Why IT Matters to Higher Education
EDUCAUSEreview

Credential Engine: Driving a Transparent Credentialing Ecosystem

by Stephen Crawford Monday, February 13, 2017

Key Takeaways

- As the number and variety of **degrees, certificates, certifications, and other credentials** has grown, the **lack of transparency** and comparability about them has made it ever more difficult to know what they mean.
- Credential Engine maintains the **Credential Registry** to capture, connect, archive, and **share critical information** about credentials, credentialing organizations, quality assurance organizations, competency frameworks, and more.
- As more institutions join the registry, it becomes more valuable as an **emerging credentialing ecosystem** characterized by **transparency, trust, coherence, and reliable consumer information**.

The past decade has seen enormous growth in the number and variety of degrees, certificates, and other credentials that students pursue to advance their careers and that job seekers present as evidence of their capabilities. One result is increasing uncertainty about the quality and value of credentials and how they relate to one

another. *Individuals* seeking to improve their career prospects wonder about the value of a particular credential compared to others as they consider whether to invest time and money to obtain it. *Employers* wonder what the holders of various credentials really know and can do. At the same time, *colleges and universities* struggle to communicate the performance components of their degrees and certificates to prospective students and to their graduates' potential employers. Unfortunately, the existing maze of credentials lacks the transparency to meet these needs.

Transparency through Technology

There is broad agreement that we need a better system for creating and communicating comparable information about credentials. Fortunately, through the efforts of a groundbreaking technology initiative supported by the higher education, business, and credentialing communities, such a system is now within reach, and opportunities exist for colleges and universities to get involved and take advantage of it.

The nonprofit organization Credential Engine (previously known as the **Credential Transparency Initiative**) has been working to address the transparency problem by:

1. Developing common terminology for describing the key features of all kinds of workforce credentials (degrees, certificates, certifications, licenses, badges, etc.)
2. Creating an open, voluntary, web-based Credential Registry for sharing the resulting comparable information
3. Developing and testing a practical software application that enables access to this information and serves the needs of institutions of higher education, employers, job-seekers, and others

Funded by the Lumina Foundation, the Credential Transparency Initiative has been led by George Washington University's Institute of Public Policy; the American National Standards Institute's affiliate, Workcred; and Southern Illinois University's Center for Workforce Development. Its strategic advisory committee has consisted of senior representatives of the American Council on Education, American Association of Community Colleges, Business Roundtable, Committee for Economic Development of the Conference Board, National Association of Manufacturers' Manufacturing Institute, U.S. Chamber of Commerce Foundation, and University Professional and Continuing Education Association. In addition, nationally respected consultants and hundreds of volunteers contributed to the effort.

Beginning in 2013, the initiative proceeded to establish the common language and build and test the Credential Registry and a prototype search app. In September 2016 the project team presented a live demonstration of the system, using real data from dozens of credential-issuing registry participants, to about 800 in-person and online attendees of a major conference in Washington, DC. It received a positive reception, with 96 percent of attendees responding to the post-event survey viewing the registry as valuable for higher education and employers. Such enthusiasm is one reason that in spring 2017 leadership will shift to the board and staff of Credential Engine, a new nonprofit created to sustain the system and grow it to scale, now funded by JP Morgan Chase as well as Lumina.

How Does the System Work?

Maintained by Credential Engine, the **Credential Registry** uses Web 3.0 technologies to capture, connect, archive, and share information about credentials, credentialing organizations, quality assurance organizations, competency frameworks, and more to support an open software applications marketplace. Apps developed for the registry will enable users to search the registry's data repository and find credentials that meet their criteria for value — just as travel apps enable searching for and comparing flights and hotels.

The Credential Registry is based on a common language known as the **Credential Transparency Description Language** (CTDL) that was developed with broad input from hundreds of credentialing stakeholders in an iterative process. The CTDL establishes the common language in the form of metadata schema and vocabulary that describe key features of credentials, credentialing organizations, quality assurance organizations, and competency frameworks critical for determining the quality and value of credentials. The CTDL conforms to the World Wide Web Consortium's (W3C) specifications and builds on **Schema.org**.

The key features of credentials and credentialing organizations that the CTDL defines continue to evolve in response to input from stakeholders, but at present include: learning or competency requirements, location of those requirements in selected competency frameworks, primary scope of the competency set's application (e.g., targeted industry, occupation, and geographic area), type of assessment and how it was developed, costs and time to attain the credential, labor market value, transfer value, location in education and career pathways, role in occupational regulation and licensing, third-party approval status, and credential holder verification. The **CTDL** can be viewed **online**.

The first app created on the registry is an open-source prototype search app maintained by Credential Engine to demonstrate the power of the registry and promote the development of additional software apps. As a prototype, it enables the existing community of system builders and registry participants to evaluate and improve the system. Once public, it will also allow early end users — students, career counselors, institutions of higher education, employers, and others — to search for credentials of interest and specific information about them. But the prototype app's most important purpose is to activate a competitive apps marketplace by enabling app developers to use its open-source code to develop more specialized apps. New apps emerging in a competitive apps marketplace will provide students, higher education institutions, employers, and others with unique ways to uncover new opportunities. Agencies and associations could also use such apps to create directories of endorsed or approved credentials to publish on their own websites.

At present, the prototype app is available to the organizations putting information about their credentials on the registry. It is expected to go public in the fall of 2017.

Getting Involved

By all indications, this effort is building momentum in paving the way to a more coherent credentialing ecosystem. Dozens of higher education institutions are already posting information on the registry. And now that Credential Engine has been established as a 501(c) (3) nonprofit to take the system to scale, all credentialing organizations, including colleges, certification bodies, apprenticeship programs, and license and badge issuers, are encouraged to join. So also are organizations that accredit, endorse, or otherwise approve credentials and credentialing organizations. There are no fees for participation, which requires little time and effort.

The benefits, by contrast, are substantial. Participation allows schools or programs to gain visibility in a large market of students, employers, and others who increasingly use virtual search tools to find and compare credentials of interest. Participation also demonstrates a commitment to transparency and the confidence to display the quality of the credential involved. Finally, participants receive a suite of services that are useful for short- and long-term technology planning, including information about Web 3.0 technologies and a customized roadmap for advancing their capacity to operate on the emerging web of linked data.

Credential Engine is building a promising new system for creating and communicating critical information to consumers about all forms of workforce credentials. As more institutions put information about their credentials on the registry, the system becomes more valuable alone and as a major component of an emerging credentialing ecosystem characterized by transparency, trust, coherence, and reliable consumer information. That will not only improve the efficiency of the labor market in today's knowledge-based economy; it will improve the lives of students, job seekers, educators, and employers. For more information, visit the **Credential Engine website**.

Steve Crawford is research professor and co-principal investigator for the Credential Transparency Initiative, George Washington Institute of Public Policy, at George Washington University.