax administration and economic statistics

- **Public and private workforce analytics.** Improving access and use of more comprehensive workforce analytics services for employers, workers/learners, and government agencies—including government labor market information and evidence-based policy and research

- **Worker/learner 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 LER initiative

PROMOTING PUBLIC-PRIVATE STANDARDS DEVELOPMENT AND USE

Based on the initial stakeholder use cases listed above, JEDx will initially focus on promoting further development and use of data and technology standards (e.g., HR Open Employment and Earnings Record standards and JDX JobSchema+[3]) that (1) improve interoperability and public and private system integration and (2) improve privacy and security.

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3   Data Standard for Jobs, U.S. Chamber of Commerce Foundation, accessed May 5, 2021, https://www.uschamberfoundation.org/jdx/job-schema.

Improve Interoperability and Systems Integration

Data interoperability depends on multiple layers of standards.

- **Data vocabulary/dictionary.** Standard meanings and allowed values for data elements. For example, a data vocabulary/dictionary could include standardized data elements and definitions that describe "jobs" and "indirect compensation."

- **Data model.** Entity definitions and entity relationships. For example, a data model could show relationships between a worker, employer, job, and job competencies logically modeled in the data.

- **Data packaging.** Standard packaging of data for transport. Data serialization identifies concrete data structures and formats that are data packaged for transport between systems. For example, a data package could identify a specific schema or "binding" using a specific serialization protocol or format such as XML or JSON.

- **Data protocols.** Standards by which data may be exchanged. Protocols are generalizable standard procedures or a system of rules that enable data exchange. Protocols include packaging protocols, such as JSON and XML, and communications protocols, such as http and REST.

- **Application programming interfaces (APIs).** Specific interfaces that allow software applications to communicate with each other and exchange data. Standard APIs are specified using standard protocols (i.e., REST) and further identify the specific type of data that may be transmitted, what commands are used to send and receive data, and how data transfers are confirmed.

- **Linked data services.** Services that provide additional support for interoperability and use of data. For example, rather than include detailed metadata in each employment record about the job and related competency and skill requirements, the record could include URLs that link to relevant detailed descriptions from NIST's Workforce Framework for Cybersecurity, the Department of Labor's O*NET database, or a variety of industry and professional competency and skill frameworks. Other services may support data translation, verification, and federated analysis.

Figure 1: Stack of Data Standards for Interoperability
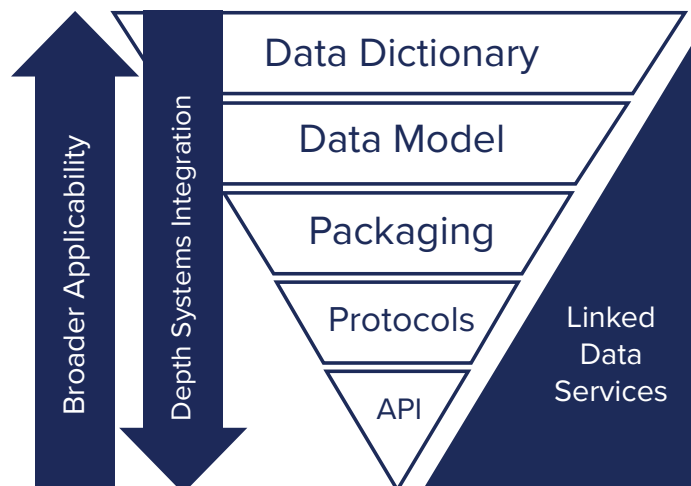
Improve Privacy and Security

Interoperability is affected by technical standards for encryption and security of data for protection both in transit and at rest. New standards-based approaches leverage deidentification, data masking, anonymization, cryptographic zero-knowledge proofs, and federated machine learning to improve value and answer questions from large, distributed datasets, while avoiding risks of privacy violations.

Part of the JEDx work will explore how best to leverage current and emerging data privacy and security approaches and technologies with employment data, to provide greater value to employers, workers/learners, governments, and others while protecting privacy.

POTENTIAL DATA COLLABORATIVE FUNCTIONS

JEDx will realize this mission and vision by promoting public-private collaboration to facilitate the following functions:

Promoting and facilitating data and technology standards. Promote and facilitate the development and use of data and technology standards by leading standards development organizations and other public and private partners. These efforts could include:

- Promoting data and technology standards development

- Providing technical resources and support in using standards

- Building organizational and professional expertise in using standards

Promoting and facilitating data governance and sharing. Promote and facilitate public and private data governance and sharing through a public-private data trust. These efforts could include:

- Promoting leading employer and HR technology provider practices in organizing and managing jobs and employment data

- Planning and supporting data governance and sharing of jobs and employment data

- Promoting data sharing between public and private partners based on leading standards and protocols for protecting privacy and data security

- Promoting cooperation and data sharing between other public and private data collaboratives

Promoting and facilitating data uses. Promote and facilitate innovative and effective uses of the data to create value for employers, workers/learners, and government and to improve the efficiency and equity of labor markets while protecting privacy. These efforts could include:

- Promoting public and private workforce analytics

- Promoting leading practices in empowering workers in using their data

JEDX ROADMAP

The JEDx initiative will proceed along a roadmap consisting of three major phases:

Plan. This first phase started with a two-month planning process. The results from this initial two-month planning process are summarized in this report. This process will continue with the engagement of key stakeholders in further planning the next phase of work.

Design and test. This second multiyear phase will facilitate additional development of standards and data trust models and provide the necessary management framework for further developing, conducting, and coordinating the demonstration projects consistent with relevant stakeholder use cases.

Implement and improve. Based on results from the design and test phase, this third phase will establish the JEDx public-private data trust and will design how it will facilitate data sharing and use at different stages of development, testing, and maturity consistent with the stakeholder use cases.

During the planning phase, the Chamber Foundation proposed four demonstration projects for the design and test phase and received initial feedback from advisory committee members. The next section first describes the four demonstration projects and then outlines how these demonstration projects will be further developed and managed during the design and test phase.

DESIGN AND TEST PHASE: DEMONSTRATION PROJECT PLANNING AND MANAGEMENT

During the design and test phase, the Chamber Foundation will develop, manage, and coordinate a diverse set of demonstration projects based on the stakeholder use cases. These projects also will test key facets of a public-private data trust. This phase will be conducted with the input of an advisory committee.

As shown in Figure 2, the JEDx planning phase identified four potential demonstration projects that could show the value of a new public-private approach and inform the further design of the JEDx as a data trust. These projects are described in more detail in Appendix A.

Figure 2: Initial Demonstration Projects

Project Title	Project Summary	Primary Objectives
Improving Federal and State Reporting	States, federal agencies, employers, HR technology service providers, workforce analytics providers, and other public and private partners will collaborate to reduce costs and create greater value for employer reporting to federal and state agencies. This project will start with the enhancement of state UI records, including wage records.	• Reduce federal and state reporting costs for employers and government agencies. • Improve data quality and timeliness in federal and state government reporting. • Provide better data for improved public and private workforce analytics.

Improving Job Description Data for Sharing and Use in Career Pathway Partnerships	Employers engaged in career pathway partnerships (e.g., Talent Pipeline Management employer collaboratives, sector partnerships) will work with their education and training partners (e.g., schools, colleges, universities) to improve how standardized job description data can be shared and used to improve the alignment of programs with employer needs; fix imbalances between supply and demand; and address major challenges in hiring, development, and retention for the most critical jobs. This project will focus on improving skills-based hiring and promotion.	• Improve the efficiency (time and costs) of jobs data sharing and use in career pathway partnerships for employers, HR technology service providers, and education and training providers.
		• Improve skills-based hiring.
		• Improve employment and earnings outcomes for workers/learners completing career pathway programs.
		• Improve data analytics to achieve results for the most critical jobs:
		  » Number and percentage of qualified applicants
		  » Advancement and retention rates
		  » Program employment and earnings outcomes
		  » Increased diversity and equity

Improving Job Posting Data for Search	Employers, HR technology service providers, public and private job boards, search engines, and other partners will improve the standardization and distribution of job posting data to improve job search and related workforce analytics, especially for jobs that do not require four-year college degrees.	• Improve standardization of job descriptions and postings for job search.
		• Improve job posting data distribution and access.
		• Improve job searches.
		  » Number of qualified candidates applying for jobs
		  » Diversity of qualified candidates applying for jobs
		• Improve job and candidate fit, hiring, and retention.

Empowering Workers/ Learners to Use Employment Records for Jobs and Government Programs and Benefit Applications	Employers and HR technology service providers will demonstrate how to issue comprehensive employment records (CERs), a type of LER, to their workers. They also will work with public and private partners to enable workers to use their own records in pursuing employment, education, and training opportunities and in accessing government programs and benefits. The project will focus on two initial CER applications: (1) Create a CER that workers can present to government agencies for a UI application, that is verifiable and tamper-evident, speeding up the application process; and (2) create a presentation, a collection of verifiable credentials including LERs and CERs, from an individual worker or learner's digital credential wallet to apply for employment opportunities, allowing the employer to verify the authenticity of the submitted records immediately upon their receipt.	• Improve how workers/learners manage and use their own CERs.
		  » Save time and costs for workers/learners.
		• Implement cryptographic trust in the verification process for job application and hiring.
		  » Reduce time and costs for workers and employers in job application and hiring.
		• Increase trust in—and support verification of— applications for government programs and benefits.

The Chamber Foundation will develop and launch these demonstration projects through the following process.

1. **Expand outreach and communication.** The Chamber Foundation will expand JEDx outreach and communication to convey the value propositions underlying JEDx and how the demonstration projects are connected and contribute to the vision of a public-private data trust. The Chamber Foundation will work with partners to develop communication materials and tools (e.g., infographics) to support outreach and communication.

2. **Determine stakeholder interest and engagement.** The Chamber Foundation will first determine whether there is sufficient stakeholder interest and engagement to move forward in organizing a project steering group of public and private stakeholders and demonstration project participants.

3. **Establish a project steering groups to finalize the work plan, roles, and commitments.** The Chamber Foundation will then work with the partners in each project to establish a project steering group to finalize plans, roles, and commitments. These steering groups will:

   • Establish ground rules for collaboration and decision making.

   • Determine partner roles in data governance, reporting, collection, validation, oversight, and use.

   • Create rules that promote partner access to the data and comply with legal requirements.

   • Sustain participation of partner organizations throughout the project.

   • Finalize objectives and metrics that will be used for evaluating project success.

The steering groups will consist of public and private stakeholders identified in the demonstration project descriptions in Appendix A, including at least:

   • Employers and HR technology service providers

   • Federal and state agencies

   • Data and technology standards organizations

   • Workforce analytics providers

   • Other partners necessary for conducting the demonstration

4. **Identify and secure needed resources and funding.** Based on the project plan, the Chamber Foundation will work with each steering group to identify and secure the necessary resources and funding for launching the projects.

5. **Launch, manage, and coordinate projects.** After securing the commitments of key stakeholders and other partners and securing the necessary resources and funding, the Chamber Foundation will work with each steering group to launch the demonstration projects. The Chamber Foundation will then manage and coordinate these projects to ensure a consistent use of data and technology standards, including the following:

» Data dictionary.[4] Working with project steering groups to ensure that all projects are using and testing common and consistent data elements from the data dictionary, to ensure that employers can reduce costs by managing and sharing the same data for multiple stakeholder use cases, as well as assisting decision making by providing information on the data requirements of federal and state programs and relative burden imposed by those collection systems

» Data sharing systems. Collaborating with project steering groups to ensure that all projects are using consistent standards-based data sharing systems

» Test environments. Providing testing environments for each demonstration project to determine feasibility and stakeholder benefits

6. **Report progress and evaluate results.** The Chamber Foundation will provide an ongoing forum for project teams to report progress and share interim findings and challenges. The Chamber Foundation will also work with each project to conduct evaluations based on project objectives and metrics and determine whether these projects create stakeholder value.

The Chamber Foundation will work with the project steering groups and the advisory committee to identify additional demonstration projects and determine implications of all demonstration projects for moving to the next phase of implementation and improvement.

SUMMARY AND NEXT STEPS

The Chamber Foundation and the T3 Network are launching the JEDx initiative to develop a public-private approach for collecting and using standards-based jobs and employment data. This report has summarized the results from a two-month planning phase conducted with input from an advisory committee. This planning phase provides the foundation for launching the design and test phase of the roadmap, including four demonstration projects based on the major stakeholder use cases.

The Chamber Foundation will use this report to brief and engage key public and private stakeholders and potential funders to determine interest and commitment in moving forward with the design-and-test phase of the initiative. If such interest warrants, the Chamber Foundation will begin work with interested partners and funders in implementing these demonstration projects and determining the public and private demonstration partners, including interested states and federal agencies, employer organizations, HR technology service providers, and workforce analytics partners.

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4   The term "data dictionary" refers to the Data Dictionary developed by the T3 Innovation Network in partnership with the HR Open Standards Consortium. See https://www.uschamberfoundation.org/sites/default/files/media-uploads/Employment%20 and%20Earnings%20Records%20Data%20Dictionary%20March%202021.xlsx.

ACKNOWLEDGEMENTS

APPENDIX A: DEMONSTRATION PROJECT DESCRIPTIONS

1. Improving Federal and State Reporting

PROJECT BACKGROUND

Current reporting of employment and earnings data by employers to federal and state governments is characterized by lack of uniformity in definitions, formats, reporting systems, and timing. These variations, compounded by the sheer volume of reports, lead to unnecessarily high costs to both employers and governments. In addition, existing reports lack important types of data that could provide better understanding of the labor market and could provide labor market participants with better decision-making tools. The T3 Innovation Network's (T3 Network's) Employment and Earnings Records Standards Project proposed a public-private collaborative approach to enhancing state Unemployment Insurance (UI) records.

This demonstration project will incorporate that proposal as part of a more comprehensive effort to streamline employer reporting to federal and state governments and improve public and private workforce analytics based on public-private data and technology standards. This project will engage public and private partners in designing and testing a comprehensive employment and earnings report and shared reporting system that can be used by states for enhanced UI reporting as well as in satisfying other federal and state reporting requirements. This comprehensive employment and earnings report will also contain data elements consistent with the design of comprehensive employment records issued by employers to workers/learners for use in applying for jobs and government programs and benefits including UI (see project 4).

PROJECT GOALS AND DESCRIPTION

States, federal agencies, employers, HR technology service providers, workforce analytics providers, and other public and private partners will collaborate to reduce costs and create greater value for employer reporting to federal and state agencies. This project will start with the enhancement of state UI records because they are currently collected and used by all states and utilized by federal statistical agencies.

These public and private partners will:

- **Determine jobs and employment data collection priorities.** Determine UI records enhancement priorities and identify the additional federal and state reporting requirements that will be addressed.

- **Develop a comprehensive report.** Use selected data elements from the data dictionary to establish a comprehensive employment and earnings report for enhancing UI reporting and meeting other selected federal and state reporting requirements.

- **Develop a standards-based, enhanced, and shared UI wage reporting system.** Develop a prototype shared data reporting/collection system based on a JEDx specification and serialization protocols for an open-source API that may be adopted and/or extended by one or more standards development organizations.

- **Establish a testbed for assessing the viability of the standards-based enhanced UI reporting system.** Create a test platform and work with a subset of reporting entities to conduct rigorous, transparent, and replicable testing of the new shared data reporting/collection system.

- **Demonstrate value: reduced reporting costs, improved data quality and timeliness, and improved workforce analytics.** Demonstrate the use of a comprehensive record and reporting system to reduce reporting costs and improve data quality and timeliness as well as improve public and private workforce analytics.

PUBLIC AND PRIVATE PARTNERS

- Employers and HR technology service providers

- Data and technology standards organizations

- State agencies receiving data from employers, including state workforce agencies administering UI reporting

- Federal agencies receiving data from state agencies or directly from employers

- Public and private workforce analytics providers

- Other partners

OBJECTIVE AND METRICS

Primary:

- Reduce federal and state reporting costs for employers and government agencies.

  » Time and costs of employers and their HR technology service providers in reporting to federal and state agencies

  » Time and costs of government agencies in collecting and validating data

- Improve data quality and timeliness in federal and state government reporting.

  » Accuracy and completeness of data reported

  » Timeliness of data reported (e.g., monthly vs. quarterly) and made available for use

- Provide better data for improved public and private workforce analytics.

    » Evaluations of improved workforce analytics for employers and workers/learners

    » Evaluations of improved economic statistics

    » Evaluation of improved evidence-based policy applications

Secondary:

- Ensure that employers and HR technology service providers use consistent data elements for providing workers/learners with their own learning and employment records (LERs) for job applications and government programs and benefits (see project 4).

PROJECT WORK TASKS AND MILESTONES

1. **Establish a project steering group to finalize a work plan, roles, and commitments.**

- Establish ground rules for collaboration and decision making.

- Determine partner roles in data governance, reporting, collection, validation, oversight, and use.

- Create rules that promote partner access to the data and comply with legal requirements (e.g., state UI laws and confidentiality laws).

- Sustain participation of partner organizations throughout the project.

- Finalize objectives and metrics that will be used for evaluating project success.

Minimum criteria: Include at least two states/territories' UI and labor market information organizations, the U.S. Department of Labor, and the U.S. Department of Commerce, plus employer organizations, HR technology providers, and worker/learner organizations.

2. **Determine jobs and employment data collection priorities.**

- Determine which federal and state reporting systems to include.

- Identify potential barriers (e.g., legal, organizational, cultural, technical).

- Identify expected priority uses of enhanced data collection by all partners.

- Choose data elements to be collected in initial and subsequent phases of implementation.

- Propose a data collection schedule that improves data timeliness.

Minimum criteria: Satisfy UI data needs in participating states/territories, select data elements from the data dictionary, and satisfy employment and earnings data needs of at least two federal programs.

3. **Design and test improvements to data collection methods.**

- Develop a prototype API for data reporting based on JEDx specification and serialization protocols for an open-source API.

- Conduct a small-scale test of the API to report data.

- Develop data exchange protocols and guidance.

Minimum criteria: Demonstrate functionality of a prototype API that contributes to an open-source specification available for use by others and adopted and/or extended by one or more standards development organizations.

4. **Demonstrate value.**

- Assess the expected effects of a full-scale application on the benefits and costs to each of the stakeholder groups.

- Develop prototypes of potential public and private analytics that could be generated with improved data.

- Evaluate effectiveness of data sharing methods for reducing costs and improving data quality and timeliness.

- Evaluate implications of overall results for moving to the next phase of implementation.

2. Improving Job Description Data for Sharing and Use in Career Pathway Partnerships

PROJECT BACKGROUND

Workforce data could be significantly improved if employers used data and technology standards for developing and sharing job description data and crafting job postings (see project 3). Employers are now working with education and training partners to better share data about the characteristics—including competency, credentialing, and other hiring requirements—of their most critical, high-demand jobs. For example, Talent Pipeline Management (TPM) employer collaboratives share projected demand and job descriptions with intermediary organizations such as chambers of commerce, economic development organizations, and workforce boards. These intermediary organizations then use the job description data to compile competency, credentialing, and other hiring requirements (e.g., work experience). Then they validate these description data through employer surveys that confirm, compare, and align these requirements. The results are invaluable guidance for education and training partners; however, the scope, content, and level of detail of these employer job descriptions vary widely. Because these descriptions are not provided in structured data formats, comparison and analysis can be challenging.

PROJECT GOALS AND DESCRIPTION

Employers engaged in career pathway partnerships (e.g., TPM employer collaboratives, sector partnerships) will work with their education and training partners (e.g., schools, colleges, universities) to improve how standardized job description data can be shared and used. The sharing and use of job description data can improve the alignment of programs with employer needs; fix imbalances between supply and demand; address major challenges in hiring, development, and retention for the most critical jobs; and improve the employment and earnings outcomes of education and training programs. This project will focus on improving skills-based hiring and promotion, the alignment of employer skill requirements, and the learning outcomes of education and training programs.

These public and private partners will:

- **Review and improve job description standards and guidance.** Review, improve, and align Job Data Exchange (JDX), HR Open, and Schema.org standards and guidance for job descriptions and postings in cooperation with HR Open and other standards organizations (in coordination with project 3).

- **Improve job descriptions created by employer partners.** Develop strategies for supporting employers in projecting demand and creating skills-based job descriptions across their entire workforce and projecting demand primarily through partnerships with HR technology service providers (e.g., HRIS and ATS systems).

- **Improve demand-side data sharing through local intermediaries for career pathways analytics and use.** Develop strategies and guidance for more efficient sharing of job description data and demand projections by employers to intermediaries (e.g., chambers of commerce, economic development organizations, workforce boards) and directly to partner systems (e.g., learning and curriculum management). Additionally, develop strategies and guidance on improving how these data are analyzed and utilized by education and training partners.

- **Demonstrate value: reducing supply/demand imbalance and improving hiring and retention.** Show how more standardized jobs data and improved distribution, analytics, and utilization could improve hiring, development, and retention including diversity and equity.

PUBLIC AND PRIVATE PARTNERS

- Employers (including HR hiring managers and recruiters)

- HR technology service providers

- Data and technology standards organizations

- Organizations managing employer partnerships

- Education and training providers and other service providers involved in employer partnerships

- Organizations helping employers define job responsibilities for well-defined, structured job descriptions

- Other partners

OBJECTIVES AND METRICS

Primary:

- Improve the efficiency of jobs data sharing in career pathway partnerships.

    » Time and costs of employers and their HR technology service providers in providing jobs data through employer partnerships to education and training providers

    » Time and costs of education and training providers in utilizing jobs data to improve their programs and services

- Improve data analytics and utilization to achieve results for the most critical jobs.

    » Number and percentage of qualified applicants

    » Advancement and retention rates

    » Employment and earnings outcomes for education and training programs

    » Increased diversity and equity

Secondary:

- Ensure that employers and HR technology service providers use consistent data elements for government reporting (see project 1) and improving job search (see project 3).

PROJECT WORK TASKS AND MILESTONES

1. **Establish a project steering group to finalize a work plan, roles, and commitments.**

- Establish a project steering group to finalize a work plan, roles, and commitments .

- Determine partner roles in data governance, aggregation, analysis, and distribution.

- Create rules that promote partner access to the data and comply with legal and privacy requirements.

- Sustain participation of partner organizations throughout the project.

- Finalize objectives and metrics that will be used for evaluating project success.

Minimum criteria: Include multiple employers, HR technology service providers, and education and training providers in career pathway partnerships.

2. Review and improve jobs data standards and guidance.

- Determine the most critical jobs data elements to improve sharing and use.

- Review JDX, HR Open, and Schema.org standards for job descriptions and postings.

- Improve and align standards for testing.

Minimum criteria: Select data elements from the data dictionary that are consistent with federal and state jobs reporting (see project 1) and job search (project 3).

3. Design and test improvements to development, distribution, and utilization.

- Create strategies and tools for improving employers' use of the standards in developing job descriptions.

- Develop strategies and tools for improving the aggregation, analysis, and distribution of standardized jobs data to education and training partners.

- Foster strategies and tools for improving the use of the data by education and training partners.

- Design and conduct a small-scale test with one or more career pathway partnerships.

Minimum criteria: Test with multiple employers, HR technology service providers, and education and training providers in career pathway partnerships.

4. Demonstrate value.

- Evaluate time and cost in jobs data compilation, analysis, and distribution to providers.

- Develop prototypes of potential workforce analytics that could be generated with improved data.

- Assess effectiveness of education and training providers in utilizing the data to improve services.

- Achieving results in hiring, developing, retaining, and diversity and equity for critical jobs.

- Realize improvements in the employment and earnings outcomes for education and training programs.

3. Improving Job Posting Data for Search

PROJECT BACKGROUND

Job search applications could be significantly improved if employers and their partners use data and technology standards for developing and distributing job posting data consistent with job description data used in applicant screening and hiring (see project 2). Employer job posting data are now being used in innovative ways to improve job search and workforce analytics that provide benefits to employ-

ers, workers/learners, and government; however, employer job postings usually do not provide comprehensive and comparable information about job opportunities (e.g., competency and credentialing requirements) that can easily be linked with other public and private data (e.g., employer, occupation, work location) for making further improvements in job search applications and related workforce analytics. Employer job postings are also not easily distributed through public and private channels (e.g., job boards), which use different job posting and management systems.

PROJECT GOALS AND DESCRIPTION

Employers, HR technology service providers, public and private job boards, search engines, and other partners will improve the standardization and distribution of job posting data to improve job search and related workforce analytics, especially for jobs that do not require four-year college degrees.

These public and private partners will:

- **Review and improve job posting data standards and guidance.** Review, improve, and align JDX, HR Open, and Schema.org standards and guidance for job postings in cooperation with HR Open and other standards organizations (coordinated with project 2).

- **Improve job posting data standardization, distribution, analytics, and utilization.** Create strategies for improving how employers utilize data standards and how more standardized job posting data are shared across public (e.g., state workforce agency job boards) and private distribution channels to improve access. Also, improve the analysis and utilization of more standardized job posting data.

- **Demonstrate value: improving job search.** Show the value of more standardized job posting data forimproving the job search for workers/learners pursuing job opportunities, especially for jobs that do not require four-year degrees.

PUBLIC AND PRIVATE PARTNERS

- Data and technology standards organizations

- Employers and HR technology service providers

- Public and private job boards connecting job opportunities with job seekers

- Search engines promoting improved job search

- Application developers providing workforce analytics, guidance, and assistance to job seekers

- Other partners

OBJECTIVES AND METRICS

Primary:

- Improve standardization of job descriptions and postings for improving job search.

  » Data completeness and consistency in job postings

  » Conformity to data and technology standards

- Improve job posting data distribution and access.

  » Reduced time and costs in distribution across public and private distribution channels

- Enhance job searches.

  » Number of qualified candidates applying for jobs

  » Diversity and equity of qualified candidates applying for jobs

- Improve job and candidate fit, hiring, and retention.

  » Reduced time and costs from initial search to hire for job seekers

Secondary:

- Ensure that employers and HR technology service providers use consistent data elements in reporting jobs and employment data to government (see project 1) and in creating and using job descriptions (see project 2).

PROJECT WORK TASKS AND MILESTONES

1. **Establish a project steering group to finalize a work plan, roles, and commitments.**

- Establish ground rules for collaboration and decision making.

- Determine partner roles in jobs data development, distribution, and use in hiring.

- Create rules that promote partner access to the data and comply with legal requirements.

- Sustain participation of partner organizations throughout the project.

- Finalize objectives and metrics that will be used for evaluating project success.

Minimum criteria: Include multiple employers, HR technology service providers, and public and private job boards.

2. **Review and improve job posting data standards and guidance.**

    *   Determine the most critical job data elements for improving job searches.

    *   Determine which federal and state reporting systems to include.

    *   Review JDX, HR Open, and Schema.org standards for job descriptions and postings.

    *   Improve and align standards for testing.

    Minimum criteria: Select data elements from the data dictionary that are consistent with federal and state jobs reporting (see project 1) and job descriptions (see project 2).

3. **Design and test improvements to distribution, access, and utilization.**

    *   Create strategies and tools for the improved distribution of standardized job posting data.

    *   Design and conduct a small-scale test of distribution through public and private distribution channels and job boards.

    *   Design and test the use of standardized job posting data in job applications.

    Minimum criteria: Test with multiple employers, HR technology service providers, and public and private job boards.

4. **Demonstrate value.**

    *   Develop prototypes of potential analytics that could be generated with improved data.

    *   Assess time and costs in job posting data distribution and access.

    *   Evaluate the improvements in job and candidate searches, matching, hiring, and retention.

4. Empowering Workers/Learners to Use Employment Records for Jobs and Government Programs and Benefit Applications

PROJECT BACKGROUND

The T3 Network and related public and private initiatives are promoting the development and use of LERs to empower workers/learners to use their own data to pursue education and career opportunities. However, little attention has been paid to comprehensive employment records and how they could be issued by employers and used by workers/learners in job applications and applications for government programs and benefits. These records have the potential to play a major role in improving trust and verification of worker identity and work histories (e.g., employer, job title, job duties, employment dates) presented in résumés and job applications. They also have the potential to improve trust and verification of worker identity, employment history, and earnings for government program applications including UI and a variety of income-eligible federal and state programs.

PROJECT GOALS AND DESCRIPTION

Employers and HR technology service providers will demonstrate how to issue comprehensive employment records (CERs), a type of LER, to their workers. They also will work with public and private partners to enable workers to use their own records in pursuing employment, education, and training opportunities and in accessing government programs and benefits. The project will focus on two initial CER applications: (1) Create a CER that workers can present to government agencies for an UI application, that is verifiable and tamper-evident, speeding up the application process; and (2) Create a presentation, a collection of verifiable credentials including LERs and CERs, from an individual learner or worker's digital credential wallet to apply for employment opportunities, allowing the employer to verify the authenticity of the submitted records immediately upon their receipt.

The public and private partners will work with the T3 Network's LER Network to:

- **Develop a comprehensive employment record (CER).** Use selected data elements from the data dictionary to establish a CER as a type of LER.

- **Develop or identify existing LERs.** Applying for a job requires a set of LERs, which includes CERs, accepted into a digital credential wallet to create a verifiable presentation of the education and work history of the job applicant.

- **Develop serialization and transport specifications.** Develop a demonstration specification for the serialization using the HR Open or other standards organizations' specification and serialization protocols based on an open-source API for digital wallets that may be adopted and/or extended by one or more standards development organizations.

- **Develop a digital identity strategy for CERs.** A unique digital identity is needed to make it possible for the worker to demonstrate his or her control over a submitted verifiable employment record presentation. Identify and pilot either a hybrid federated identity approach or a self-sovereign identity design, based on steering committee feedback.

- **Develop a testbed for piloting CER use cases.** Create a private, secure test system within which to exercise each of the steps in a software driven workflow.

- **Identify and make CER issuing systems.** Identify CER issuing systems based on widely recognized standards and protocols that can be used to issue CERs to digital wallets.

- **Identify and use digital credential wallets.** Develop CER criteria for curation services to select among available digital wallets for their use in this demonstration project.

- **Establish a public-private interoperability and standards conformance process.** CERs and their associated applications must be interoperable and avoid vendor and technology specific lock-in for them to provide maximum value to individuals and employers. A conformance testing process needs to be devised and an independent testing organization formed to ensure these characteristics are followed and do not drift from these requirements.

- **Demonstrate value of improved trust and verification in applying for jobs and government programs.** Demonstrate the use of the CER and issuing systems and show how the record can be used to improve trust and verification in applying for jobs and government programs, including UI benefits.

PUBLIC AND PRIVATE PARTNERS

- T3 Network's LER pilots and Network

- Employers and HR technology service providers that issue and verify CERs

- Technology service providers providing wallets, digital identity services, and related applications for managing and using LERs

- Government agencies (e.g., Department of Homeland Security) with application systems for receiving and using CERs, including state UI agencies

- Data and technology standards organizations

- Other partners

OBJECTIVES AND METRICS

Primary:

- Improve how learners/workers manage and use their own CERs.

  » Saved time and costs for learners/workers

- Implement cryptographic trust in the verification process for job application and hiring.

  » Reduced time and costs for workers and employers in job application and hiring

- Increase trust in—and support verification of—applications for government programs and benefits.

  » Reallocation of time and costs from verification to other tasks, to the benefit of workers, employers, and government agencies

  » Reduced fraud in government benefit administration

Secondary:

- Ensure that employers and HR technology service providers use data elements for CERs consistent with those used for federal and state reporting, to ensure uniformity between CERs and data collected and used by governments to administer programs (see project 1).

PROJECT WORK TASKS AND MILESTONES

1. **Establish a project steering group to finalize a work plan, roles, and commitments.**

- Establish ground rules for collaboration and decision making.

- Determine partner roles and commitments in issuing and using CERs.

- Create rules that promote partner access to the data and comply with legal and privacy requirements.

- Sustain participation of partner organizations throughout the project.

- Finalize objectives and metrics that will be used for evaluating project success.

Minimum criteria: Include multiple employers, HR technology service providers issuing and using CERs, and at least one state agency (including a UI agency) testing the use of CERs for government program application and administration.

2. **Design CERs.**

- Determine the data elements required for verification in job applications and UI government program applications.

- Establish the issuing strategy that best suits the UI application use case.

3. **Design LERs and CERs for simulated UI and job applications.**

- Simulate LERs for the "apply for employment" use case.

- Simulate CERs for the "apply for Unemployment Insurance" use case.

4. **Develop serialization specifications.**

- Create a demonstration specification for the serialization of the CER as a digital wallet payload.

- Develop a process and interface between the serialized data from the open-source API, developed in demonstration project 1, to the CER serialization format for the CER as a digital wallet payload.

5. **Determine a digital identity method for workers.**

- Access the federated model of digital identity (e.g., an OpenID Connect service associated with decentralized identifiers).

- Access a self-sovereign digital identity (e.g., select a self-sovereign identity service for employee identity).

6. Test employer and HR technology service provider issuing and wallet systems.

- Identify employer and HR technology service provider issuing systems and wallet applications.

- Define the issuing strategies suitable for all data trust contributors.

  » Credentials issued by the data trust as a proxy for a given employer

  » Credentials issued directly by employers for their employees upon appointment and for each new position occupied

  » Credentials issued by a partner technology provider on behalf of the employer for acceptance into the worker's digital credential wallet

- Design a small-scale test for issuing systems and wallet applications for each issuing type.

- Conduct a test of issuing systems and wallet applications.

- Evaluate the time and costs to workers and employers in issuing and managing CERs.

7. Establish open-source conformance test suites for core technology standards implemented.

- Apply test suites to ensure interoperability from one system to another, such as:

  » Test conformance of digital wallets

  » Test conformance of protocols (such as the following standards HttpAPI, CHAPI, etc.)

Minimum criteria: More than one employer and HR technology service provider issuing and wallet system.

8. Demonstrate value in job and government program applications.

- Evaluate recommendation and guidance services that leverage LER/CER data and workforce analytics.

- Evaluate the time and costs to workers, employers, and government agencies in managing and using CERs including verification.

APPENDIX B: KNOWN FEDERAL AND STATE SYSTEMS COLLECTING EMPLOYMENT AND EARNINGS DATA

The information below represents a partial listing of the known federal and state systems that collect employment and earnings data. The Chamber Foundation will make additional data available to the demonstration partnerships.[5]

Data System	Conducted By
Age Discrimination in Employment Act Requirements	Equal Employment Opportunity Commission
Annual Business Survey	Department of Commerce—Census Bureau
Annual Employee Wage and Tax Statement—Forms W-2 and W-3	Social Security Administration
Annual Refiling Survey	Department of Labor—Bureau of Labor Statistics
Annual Return of Withheld Federal Income Tax—Form 945	Department of the Treasury—Internal Revenue Service
Annual Survey of Manufactures	Department of Commerce—Census Bureau
Annual Survey of Public Employment and Payroll	Department of Commerce—Census Bureau
Broadcast Station Annual Employment Report—Form 395-B	Federal Communications Commission
Business Research and Development Survey (conducted jointly with NSF)	Department of Commerce—Census Bureau
Compensation and Salary Surveys—Forms FR-29a and FR-29b	Federal Reserve System
Current Employment Statistics Survey	Department of Labor—Bureau of Labor Statistics

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5   For more detailed information about state and federal data reporting and systems, review Appendices A through C in "Developing and Using Public-Private Data Standards for Employment and Earnings Records," U.S. Chamber of Commerce Foundation, February 2021, https://www.uschamberfoundation.org/sites/default/files/media-uploads/T3%20Report_Employment%20and%20Earnings%20Records_Feb2021_FINAL%20%281%29.pdf.

Data System	Conducted By
Davis-Bacon Wage Surveys—Form WD-10	Department of Labor—Wage and Hour Division
Economic Census—Commercial Banking (Consolidated) Example	Department of Commerce—Census Bureau
Employer Information Reports—EO-1, EEO-3, EEO-4, EEO-5	Equal Employment Opportunity Commission
Employer's Annual Federal Tax Return for Ag Employees—Form 943	Department of the Treasury—Internal Revenue Service
Employer's Quarterly Federal Tax Return—Form 941	Department of the Treasury—Internal Revenue Service
Equal Pay Act Requirements	Equal Employment Opportunity Commission
Fair Labor Standards Act Requirements	Department of Labor—Wage and Hour Division
Family Medical Leave Act Requirements	Department of Labor—Wage and Hour Division
Farm Labor Survey	Department of Agriculture—National Agricultural Statistics Service
FDIC Contractor Workforce Inclusion Good Faith Efforts	Federal Deposit Insurance Corporation—Office of Minority and Women Inclusion
Federal-Aid Highway Construction Contractors Annual EEO Report	Department of Transportation—Federal Highway Administration
Hospital Wage Index Occupational Mix Survey	Department of Health and Human Services—Center for Medicare and Medicaid Services
Job Openings and Labor Turnover Survey	Department of Labor—Bureau of Labor Statistics
Minnesota Equal Pay Audit Report	State Agency
Multiple Worksite Report	Department of Labor—Bureau of Labor Statistics
National Compensation Survey	Department of Labor—Bureau of Labor Statistics
National Directory of New Hires	Department of Health and Human Services—Administration for Children and Families
National Principal and Teacher Survey—Private School Questionnaire	Department of Education—National Center for Education Statistics
National Principal and Teacher Survey—School Questionnaire	Department of Education—National Center for Education Statistics
Occupational Employment Survey	Department of Labor—Bureau of Labor Statistics
Occupational Requirements Survey	Department of Labor—Bureau of Labor Statistics
O*NET Questionnaires	Department of Labor—Employment and Training Administration
Oregon Monthly Employment Utilization Report—Form I	State Agency
Participant Individual Record Layout	Department of Labor—Employment and Training Administration
Quarterly Survey of Plant Capacity Utilization	Department of Commerce—Census Bureau
Report of Organization	Department of Commerce—Census Bureau

Data System	Conducted By
Service Annual Survey	Department of Commerce—Census Bureau
Sheltered Workshop Wage Reporting	Social Security Administration
State Directory of New Hires	State Agencies
State Information Data Exchange System	National Association of State Workforce Agencies
Trade Act Participant Report	Department of Labor—Employment and Training Administration
Unemployment Insurance Monthly/Quarterly Reports	State Agencies
Workforce Innovation and Opportunity Act Participant Report	Department of Labor—Employment and Training Administration

APPENDIX C: JEDX ADVISORY COMMITTEE

The JEDx Advisory Committee included members from state and federal agencies, employers, HR technology service providers, and other stakeholders. Representatives from the following organizations were part of the committee that convened three times in spring 2021 to review the JEDx vision, roadmap, and implementation plan.

- ADP
- Advanced Distributed Learning Initiative
- America Achieves
- Burning Glass Technologies
- CalChamber
- California Employment Development Department
- Canadian Chamber of Commerce
- Coleridge Initiative
- Cornell University-ILR
- Data Foundation
- DirectEmployers Association
- Emsi
- Florida Department of Economic Opportunity
- Greater Houston Partnership
- HR Open Standards Consortium (HR Open)
- IBM
- IMS Global Learning Consortium

- Indeed
- Jobs for the Future (JFF) Labs
- Jobvite Inc.
- Kentucky Chamber of Commerce
- Labor Market Information Institute
- LinkedIn
- Lumina Foundation
- McCourt School of Public Policy, Georgetown University
- Michigan Department of Technology, Management, and Budget
- Midwest Urban Strategies
- National Association of State Workforce Agencies (NASWA)
- National Student Clearinghouse
- New Jersey Department of Labor and Workforce
- New York University (NYU)
- North Dakota Information Technology Department
- One Stop Workforce Solutions

- Research Improving People's Lives (RIPL)
- SOLID, LLC
- South Carolina Department of Commerce
- Texas Workforce Commission
- U.S. Chamber of Commerce
- U.S. Department of Commerce
  - » Census Bureau
  - » Office of Policy and Strategic Planning
- U.S. Department of Defense
- U.S. Department of Education
  - » Federal Student Aid
  - » Institute of Education Sciences
- U.S. Department of Labor
  - » Bureau of Labor Statistics
  - » Employment and Training Administration
- Washington State Employment Security Department
- Workday