

A Common Language for a Local Labor Market

Modernizing O*NET into the Trusted Standard for Timely, Local, and Actionable Skills Data

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IN BRIEF

The labor market runs on an exchange. Employers pay for workers with the knowledge, skills, and abilities necessary to get work done. Workers, faculty, students, and public leaders - need to know what the workplace requires and what it is worth to provide requisite education and training. That exchange of information happens locally, and technology is changing fast.

This paper makes one argument. **The country needs a common, trusted language for describing skills employers need.** O*NET already provides one public version of that language. Its job now is to become timely, local, trusted, and actionable, and to connect cleanly to the wage records, job postings, and education data that supply current and regional detail.

The test of that job is what it delivers to the intermediaries who serve the labor market. State labor market information offices, workforce boards, economic development organizations, state education and workforce agencies, and colleges turn public data into guidance for policymakers, employers, workers, faculty, and students. O*NET is a source of value for those organizations and individuals. Improving it enhances every tool built on common, trusted language understood and accepted by public and private partners. The test a modernized O*NET must meet is not comprehensiveness but decision-grade usefulness: whether the data is fit for the specific decision in front of a real user.

O*NET can provide a common workforce system foundation that other data sources can map to and use as a benchmark. But O*NET has fallen behind because the program lacks a permanent process for hearing from users, setting priorities, and managing change. As the decisions O*NET is expected to support have evolved, its purpose has become less clear. This paper explains what a modernized O*NET should deliver, how it should be governed to remain current, useful, and trusted, and eight actions the federal-state workforce partnership can take now.

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The Exchange at the Heart of the Labor Market

The labor market works best when employers, workers, and public leaders share an understanding of what jobs require and what workers can offer. Employers need to be able to describe which skills are needed to perform a specific set of tasks, how many people they must hire with those skills to perform the tasks, and what wages they must pay to attract them. Workers and students need to know which jobs are being offered by employers to perform what tasks, what skills those jobs require, and what is being paid for those skills. Policymakers need to know which skills are in demand, where, and how many people to train. Each of these questions rests on the same foundation: a shared, common and trusted way to describe jobs and skills, paired with trusted information about wages, employment, and local demand.

At its core, the job market is an exchange between employers and workers. What an employer pays workers for is their knowledge, skills and abilities to perform work or produce a product. A common description of that work is what lets both sides agree on what is being transacted (Zweig, 2026). When the description is missing or inconsistent, the exchange grows slowly and expensively. Employers screen on proxies such as the degree, workers guess at what their skills are worth, and public dollars flow toward training whose payoff no one can see. Employers bear real costs on their side of the same failure: more frequent mismatches, bad hires, high turnover, and repeated screening weigh most on small and mid-sized firms (Burgess, Lane, & Stevens, 2000).

The information that would fix this is local. Employer demand changes first inside individual firms, driven by shifts in technology and in what customers want (Lane, 2023a; Autor, 2022). Firms adopt those changes at different speeds, and they hire in regional labor markets even when they sell to national or global ones. A region anchored by defense contractors or a pharmaceutical cluster develops distinctive wells of experience and skill, priced differently because of their relative prevalence or scarcity. National averages cannot capture any of this. The signal that matters is trusted, local information about what work pays and how many workers are available, expressed in a common language of jobs, skills, knowledge, and abilities.

A transformed O*NET could potentially provide that common language. It is not, however, the whole picture. Wage records, job postings, employer input, and education data all carry information O*NET was never designed to hold. O*NET's could give those sources a shared, common vocabulary and a trusted benchmark, so that the picture they build together is coherent. That task is simple to state and hard to meet. Its information should be **timely, local, actionable, and trusted** by a real user. O*NET could occupy a critical position in that

infrastructure: giving intermediaries (as well as employers and workers) a reference against which the rest of their data can be read.

The paper follows a single arc. It begins with explaining why local, not national detail matters in understanding labor markets. It explains O*NET's potential role as the shared, common language, and why trust is a critical precondition. It then sets out what a modernized O*NET should strive to deliver, the governance that would ensure that O*NET's output would be trusted, and an eight-part agenda for the federal-state partnership that stewards it.

Why National Averages Are Not Enough

The demand for workers is derived from the demand for what they produce and how they produce it. As technology reshapes production, it reshapes the skills employers need, the jobs they post, and the wages they pay. The pace of that change, and the uncertainty around it, are now central features of the labor market. Recent work describes a shift toward an innovation economy in which the link between rapid technological change and workforce outcomes carries what one economist calls vast uncertainty (Autor, 2022; Lane, 2023a).

Two facts follow from where that change begins. First, it begins inside firms. An individual employer reorganizes tasks, adopts a tool, or redefines a role before any occupation-wide title or employment count moves. Second, firms adopt at different speeds and in different places. Technology diffuses unevenly across regions, so the mix of skills a market needs reflects its own industry base as much as any national trend (Workforce Information Advisory Council, 2024). The AI skills a California employer seeks differ from those an employer in Arkansas or Kentucky seeks, because the underlying industries differ. That variation makes the firm the natural unit of analysis for skill demand. Firm-level detail is what intermediaries most need to be useful to the employers and regions they serve. Firm-level data rarely clears disclosure review, so the publishable form of that detail sits below the occupation, at the level of specialized roles and work activities, aggregated to the regions intermediaries serve.

Practitioners feel this gap directly. At the 2026 Industries of Ideas convening, which examined how research investments reshape local labor markets, more than 80 percent of participants, nearly all of whom work with labor market data, reported that they did not have the information they needed to understand AI's impact on their own state or regional economies (Industries of Ideas, 2026).

Regional concentration deepens the point. Where an industry dominates a local economy, it creates distinctive combinations of experience and skill that employers value and price in ways a national profile never shows. A welder certified for aerospace work commands a different market than one in structural construction. A data analyst in a defense-heavy region works to requirements that a national occupation description omits. These are the differences that determine whether a company can staff a plant, whether a college should launch a program, or whether a worker should retrain.

Currency compounds locality. Roughly 37 percent of the top skills for an average job changed within about five years (Burning Glass Institute, 2022b). Employers now expect a large share of core skills to shift again by 2030, and the resulting skills gap is among the most cited barriers to

business transformation (World Economic Forum, 2025). A national reference that updates on a multi-year cycle and reports averages cannot keep pace with a market that moves this fast at the local level (U.S. Department of Labor, 2024).

Skill demand and skill supply are best understood in a local context, and hence ONET's value is realized by giving states, regions, and sectors a common structure they can extend to their own conditions.

Labor market intermediaries and ONET

Labor market intermediaries are important, often overlooked, but essential users of the information that O*NET can provide. This paper uses the term in a specific way. A labor market intermediary can be, among other things, an organization that uses labor market data, whether national statistics, administrative records, or market signals, to provide guidance for policymakers, employers, workers, and students.

The category is broad. BLS, state labor market information offices, and workforce agencies produce the official picture of employment, wages, and projections. State and local workforce development boards and the career centers they oversee counsel jobseekers and direct training dollars. Economic development organizations and chambers of commerce recruit employers and judge whether a region can staff a project. Community colleges, universities, and state higher education agencies design programs and advise students. K-12 and career and technical education systems build the pathways that lead into those programs. Industry associations, sector partnerships, labor unions, apprenticeship sponsors, and credentialing bodies define what competence means within an industry. Community-based organizations help workers the market underserves find a way through. Private analytics providers perform much of the same translation on commercial terms, and they have driven a significant share of the recent innovation in speed and interface. They map their work back to the public standard, which is one more reason it matters.

They are essential to making ONET valuable to both employers and jobseekers. Few employers or jobseekers consult the O*NET language and related data directly. They access it through a state occupational profile, a regional demand study, a career navigation tool, a program review, or a site-selection brief. A re-imagined O*NET's contribution could be to make those products more actionable, timely, local, and trusted, both by giving intermediaries a common vocabulary and data structure they can extend to their own conditions and by providing them with a benchmark against which they can validate other sources. Improving O*NET would improve everything built on it.

O*NET is a practical tool whose value depends on how well it supports decisions. It has a great deal of competition in the marketplace, including Mosaic, Competency Model Clearinghouse, and DoE Employability. A workforce board choosing programs to fund, a college considering a new credential, an employer describing a job, and a worker planning a career move each need different levels of evidence. A modernized O*NET should provide both a common language and clear guidance on which data are suitable for which uses if it is to remain relevant. That means starting with the decisions users need to make, then building the data structure, level of detail, and validation standards required to support them.

Three groups of these intermediaries carry the need most directly, and they represent the networks that the LMI Institute and CREC serve. Each makes consequential decisions about a local economy, each needs evidence to make them well, and each feels the information gap in a different place. A modernized O*NET should serve all three.

- **Economic developers** feel the local, current-signal gap most. Skilled labor availability remains one of the most cited factor in corporate site selection, named important or very important by nearly every respondent in a recent national survey, with the depth of regional talent pipelines close behind (Area Development, 2026). To recruit and retain employers, economic developers need a current, regional picture of skill supply and demand.
- **Workforce developers** feel the value-and-outcomes gap most. The Workforce Innovation and Opportunity Act makes the public system demand-driven and holds local boards accountable for employment, retention, and earnings (U.S. Department of Labor, n.d.-b). They need skills and credentials validated against wage and employment outcomes to show that a program works (McGrath et al., 2025).
- **Higher education leaders** feel the alignment gap most. They must match programs to local demand and show that credentials pay off, a pressure sharpened by new student-financing rules (Georgetown University Center on Education and the Workforce, 2026). They need transparent, current data connecting credentials to jobs in their communities, and clearer categories for the credentials themselves (Mullin, 2024).

One gap underlies all three. A well-designed common language would let an economic developer, a workforce board, and a college read the same signal and build decisions on the same evidence. That shared benefit, if achieved, would be the case for treating O*NET as public infrastructure rather than one agency's product.

One option is to integrate data from existing sources into O*NET, so our fragmented system of education and training can move quickly and directly to better providing this shared benefit. The proposed America's Trusted Talent Data System provides an actionable plan to integrating federal data for providers, programs and credentials that currently exist in four different federal program data collections across two federal agencies without changing a single law into a single entity (Mullin & Intentional Futures, 2026). Even without integrating data directly, improved interoperability and standardization of key metadata could greatly improve the ability of different systems to use O*NET to enrich other workforce data systems.

What O*NET Is, and Why “Trust” May Not Be Enough

O*NET was a major advance when it launched in 1998. It replaced the Dictionary of Occupational Titles, moved occupational information from a static book to a database, and created a common structure for describing occupations, tasks, skills, knowledge, abilities, and work activities (National Research Council, 2010; U.S. Department of Labor, n.d.-a). That design is the reason O*NET is trusted. It is also part of why it is hard to modernize.

O*NET is governed and built for comparability rather than speed. ETA sponsors the program through a grant to the North Carolina Department of Commerce, and the National Center for

O*NET Development maintains it (RTI International, n.d.). Its surveys are federal information collections that must clear the Office of Management and Budget under the Paperwork Reduction Act (Office of Management and Budget, n.d.). Its occupational structure is tied to the Standard Occupational Classification, which OMB governs and revises on a roughly decennial cycle (Office of Management and Budget, 2017, 2024).

That governance model creates real limits. New occupations, skills, and collection methods cannot be added quickly, because changes move through federal clearance and classification processes designed for statistical consistency. The survey method reinforces the same trade-off. O*NET draws national samples of establishments and incumbent workers, supplemented by expert ratings for harder-to-survey occupations, producing standardized, weighted, and documented data across roughly a thousand occupations (National Research Council, 2010; Handel, 2016). The collection rotates through occupations over several years, response rates have fallen, and the resulting data represent national averages (U.S. Department of Labor, 2024).

The program has continued to advance within these constraints. The O*NET Center has developed natural-language-processing and machine-learning methods to streamline production, launched the Web Services 2.0 API, and published the O*NET database in JSON-LD format (U.S. Department of Labor, 2026). These steps give ETA a working foundation in AI-assisted production and open, machine-readable publication, and the agenda in this paper builds directly on them.

O*NET's strengths and its limits come from the same design. A workflow built for representativeness, consistency, and transparency produces a trusted national reference. This workflow produces data that are slow to adapt, national, and descriptive at a moment when users need information that is current, local, and actionable. Surveys play an important role, but alternative data collection techniques could speed up delivery, provide local nuances, and offer more analytic insights.

The missing piece: no standing way to hear users and manage change

Slowness is the symptom for an underlying structural failure. O*NET has never had a standing mechanism to take in what users need and convert it into managed change. Content follows the classification cycle. New collection waits on federal clearance. The structure of the taxonomy is set by processes built to protect statistical consistency. No process carries the opposite assignment, which is to ask what decisions users face, where the data falls short, and what should therefore change.

The feedback loop also runs largely in one direction. The program maintains several intake channels, and it has not published a summary of what users report or how it responds. A state analyst who flags a stale occupation, or a developer who documents a broken crosswalk, has little visibility into how the concern was weighed. The Department's 2026 Request for Information on modernizing O*NET is the most complete public accounting of user concerns in years (U.S. Department of Labor, 2026), and it shows the value of asking at scale. A standing channel would carry that work between such moments and make listening a routine part of the program.

The costs compound. Gaps that users identified years ago persisted while the market moved, because nothing existed to register them as obligations. Users who could not wait built their own taxonomies, which multiplied proprietary vocabularies and deepened the common-language problem the public standard exists to solve. Each workaround made the standard less central, and a reference that drifts from practice loses the trust that gives it value. The present difficulty traces back to the absence of an institution able to hear, decide, and revise.

Managing change is the other half of that function. In the process of updating standards, a data governing body also owes its users an account of what changed, when, and why, so that analyses built on it stay reproducible. Versioning, documented decisions, and an auditable record are the mechanics of that account. Without a body responsible for them, even welcome improvements reach users as discontinuities they must discover on their own.

O*NET's Role: The Common Language, Not the Whole System

The deeper problem lies in consistent adoption tied to communication built on previously earned trust. Firms do not use O*NET to design or describe their jobs. They organize job information around their own operations and apply their own titles, and federal classifications were built for statistical comparability rather than for that purpose (National Research Council, 2010).

Furthermore, they often build custom taxonomies of occupations, skills, seniority, and activities, often at considerable expense. Those taxonomies are proprietary, go stale quickly, and do not map to one another or to a public standard. The market is left without a common language (Zweig, 2026).

A modernized O*NET should close that gap by serving as the neutral public reference to which others could map. Its role should be to govern the reference rather than to author every skill or out-build every private tool. O*NET could act to set and maintain the common structure, validate other data against it, and to connect private and state taxonomies to a shared public backbone (Zweig, 2026). It could supply a trusted, transparent, openly available frame, validated against outcomes. The seed already exists because private skills libraries tag their data back to O*NET codes. The public standard is the common denominator even now (Lightcast, n.d.).

It is clear that practitioners would find value in a neutral reference. At the same 2026 Industries of Ideas convening, state and regional data users returned repeatedly to one idea: a single trusted reference that everyone can map to, supported by common definitions and shared metadata (Industries of Ideas, 2026).

This role clarifies what O*NET should and should not try to do. It should not attempt to replace wage records, job postings, employer input, education, or training data. It should provide the common definitions, identifiers, occupational and skills descriptions, crosswalks, and validation standards that let those sources connect and be compared. It should make the wider ecosystem interoperable without trying to become the entire ecosystem. O*NET should be designed for the intermediaries as the first users because they carry the standard the rest of the way to workers, students, and firms.

Economics explains why this layer needs public stewardship. **A common language is a public good.** One user's use does not diminish another's, and users cannot easily be excluded. A

common language has a further property: it grows more valuable as more people adopt it. No single firm captures that shared benefit, so no single firm will invest enough to build and maintain it for everyone. That is why proprietary taxonomies keep multiplying while the shared standard stays underfunded, and why the reference layer belongs in public hands while firms compete on the tools built above it (Center for American Progress, 2017; Mullin, 2026).

Trust Is the Precondition

A common language is only useful if users can trust what it carries. Trust cannot be assumed for skills data, because much of it is scraped, inferred, or self-reported rather than measured. The line between what data measure and what analysts infer from them is easily blurred (Fain, 2025). Trust must be built, and it has to be built into how the data are produced and used.

The data generation process introduces bias

Every dataset is shaped by how it was created. Job postings and resumes are written in borrowed words, so even strong tools applied to weak inputs simply scale the weakness (Lane, 2020). New forms of data raise the stakes. Information generated by large language models can carry biases that have not yet been studied, which means it cannot yet be trusted on its own terms. Many private vendors, whether by choice or by habit, document their collection and validation methods poorly. Data that has not been benchmarked against a shared standard is not trustworthy, however sophisticated the method that produced it.

This is the strongest argument for a public standard. O*NET can serve as the benchmark against which other signals are validated. Its occupational structure, content model, and descriptors give the field a neutral reference for testing whether a new source measures what it claims (National Research Council, 2010; Handel, 2016). Private libraries already map to O*NET codes precisely because that reference exists (Lightcast, n.d.). A benchmark that everyone can see is what turns a proprietary number into evidence.

Taxonomies should be humble

A standard can fail in the other direction as well. Over-engineered taxonomies are hard to implement on the ground, and they can create a false sense of structure and accuracy. Assigning real-world jobs and skills to fixed categories is inherently noisy work, and a classification that hides that noise misleads its users. A modernized O*NET should therefore treat its mappings as documented approximations rather than exact equivalences. It should preserve firm, regional, and sector variation, allow extensions for local conditions, version its changes over time, and label uncertainty where the evidence is thin. Structure should serve comparison without pretending to a precision the underlying data cannot support.

What trustworthy skills data means

Trustworthy does not mean perfect. It means that a user can trust that a dataset's origins, methods, limits, and quality are visible and appropriate for the decision at hand, that it is “fit for purpose” (Hendra et al., 2026; Federal Committee on Statistical Methodology, n.d.). In practice, trustworthy skills data should have the following attributes:

- **clear provenance**, trust in where the data came from and how it was produced;
- **documented methods**, trust in how a skill was measured or inferred;
- **stated limits**, identifying what the data does not capture and how uncertain it may be; and
- **validation against outcomes**, showing whether the signal meets the needed purpose such as employment or earnings (fitness for purpose: Hendra et al., 2026; Burning Glass Institute, 2024).

With these properties, a figure becomes evidence. Without them, it is just a number. Users can then ask a short set of questions before relying on a source: What decision is this meant to support? What is the cost of being wrong? What does the data actually measure, how was it produced, and has it been tested against outcomes? These four properties describe what a user must see. The production quality behind them can itself be scored on dimensions such as coverage, accuracy, measurement reliability, objectivity, producer reputation, and protection from disclosure, which together feed the test of validation against outcomes (Federal Committee on Statistical Methodology, n.d.; Hendra et al., 2026).

Data users describe the same requirements in their own words. Asked at the same convening what they look for in trustworthy data, participants named reliability, actionability, common definitions, timeliness, and clear provenance and documentation, the properties listed here (Industries of Ideas, 2026).

Matching data to the decision

Different decisions demand different levels of precision, currency, locality, and validation. A common mistake is to treat skills data as if one standard could serve every purpose. In practice, fitness for purpose depends on the decision being made (Sigelman et al., 2025). Data strong enough for a national estimate may be too broad or too stale for a local training investment or an accountability judgment (Lane, 2020; Federal Committee on Statistical Methodology, n.d.).

Decision	Who decides	What “good enough” means	Tolerance for error
Career exploration	Students, jobseekers, advisers	Directionally accurate and broad, enough to surface options and prompt a next step	Tolerant of imprecision, not of systematic bias: a single suggestion is easily revised, but exploration feeds enrollment, so signals that systematically mislead carry high, hard-to-reverse cost to the learner
Program design	Colleges, training providers, workforce boards, employers	Regional, reasonably current, and defensible enough to allocate resources and shape curricula	Moderate: errors waste time and money but are recoverable

Decision	Who decides	What “good enough” means	Tolerance for error
Public funding and accountability	Legislators, agencies, funders, regulators	Validated, auditable, transparent, and tied to outcomes, able to withstand scrutiny	Low: dollars and consequences attach; independent evaluation expected

A modernized O*NET should make these distinctions explicit, telling users when data is appropriate for broad guidance, when it is strong enough for planning, and when it meets the higher standard required for public investment. WIOA already assumes that highest tier by requiring independent evaluation of the programs it funds (U.S. Department of Labor, n.d.-b). The tiers describe the rigor a decision demands, not the stakes it carries for the person. For a learner or a training provider, even exploratory data must be honest about outcomes, because a wrong path is costly to reverse. Fitness for purpose is judged relative to the specific goals and users a dataset serves (Hendra, 2026).

Validating efficiently

The main objection to rigorous validation is cost. Validation, though, does not have to be a one-time audit. It can be built into the system and largely automated where production is transparent and accountable (Lane, 2026). Three steps make validation efficient at scale. First, validate skills signals against administrative ground truth, linking them to wage and employment records to test whether a signal predicts the outcomes it claims; secure data enclaves let many analysts work with the same protected data without copying it (Lane, 2020; U.S. Census Bureau, n.d.). Second, treat use as evidence, since tracking how and by whom a dataset is used reveals quality and relevance at lower cost than auditing every figure (Lane & Potok, 2024). Third, invest in the people who do the checking, because data literacy inside public agencies turns validation from a contract expense into a standing capability (Haensch et al., 2024). An automated search process documented in *Nature: Scientific Data* found 2,290 publications using O*NET data by 6,511 authors at 1,496 institutions from 2015 to 2025, a corpus that can be mined to reveal how the data are actually used (Chenarides et al., 2026).

What a Modernized O*NET Must Deliver

The gaps that matter now have outgrown O*NET's original design. Closing them is as much a question of method and plumbing as of policy, and the encouraging fact is that most of the pieces already exist. Five capabilities describe the work: detail below the occupation, a timeliness layer drawn from postings, a disciplined use of AI, a clear division of labor among data sources, and interoperability that states and employers actually want.

The gaps that remain

Before the capabilities, the gaps. O*NET was built to close one foundational gap: the country had no common, structured description of what work requires. That gap is largely closed. Five newer gaps stand in its place.

- **Changing employer demand.** The link between rapid technological change and shifting skill demand, jobs, and earnings is poorly measured, leaving vast uncertainty about workforce outcomes (Autor, 2022).
- **A common language.** Employers describe the same work in different, proprietary terms that do not map to the public standard or to one another (Zweig, 2026).
- **Local and current signal.** National, slow updates cannot capture how skill demand varies by region or keep pace with fast-changing needs (Workforce Information Advisory Council, 2024; Burning Glass Institute, 2022b).
- **The value of skills and credentials.** Workers and institutions cannot easily tell which skills or credentials lead to a better job or higher pay (Burning Glass Institute, 2024; Hanson et al., 2024).
- **Trustworthy inputs.** The raw material for skills data is noisy, and tools applied to weak inputs scale the weakness.

These gaps point to a market that has turned its attention from occupations to skills. More than half of states have adopted skills-based hiring for public jobs, and employers expect a large share of core skills to change by decade's end (National Governors Association, 2025; World Economic Forum, 2025). The challenge is translation: turning noisy, scattered signals about human capability into a shared, current language that supports decisions (Zweig, 2026).

Detail below the occupation

The most requested capability is detail below the SOC occupation. Firms in the same occupation demand different skills, and those differences track pay (Deming & Kahn, 2018). Even the newest federal skills data sits above this level. A 2026 BLS analysis joins O*NET-based skills scores to wages and metropolitan geography, yet its local picture comes from national skill-importance scores applied to each area's occupation mix rather than skill demand measured on the ground, so the detail stops at the occupation (Hopson & Watson, 2026). The useful level of detail sits at specialized roles and work activities, with crosswalks that preserve comparability to the occupation and recognize regional or sector variations. Software development spans front-end, embedded-systems, and machine-learning roles. Nursing spans intensive care, informatics, and case management. Aerospace welding requires different certifications than structural welding. This is the level at which employers hire, colleges design programs, workforce boards target training, and economic developers judge whether a region can support a company.

States fill this gap today by hand. Minnesota's labor market information office interviewed 146 establishments covering roughly 1,000 vacancies to document the experience-based requirements behind hard-to-fill production jobs (Minnesota Department of Employment and Economic Development, 2019). A shared library of work activities would replace fifty separate handcrafted answers with one validated resource that states and regional partners extend rather than rebuild (Zweig, 2026). Organizing occupations from common activities also reflects two decades of research showing that technology changes work one task at a time (Autor et al., 2003).

Job postings: power and blind spots

Job postings are the timeliness layer wrapped around the survey backbone. They carry the market's own words for skills, tools, and credentials months or years before survey instruments catch up. Validated language-model extraction can map that messy employer language onto the public standard, freeing occupational experts to focus on oversight and validation rather than manual classification (Zweig, 2026).

Among other applications, postings help surface emerging work. A new title becomes meaningful when it clusters with distinct tasks, persists over time, and spreads across employers and regions. “Data scientist” followed exactly this path before receiving its own code in the 2018 SOC revision (Office of Management and Budget, 2017). Safeguards separate new work from a trendy label: persistence and breadth thresholds, task content that genuinely differs from existing occupations, review by occupational analysts, and confirmation through employer consultation led by state agencies. Oregon’s emerging health care titles and the data-center operator pathway documented in Texas show that states already encounter this change with no systematic national process to define and track it (Wallis, 2026; Texas Workforce Investment Council, 2026).

At the same time, postings have known blind spots. They over-represent large employers, high-turnover jobs, and openings filled through formal channels. Listed requirements are often wish lists, and they shift with the economy: when workers are easy to find, employers ask for more (Hershbein & Kahn, 2018). Some measured skill change reflects how employers write postings rather than how the work changes. Posting data must therefore be validated against survey and administrative sources before it enters the public standard, with transparent methods and independent review to catch bias introduced in collection and classification (Lane, 2020).

A further limitation is that postings capture expressed demand, which must be interpreted carefully. Employers may list skills, degrees, or credentials that are copied from templates, used as rough proxies, or relaxed when hiring conditions change. Conversely, some capabilities that matter greatly on the job may not appear in postings because employers assume them, assess them informally, or develop them after hire. None of this diminishes the unmatched value of job postings as a timely, granular signal of changing employer demand; it does mean that the strongest uses of posting-derived skills data pair that signal with practical validation. That validation can take several forms, including comparison to hiring, wage, retention, and advancement outcomes, as well as direct employer engagement to test whether the patterns appearing in the data reflect how work is actually changing. The Burning Glass Institute’s Skills-First Workforce Initiative offers one model for this kind of feedback loop: using employer voice to cross-check, refine, and operationalize what large-scale labor market data appears to reveal.

AI in two roles

Artificial intelligence enters this work in two distinct roles. As a **production method**, validated AI can extract and classify skills, tasks, tools, and credentials from postings and other text at a scale manual processes cannot match, maintain a deeper taxonomy organized around work activities, and support continuous versioning. Validated AI should mean something specific: models and classifications benchmarked against surveys, occupational experts, and

administrative outcomes; tested across industries, employer sizes, and regions; documented with methods and error measures; labeled provisional until validation is complete; and reviewed as models and source data change (Zweig, 2026).

As a **subject matter**, the same posting-derived signals can track AI's own adoption across tasks and work activities. Care is required because exposure is not adoption. O*NET should keep four questions separate: where an occupation may be exposed to AI, whether employers have actually adopted it, how adoption changes tasks and job design, and what follows for employment, earnings, and job quality. The technology-skills file and hot-technologies designation already show that tool adoption can be read from employer language; the extension is to connect that signal to the specific tasks where tools are used, and to let states verify local differences (Zweig, 2026; Lightcast, n.d.). Posting and AI-derived signals should stay provisional, published quarterly or semiannually with clear labeling, until survey and administrative evidence confirm them. North Carolina's analysis of AI adoption by industry shows how state analysts can supply that verification layer (Smith, 2024).

A division of labor: surveys, records, and language models

No single source suffices, so the design question is how to combine them. Surveys of workers and experts remain the backbone for O*NET, giving representative, comparable, validated coverage across all occupations. Administrative-record matching, such as wage records linked to employers and to education records, supplies what surveys cannot: real, local, longitudinal evidence of what work pays and how people move. Thirty-three states have State Longitudinal Data Systems which link education and workforce data; nine more are building one (von Zastrow, 2024; von Zastrow & Perez, 2024). Private sector data which produce heterogeneous concepts in unstructured format can be made more standard by using Large Language Models to map onto the standard, reading postings, resumes, and course descriptions to surface emerging skills in near real time (Zweig, 2026; Lightcast, n.d.). Surveys set and validate the frame, records ground it locally and in outcomes, and language models keep it current between waves. None substitutes for the others. The aim is to complement the survey backbone with faster and more local evidence, not to substitute administrative data for representative measurement.

These methods are not equally mature. The table below summarizes what each adds and how ready it is for use.

Method	What it adds	Readiness
Job-posting analytics	Near-real-time signal on demanded skills and titles	Mature; in wide commercial and public use; validation of quality and meaning needed to anticipate bias
Administrative-record matching	Local, outcome-linked evidence of supply and mobility	Ready where data-sharing and privacy rules allow; uneven use across states due to funding and trust barriers

Method	What it adds	Readiness
Employer and worker surveys	Representative, comparable, validated coverage	Mature, but slow, costly, and facing falling response rates; declining trust in results and interpretation
Credential registries	Machine-readable descriptions of credentials and their skills	Established standard; adoption still partial
AI and NLP skills extraction	Continuous mapping of language onto skills	Maturing; needs human validation and bias checks
State administrative data	Regional detail surveys cannot provide	Available; capacity and interoperability vary widely

Interoperability states and employers want

Skills data works at scale only when different systems can read and use the same information. Today, a job posting, credential record, training program, and state workforce database may all describe skills differently, which makes them hard to compare or connect. ETA can address this by leading with open standards rather than a single platform, building on what exists: the Credential Transparency Description Language, the open infrastructure of the T3 Innovation Network, Rich Skill Descriptors, and the Jobs and Employment Data Exchange among others (Credential Engine, n.d.; U.S. Chamber of Commerce Foundation, n.d.-a, n.d.-b). O*NET's part could be to provide open identifiers, documented interfaces, common definitions, and maintained crosswalks so education, workforce, employer, and vendor systems can exchange information without losing meaning.

Standards also mean empirical crosswalks. The connection between education and work runs through a federal crosswalk that pairs each instructional program with the occupations it is designed to prepare people for (National Center for Education Statistics, n.d.). Built on expert judgment, that mapping records what a program is meant to lead to, not where graduates actually go. For nursing the two match; for many programs they diverge. The fix is to build maps from linked student and wage records that follow completers into the workforce. Several states already do this through their longitudinal data systems, and the data-sharing foundation described later would let every state do the same. Adoption follows when a standard proves useful, not when consensus is forced (Zweig, 2026).

Interoperability must reduce burden rather than add another compliance task. A state should be able to adopt a standard and receive richer data than it contributes. An employer should be able to post jobs in a common format and get better matches. A training provider should be able to report once and satisfy several requirements. Interoperability succeeds when the payoff is less duplication and better data (Lane & Potok, 2024).

Developers who build on O*NET report concrete barriers. Update cadence varies across occupations, so a single release can mix profiles of different vintages. Little detail is published below the occupation, so every tool that needs role-level distinctions builds its own. Users must maintain their own crosswalks among O*NET-SOC codes, job titles, skills frameworks, and credentials. Mappings can look more precise than the evidence supports, because O*NET does

not consistently show how a value was produced. The burden shows up even in sophisticated hands: BLS imputes skills for 38 residual occupations from group averages or the nearest related occupation, and in one career index, blockchain engineers inherited the income, growth, and vacancy values of the broad “other computer occupations” category (Dey et al., 2024; Gallup, 2023). Publishing current metadata, sub-occupation detail, maintained crosswalks, and clear indications of uncertainty would reduce that burden and make the difference between a measured value and an imputed one visible to users.

Governance and Institutional Change

Relevance, sustainability, and trust are governance questions before they are technical ones. So is the balance between a shared standard and the competition that keeps it honest. The gap between what O*NET offers and what decisions require widened because no one held the job of noticing it and acting. Today the analysis of data quality is left almost entirely to data producers. That arrangement misses a basic point: data quality is inherent in use as much as in collection. A dataset that is excellent for a national estimate can fail a local training decision, and only the user can judge the difference. A modernized O*NET needs a governance model that is responsive to users and that holds the program accountable for meeting their fit-for-purpose needs (Lane, 2020).

A model built for speed and trust

O*NET is slow by design. Its content changes on the roughly decennial classification cycle, and new collection requires Paperwork Reduction Act clearance. That cadence cannot track a market that shifts in months. Speed and trust need not trade off if the governing body is built for both. A standing, independent entity could engage public and private users, surface emerging needs continuously, and update the standard through transparent, rules-based methods supported by clear versioning and an auditable record of changes. Mature standards show the model works. The Financial Accounting Standards Board governs accounting through a permanent, independent board, an analogy Zweig draws for O*NET. The Bluetooth SIG governs an open technical standard through a member consortium, an analogy Lane draws for shared data (Financial Accounting Standards Board, n.d.; Bluetooth SIG, n.d.; Zweig, 2026). Each replaces a periodic event with a standing steward.

Who decides

Clean governance separates three kinds of decisions. Priorities and needs, which gaps to close and which changes users most want, belong to a standing advisory board that includes states, employers, educators, data providers, and workers, because relevance comes from the people who use the data. Methodological validity, whether a proposed change is sound, belongs to an independent technical committee of methodologists, occupational researchers, labor economists, statisticians, and AI experts. Accountability and resources, final authority over the public standard and its budget, belong to ETA as the public steward. The Workforce Information Advisory Council offers an existing structure that could serve on an interim basis, supplemented to reflect O*NET's particular uses. Transparency binds the three together through published

methods, versioned releases, public comment, and an audit trail, so any change is visible and open to challenge (Lane, 2020; Federal Committee on Statistical Methodology, n.d.).

State and regional data users reach the same conclusion. Convened at the same event, they identified data governance, the clear rules, authority, and inter-agency agreements that determine how data can be used, as the barrier that most often keeps sound data from informing decisions, and they called for a formal governance structure supported by standing technical advisory boards (Industries of Ideas, 2026).

Public good or private product

The skills-data ecosystem includes public and private providers, and the boundary between them is genuinely hard to draw. Private firms have driven much recent innovation in tools, interfaces, and update speed, and revenue supports that work (Zweig, 2026). Requiring too much openness could weaken the incentive to invest. Leaving the shared layer entirely to the market creates other risks: vendor lock-in, paywalls, opaque methods, and the exclusion of users who cannot pay (Mullin, 2026). The workable answer keeps the common reference open while firms compete above it. Identifiers, reference taxonomies, crosswalks, and validation methods warrant openness to protect transparency and access; analytics, interfaces, and specialized applications can be left to the market. Three procurement practices keep that arrangement healthy: buy outputs and access rather than lock-in, with terms guaranteeing data portability; require vendor tools to map to the public standard so results stay comparable; and fund open alternatives where the market underserves public users (Lane, 2020; Center for American Progress, 2017). An independent governance board could review that boundary continuously with the public interest in mind.

A public standard also carries risk. The same features that make a common language valuable, one shared structure and broad adoption, can allow it to become a monopoly imposed by authority rather than earned through usefulness. That can entrench incumbents, lock in outdated methods, and crowd out innovation. This tension is inherent in any standard. A common framework makes data comparable, while competition and open access keep it accurate, responsive, and improving.

Strong governance and credible, independent evaluation can manage this tension without defaulting to the status quo. Rapid technological change and shifting employer demand mean the standard must adapt to market conditions. It should remain contestable and earn adoption by demonstrating value through continuous evaluation grounded in a community-defined theory of change, not through mandate (Lane, 2026; Zweig, 2026). Its authority should rest on evidence rather than status.

Private and alternative taxonomies should serve as sources for comparison, validation, and possible inclusion, not as competitors to exclude. Community engagement should also create clear pathways for their improvements to flow back into the public standard. The goal is a common reference that provides consistency and discipline while continuing to respond to market change and new evidence (Lane, 2026; Lane & Potok, 2024).

An Agenda for the Federal-State Partnership

Eight recommendations follow from this analysis. The first six describe a single arc: modernize the standard, make it interoperable, build the capacity to use it, test it in the field, validate it independently, and govern it for the long term. The last two secure the foundation the others rest on, the legal authority to share data and the funding to sustain the work. Each is stated as an action and grounded in the analysis above, and each is written with the intermediary layer in mind, since that is where federal investment reaches regional decisions.

Recommendation 1. Modernize O*NET with validated AI, and make it local and expansive.

Reposition O*NET as the nation's common language for skills rather than a periodic survey product. Use validated AI to build and maintain the taxonomy, with human effort redirected from manual classification to oversight and validation. Organize the taxonomy around work activities in a hierarchical, auditable structure that can be cut to local and sector-specific needs, the route to data that is at once universal and local (Zweig, 2026; Autor et al., 2003). Set the useful level of detail below the SOC occupation, at specialized roles and work activities, with crosswalks that preserve comparability (Deming & Kahn, 2018). Adopt continuous versioning so the standard stays current as skills churn. Capture how AI itself changes work by tracking tool adoption at the task level, using the same posting-derived signals that keep the taxonomy current (Lane, 2020; Lightcast, n.d.).

Recommendation 2. Foster data standards that make the ecosystem interoperable.

Lead the design of open standards so public and private data providers can connect their work, and evaluate whether the standards do what is expected. Systematic evaluation of whether a standard performs as intended is itself an emerging practice (Lane, 2026). Build on the T3 Innovation Network, the Credential Transparency Description Language, Rich Skill Descriptors, and the Jobs and Employment Data Exchange. Replace assumed program-to-occupation links with empirical crosswalks built from linked student and wage records that follow completers into work. Several states already produce these through their longitudinal data systems, and wider adoption follows from usefulness rather than forced consensus (National Center for Education Statistics, n.d.; Zweig, 2026).

Recommendation 3. Support state agency capacity to build and share tools.

Skills infrastructure depends on more than O*NET. States build their own tools, and most lack the capacity to do so well or to share what works. Invest directly in that capacity: skilled staff, secure data environments, linked education-workforce systems, and staff training in data literacy and evidence-building (Haensch et al., 2024). Fund the networks, such as the Multistate Data Collaborative, that let a tool proven in one state move to the next. Florida's effort to reorganize projections around community college service areas shows how much public value a modest, well-targeted investment can unlock (Mullin, 2026).

Recommendation 4. Seed state experimentation designed around real users.

Fund pilots in the states, and require that each begin with specific decisions and a wide range of users at the table, including employers, educators, economists, workforce boards, college administrators and economic developers. Design backward from three or four high-value decisions, preferably ones that support regional economic priorities. States move faster than federal agencies, and a network of well-designed pilots produces evidence a single national instrument cannot (Lumina Foundation, 2025; Mullin, 2024). The Data User Insights Academy, run by the LMI Institute with ETA support, offers a working model for engaging states and users in this design. The Industries of Ideas state pilots point the same way: data users from nearly 30 states judged the pilots successful, especially in building shared data infrastructure, and asked to expand them nationally (Industries of Ideas, 2026).

Recommendation 5. Support robust third-party evaluation of data quality to signal whether the data can be trusted.

Charge competent, independent evaluators with measuring and reporting data quality, and define what quality means for each use. Validation of whether a skill or credential actually moves a worker ahead should be empirical and tied to the decision it serves. Career exploration may need only broad evidence that a credential tends to leverage better pay. Funding decisions need more, because the people who earn a credential often differ from those who do not, and the credential can take credit for what the person brought to it. High-stakes uses call for evaluations designed to separate the two, the standard WIOA already applies (Burning Glass Institute, 2024; Sigelman et al., 2025; Lane, 2026; U.S. Department of Labor, n.d.-b). Quality should be defined for each use as its “fitness for purpose.” (Hendra 2026). The incentives (or the lack of incentives) are central here. Certification of fitness for purpose should sit with professional associations that already maintain data documentation.

Professional associations should be directly involved in certifying “fitness for purpose.” These include organizations representing policy makers who are primary data users as well as groups that maintain the data like the Data Management Association, the International Chief Data Officer and Information Quality (CDOIQ) Institute, the State CDO Network, and the National Association of State Chief Information Officers (NASCIO). This latter group takes on the routine responsibility of maintaining metadata about definitions, lineage, source systems, business rules, validation controls, access restrictions, and known limitations. Rather than treating data documentation as a librarian function, incentives to register that documentation, together with the application of large language models to the documentation corpus, would permit regular,

systematic, and certified updating of data-quality scores posted on resources such as Data Commons or Dataset Search (Hendra et al, working paper; Chenarides et al., 2026; Lane, 2026).

Recommendation 6. Govern the infrastructure through public-private partnership.

Stand up an independent entity, organized as a public-private partnership, to govern the continued development of this infrastructure. Two functions deserve explicit assignment, because their absence produced the present gap: standing intake for user feedback, with published summaries of what users report and how the program responded, and formal change management, with versioned releases and a documented record of what changed and why. Beyond those, it would promote innovation, including from the private sector as a full partner; guard against a hardened standard by encouraging competition and open access; develop and maintain open standards; monitor performance and incorporate market feedback; ensure trust and transparency about where data comes from and how it was validated; and protect accessibility for the small employers, providers, public decision-makers, students, and jobseekers the market underserves (Lane & Potok, 2024).

Recommendation 7. Build the legal and data-sharing foundation the rest depends on.

The most valuable skills signals come from linking wage, education, and training records under appropriate legal constraints. ETA should make the legal plumbing a first-class deliverable: model data-sharing agreements states can adopt off the shelf, clarified authority to link wage and education records for workforce and education purposes, and standardized privacy-preserving methods and secure enclaves (U.S. Census Bureau, n.d.; U.S. Department of Education, n.d.; Lane, 2020). Momentum already exists. New Medicaid work-requirement verification is pushing states to modernize the wage-record exchange that skills data also needs, and the WIAC has recommended a national wage-record data-sharing partnership (KFF, 2026; Workforce Information Advisory Council, 2024). ETA can align these investments so one set of plumbing serves both purposes. A usable framework already exists to build on. The State Wage Interchange System, successor to the Wage Record Interchange System, extends state wage-data sharing to education records, the same linkage that lets states trace where completers actually work and build empirical crosswalks from it (U.S. Department of Labor & U.S. Department of Education, 2023).

Recommendation 8. Fund the public backbone to last.

A modernized O*NET, the standards and crosswalks, and the validation layer are public infrastructure, and infrastructure decays when it is funded one grant at a time. ETA should establish dedicated, durable funding for the public-serving backbone: the standard, identifiers, crosswalks, validation, and the shared data assets beneath the tools. The WIAC made the point concretely in calling for a budget line to sustain the National Labor Exchange Research Hub (Center for American Progress, 2017; Workforce Information Advisory Council, 2024). Without a financing model, the gains from every other recommendation erode between budgets.

Alignment with the Workforce Information Advisory Council

These recommendations extend an existing record rather than depart from it. In November 2024, the WIAC issued its own recommendations toward data that is timely, localized, and actionable (Workforce Information Advisory Council, 2024). This paper reaches many of the same conclusions and adds emphasis on governance and the public good.

This paper recommends	The Council recommended (2024)
1. Modernize O*NET with validated AI	Clean and parse job-listing data for skill extraction, and test new methods
2. Foster interoperable data standards	A common job-listing data structure with open APIs, and a modern BLS API
3. Support state capacity to share tools	Share products across states and build on the Multistate Data Collaborative
4. Seed state experimentation	Fund up to four state pilots linking skills data to wage and education data
5. Support third-party evaluation	Open, transparent evaluation judged by a cross-section of data consumers
6. Govern through public-private partnership	Public data systems governed by public-sector priorities, with shared outputs
7. Build the legal and data-sharing foundation	A national wage-record data-sharing partnership
8. Fund the public backbone to last	A dedicated budget line to sustain the National Labor Exchange Research Hub

A phased pathway

ETA cannot do all of this at once; it is a multi-year build. The sensible principle is to begin with the moves that cost the least, unlock the most, and are hardest to regret. First, adopt open standards and publish existing tools through open interfaces. This approach is inexpensive, signals direction, and lets everything else connect. Second, establish a governing arrangement so there is a body to make the decisions that follow. Third, fund an initial cohort of state pilots to learn cheaply before scaling. The costlier work follows once the foundation holds: modernize the production workflow, link to administrative data for local detail, and scale what the pilots prove. Sequenced this way, each step earns its keep before the next is attempted (Credential Engine, n.d.; Center for American Progress, 2017; Lumina Foundation, 2025).

The pilots should test the model where the consequences are real. Four demonstrations would cover the major challenges of (1) tying Eligible Training Provider List approval to validated skills-and-outcomes data; (2) repackaging skills data into career-navigation tools and measuring whether they change decisions; (3) convening employers, colleges, and workforce boards around shared skills data for a regional industry; (4) standing up a shared validation sandbox where states and vetted vendors test third-party data against wage outcomes under common rules; and (5) tracking how AI is changing work activities, entry-level requirements, and advancement pathways in selected occupations or sectors (U.S. Department of Labor, n.d.-b;

Burning Glass Institute, 2024; CareerOneStop, n.d.). Each should publish its methods and results so what works in one state can move to the next.

Conclusion

O*NET is an asset worth continued investment. Renewing it takes four things: more local data, a modernized approach built on validated tools, an interoperable design, and a governance model responsive to the people who use it, so that the right incentives are in place. Governance matters most. Its absence, and the lack of incentives, is what allowed the other gaps to persist and the quality of O*NET as an asset to degrade. A single test runs through all of it: whether the data is fit for the decision in front of a real user, from a student exploring a career to an agency funding a program.

The return is a common language. That language lets the labor market exchange work, matching what people can do to what employers need done. It also gives the intermediaries who serve regional economies the evidence that policymakers, employers, workers, and students require of them. The data and the technology are largely in hand. What is needed is the structure to assemble them and the will to begin. With the right encouragement, O*NET can be as useful to today's labor market as it was disruptive in 1998, and the states are ready to help build it.

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