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Endorsement 2.0: Taking Open Badges and E-Credentials to the Next Level

by **Daniel Hickey** and Nate Otto   Monday, February 13, 2017

Key Takeaways

- New features in the **Open Badges Specification** will soon make it possible for third parties to add **verifiable endorsements** to these e-credentials — a necessary step for their credibility in many settings.

- Open Badges were intended to **disrupt the existing accreditation model**, allowing a consumer of these new credentials to reach his or her own conclusion about whether the **evidence in the badge supports the claims** made by the badge.

- While it will take some **time for the newer digital e-credentialing systems and networks** to become established, it appears quite certain that **they will**.

When Mozilla introduced **Open Badges** in 2011 as a way to recognize learning and achievement, it heralded a radical shift in credentialing in higher education and beyond. Unlike conventional credentials, digital badges can contain specific claims and detailed

web-enabled evidence supporting those claims, and this information can circulate freely on the Internet. But as with any new technology, it takes time to shake out the problems and standardize solutions. One of the biggest issues — the credibility of these digital credentials — is about to take a big step forward.

New features in the Open Badges Specification will soon make it possible for third parties to add verifiable endorsements to these e-credentials. Many readers are likely familiar with the concept of endorsements for skills via the LinkedIn social network. Starting in 2012, LinkedIn began letting users endorse their connections' skills listed on their profiles. Of course, many find LinkedIn endorsement **requests annoying and question the value of the resulting endorsements** ⬀. However, LinkedIn is engaging in **extensive refinements** ⬀ to its website and algorithms to make its endorsements more credible, searchable, and trackable. It has taken some time, but recruiters and employers can now readily locate individuals who (a) are widely endorsed for specific skills by (b) other individuals who are closely connected in LinkedIn *and* (c) who are widely endorsed for those same skills by their own close connections.

A set of similar endorsement features are about to make Open Badges more credible, searchable, and trackable. These features will allow individuals or organizations who issue badges to add endorsements by other parties to add to their credibility and trustworthiness across different communities. As with LinkedIn, it will take time and investment for these new features to become widely embraced by various stakeholders. But unlike LinkedIn's endorsements, Open Badges will allow multiple institutions to experiment with this feature. The companies and organizations investing in Open Badges can now begin building features that will help badge issuers, earners, and consumers understand and build more value, without having to start from scratch. This article discusses these developments and their implications for digital badges and e-credentialing more generally.

Evolution of the Open Badges Specification

The Open Badges Specification is the most widely adopted standard for digital badges. The specifications concern the size and nature of the metadata fields containing the data that make up a given badge. The initial 1.0 specification was established by a team

working at the Mozilla Foundation, with substantial funding and direction from the MacArthur Foundation. As the Open Badges community grew, the Mozilla team founded the Badge Alliance in 2014. That group worked to define the **1.1 specification** [↗], which introduced Linked Data conventions and "extensions."

The Linked Data and extensions in the 1.1 specification served to keep open badge systems *extensible.* This ensured readability across a wide variety of systems, including search engines, while still allowing badge providers to experiment with new types of metadata that supported new features and functions. This made it possible for the badge standards (and therefore, badge systems) to evolve gradually and intentionally, but without ever having to start from scratch or reject old badges. This also made it possible for the Standard Working Group in the Badge Alliance to envision a wide range of enhancements for the next major revision to the specifications, released as **Open Badges 2.0** [↗] on December 31, 2016.

This major development for Open Badges accompanied another big change: The specification work is graduating to the next level in the complex realm of Internet standards development. Back in October 2016, the Badge Alliance board **announced** [↗] that all of the Open Badges Specification work and some community support would move to a new home within the IMS Global Learning Consortium, starting January 1, 2017. **IMS Global** [↗] is a membership organization whose primary function is establishing standards for Internet-based educational technologies, such as learning tools interoperability (LTI) standards. The LTI standards make adding functionality (including digital badges) to learning management systems easier.

A new Open Badges Working Group formed at IMS Global has the task of driving implementation of the 2.0 version and developing future improvements, while fostering adoption and growth through the consortium's member network of vendors and educational institutions.

Among the most important capabilities defined in the 2.0 specification are those that support *endorsements.* These specifications permit interoperable and extensible features that allow "third parties" to endorse badges issued by the "first" party to learners, the "second" party. To better understand how this will transform badges and

e-credentialing, it helps to consider how schools are accredited and Open Badges are currently endorsed.

Existing Models of Endorsement in Education

Most schools and universities are endorsed via external *accrediting bodies.* These organizations charge a substantial fee to conduct site visits, review the extensive information that schools gather, and guide continuing improvement. Many professional educational programs have additional specialized accreditation from their corresponding professional associations. Accreditors look at every aspect of a program, including leadership, instructors, courses, assignments, and student work. While they don't look at actual student work before it is graded, accreditation is a comprehensive endorsement of everything that ends up on a transcript.

In key respects, Open Badges were intended to disrupt the existing accreditation model. In addition, allowing the recognition of more granular and less formal competencies, a consumer of these new credentials (e.g., an employer, admissions officer, educator, peer) could examine the evidence in the badge and reach his or her own conclusion about whether that evidence supports the claims made by the badge. Open Badges introduce additional disruption by allowing this information to readily circulate in digital social networks where it can gain additional information and meaning.[1]

In a previous exploration of digital badges and e-portfolios, we searched the **Portfolium** [↗] platform for real students who were knowledgeable about the Health Insurance Portability and Accountability Act (HIPAA).[2] We quickly found several different HIPAA badges, including one that was earned by a community college pre-med student named Luis Lopez (figure 1). Lopez earned the badge for his knowledge of HIPAA gained in coursework at Los Angeles Southwest College. The current Open Badges 1.1 Specification does not contain an endorsement metadata field. As such, Open Badges are now implicitly endorsed by whoever issues them. In most cases, that is the person or organization named in the *Issuer* metadata field.
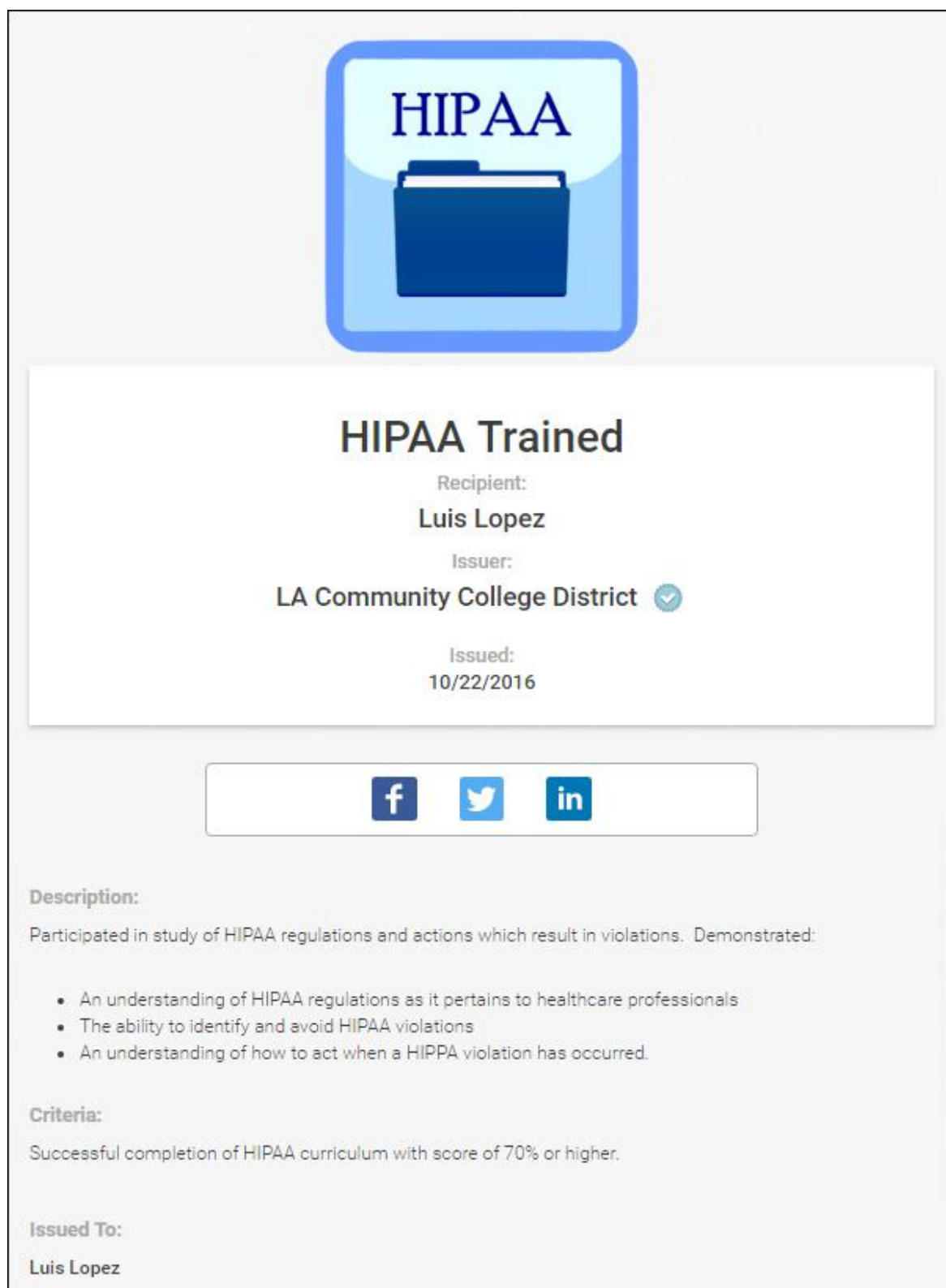
Figure 1. Example badge for knowledge about HIPAA regulations

Lopez's badge was issued by the Los Angeles Community College District (LACCD). Because LACCD is a name-brand school system, the information included in the criteria URL and displayed on the badge seems reasonably credible. A quick search reveals that

LACCD is accredited by the **Accrediting Association for Community and Junior Colleges** ⬈, within the Western Association of Schools and Colleges. However, accreditors do *not* typically endorse certifications for such a specific competency as knowledge of HIPAA; accreditors' focus is on the academic programs as a whole. While Lopez's HIPAA badge certainly provided more claims and evidence than his transcript (which likely would not even mention HIPAA specifically), an employer for whom HIPAA competency is crucial would typically want more information. The LACCD had indeed developed a system, as part of a large federal workforce development grant, for allowing its various colleges to use approved curricula and assessments so that they could issue specific badges for specific competencies. But, none of this information was (or could have been) included in Lopez's badge. This led us to dig further into specific training and credentialing for HIPAA.

Googling "HIPAA Certification" reveals a dizzying array of possibilities. One of the more prominent providers, **HIPAATraining.net** ⬈, offers four levels of certification. These range from a *Privacy Associate* ($99 for an online self-paced module and a brief quiz) to a *Privacy Security Expert* (a $3,200 four-day live course and a comprehensive exam). The HIPAATraining.net website displays the logos of various firms (such as Merck) and organizations (such as the U.S. Department of Veterans Affairs), but it was unclear whether those were endorsers, clients, or both. Author Daniel Hickey called the company and spoke with CEO Bob Mehta, who confirmed that there is no central endorsement or accrediting body for HIPAA credentialing. Rather, those logos represented entities who accept his company's credentials for their employees (and typically pay for the training). Mehta characterized the current status of HIPAA certification as "like the wild west," with a range of providers offering similar online certificates with a range of costs and testing standards.

Our HIPAA example illustrates the opaque tangle that the new nonprofit **Credential Engine (formerly known as the Credential Transparency Initiative** ⬈), is attempting to straighten out. With support from the Lumina Foundation, the Credential Engine is working with a diverse group of stakeholders to bring more coherence to the credentialing marketplace. Doing so is central to Lumina's goal for 60 percent of Americans to hold high-quality credentials by 2025. To reach this goal, Lumina has concluded that the current rate of credentialing will only provide 24.2 million credentials. In order to reach their "Goal 2025," at least 16.4 million more Americans will need to earn high-quality postsecondary credentials.

While degrees are a mainstay in Lumina's strategic plan, it also highlights certificates and certifications. *Certificates* are typically issued by continuing and professional

education programs. They typically require less coursework than an associate's degree, but lead to gainful employment in the certified field, while paving the way for further education and career advancement. *Certifications* are typically issued by an industry to the individual based on competency and skills. In its **2017–2020 Strategic Plan** [⧉], Lumina estimates that 3.3 million Americans between 25 and 64 now hold a job-related certification as their highest postsecondary credential. In this plan, Lumina notes that while "current data systems do allow us to follow certificate and certification holders," many current certifications "do not yet offer clear pathways to degrees," and the people who hold them "remain vulnerable to the next economic downturn or disruption."

Continuing and professional education certificate programs are usually housed in community colleges. However, this sector of higher education is undergoing massive transformation via online learning, the globalization of education and employment, accreditation-related closures, MOOCs, boot camps, etc.[3] This is disrupting the traditional relationships between educators and employers in particular regions and sectors. The demise of these informal "learning recognition networks" is simultaneously undermining educators' responsiveness, students' confidence, and employers' trust. Fortunately, the pending introduction of endorsements and other features in Open Badges and increased use of Open Badges by certificate and certification programs has the potential to reverse these worrisome trends, while also making it easier to track progress towards these important national goals.

Endorsement in the New Open Badge 2.0 Specification

In 2014 the **Endorsement Working Group** [⧉] at the Badge Alliance set out to extend the Open Badge Specification to allow badges to be endorsed more explicitly. As the working group states on its home page:

> *Endorsement is a game changer for how badges are used, understood, and trusted, because it allows third-party organizations to publicly indicate which*

badges are aligned with their values — those that are the most meaningful and useful to them. It adds a new metadata component to the Open Badges standard and defines the structure for rich, well-defined endorsement information and criteria such as alignment with standards, uses for the badge in the context of the endorsing organization, description of evidence of learning and assessment techniques the organization values, etc.

Deborah Everhart, a central member of the Endorsement Working Group, was the lead author of a definitive chapter about endorsement in a recent **edited volume about digital badges** ⬀4 and helped lead the creation of the framework paper "**Badge Endorsement: Getting Started** ⬀" drafted by the working group in 2014–15. Both the chapter and the paper feature scenarios about badge endorsement that the group was working toward. The chapter also pointed out how openness will lead to something quite different than existing accreditation or endorsement schemes:

> *The intentionally open structure of badge endorsement provides opportunities for a variety of different types of endorsers, including community organizations, employers, standards bodies, and groups that are re-envisioning how the value of learning is defined.*[5]

The Open Badges 2.0 Specification supports such third-party endorsements of badges. In other words, the endorsement extensions that the working group originally conceptualized have been incorporated in the newest iteration of the core specification itself. This allows (and encourages) all platforms that issue or display Open Badges to support three types of explicit endorsement:

- One or more third parties can endorse a specific badge before it is issued (the so-called *BadgeClass*).

- One or more third parties can endorse earned badges after they are issued to the earner (the so-called *Assertions* of each BadgeClass).

- One or more third parties can endorse an issuer profile so that the endorsement passes through to all of their badges (that is, their BadgeClasses and therefore the Assertions that follow).

Now we want to use the real example of HIPAA training and credentialing described above to explore how Endorsement 2.0 might look after badge platforms embrace these new specifications. We start by imagining that the Electronic Frontier Foundation (EFF) recognizes that the e-credentialing mess around HIPAA is a serious threat to

digital privacy. This is not a stretch; the **EFF's medical privacy project**⌐ examines emerging issues in medical privacy, looking at how lagging medical privacy laws and swiftly advancing technological innovation leave patients vulnerable to having its medical data exposed, abused, and misconstrued. The EFF clearly has a *lot* of opinions about HIPAA and how it is enacted in practice. Offering endorsements to HIPAA certifications might be an easy way for the EFF to have a far-reaching impact on improving privacy protections for digital medical records.

Endorsement 2.0 for a HIPAA BadgeClass

If we start with LACCD's HIPAA badges as described, we can assume that Portfolium and Credly (the commercial platform that hosts Portfolium's badges) will eventually extend their platforms to embrace the 2.0 Open Badges Specifications, including endorsements. Once this happens, LACCD could ask the EFF to endorse its HIPAA badges. If the EFF endorses the "BadgeClass", that endorsement could be packaged with all of the "Assertions" of that badge. This would mean that Credly and other badges systems that are compliant with the 2.0 specifications could present a logo and a statement of endorsement from the EFF. The endorsement would be automatically verifiable (to prevent scammers from faking it) using the same mechanisms that make Open Badges Assertions verifiable.

Officials from the EFF would presumably first examine the curriculum and assessments; they might insist that curriculum be extended to include their **Guide to Medical Privacy**↗. The endorsement statement could also include a description of the nature and extent of the scrutiny that the EFF exercised. Importantly, the endorsement might also state that the EFF was not compensated in any way for its endorsement. This would add value to the endorsement above and beyond other potential endorsers who might demand such compensation (and therefore possibly compromise its integrity). It is worth noting that the distinction between uncompensated/compensated endorser is

not currently included in the forthcoming 2.0 Open Badges Specification. This is precisely the sort of new distinction that might be added as an extension to the current specification. If such an extension is taken up by multiple badge systems, it becomes a candidate for formal incorporation in a subsequent revision of the specification.

Endorsement 2.0 for a HIPAA Badge Issuer

Now let us turn to the HIPAATraining.net certifications described earlier. CEO Mehta clearly has a challenge in distinguishing his company's (seemingly thorough and relatively expensive) HIPAA courses and certifications from alternative providers. If he were to replace his current certificates with Open Badges, Endorsement 2.0 features would allow him to seek external endorsement of *all* of his firm's badges. He presumably has the option of going with a more conventional professional and continuing education accreditor such as **ACCET** ⬀and **IACET** ⬀ or a more specialized medical education accreditor such as **AACME** ⬀.

Imagine that Mehta approaches the EFF about endorsing all of his company's badges. The EFF might conclude that such a comprehensive (and continuing review) exceeds its scope and offer to do it for a fee. The EFF might further decide to disclose this information in its endorsement, in the interest of transparency. This is just one example of the many ways that "open recognition" afforded by Endorsement 2.0 could transform e-credentialing. The emergence of such practices might compel other accreditors to do the same. The transparency associated with "open recognition" more generally might allow such practices to emerge and flourish in productive ways, while avoiding the breakdowns that have recently **disrupted the accreditation industry** ⬀.

Endorsement 2.0 for a HIPAA Badge Assertion

Our final HIPAA badge scenario illustrates how (1) badge issuers can insert evidence and links to more evidence to support the claims made by a BadgeClass when it is issued, (2) this evidence can be unique for each assertion of the BadgeClass when it is issued, and (3) Endorsement 2.0 will allow one or more third parties to endorse specific Assertions of a BadgeClass. Together, these features will permit previously unimaginable models of endorsement for e-credentials. Consider for example that many states (particularly California) have stricter medical information privacy laws than those stipulated in the federal HIPAA legislation. Having different HIPAA badges for each state might seem overwhelming and confusing; likewise, having different HIPAA curricula for each state could be a lot to manage in classroom settings.

With Endorsement 2.0, it should be possible for LACCD to let students include evidence of their state-specific HIPAA competencies in an e-portfolio to which the badge evidence link points. After the badge is issued, an LACCD instructor could easily access and examine that evidence and add a state-specific endorsement. Conversely, HIPAATraining.net might choose to have multiple modules and quizzes for individual states rather than having a different badge for each state; its system might automatically add additional endorsements to the same badge for each module the student completes.

Because Open Badges put all of this information in a standardized Linked Data format, both machines *and* humans can easily read and interpret it. The obvious analog is the way that varied multi-point endorsements practices gradually emerged in e-commerce. While they took two decades to emerge, "Value Recognition Networks" are now taken for granted by most e-commerce stakeholders. In a similar way, the new endorsement standards will allow varied multi-point endorsement practices to gradually emerge in e-credentialing. Given the lessons learned from e-commerce and more recent advances in web technology (particularly Linked Data), it seems certain that many stakeholders will soon take digital "Learning Recognition Networks" for granted in just a few years. And the widespread use of Linked Data will make it much easier to search for and quantify the information about education, competencies, endorsements, and employment that make up a network.

The Importance of Open Recognition

We conclude by reiterating the importance of *open* recognition of learning more generally for the future of e-credentialing. The **Bologna Open Recognition Declaration** issued at the **ePIC Conference** in Bologna, Italy, on October 27, 2016, stated:

> *Open Badges, the open standard for the recognition of learning achievements, has proved the power of a simple, affordable, resilient and trustworthy technology to create an open recognition ecosystem working across countries, educational sectors, work, social environments and technologies. Open Badges have demonstrated that we have the means and the opportunity to put an end to the disparities of the recognition landscape. Connecting and informing competency frameworks, they become the building blocks of an open architecture for the recognition of lifelong and life-wide learning achievements. They create the conditions for individuals to*

be in control of their own recognition, to establish their identity and agency, whether formally (within institutions) or informally (across communities).

Serge Ravet ⧉, **Don Presant** ⧉, and many others around the world are working to advance the cause of open recognition of learning. As with e-commerce, it will take years for key trust features to be developed and perhaps a decade for the larger trust networks to emerge. It is worth noting that the existing analog credentialing systems emerged alongside traditional models of education and training over at least a century. While it will take some time for the newer digital e-credentialing systems and networks to become established, it appears quite certain that they will.

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Notes

1. Carla Casilli and Daniel Hickey, "**Transcending conventional credentialing and assessment paradigms with information-rich digital badges** ⧉," *The Information Society*, Vol. 32, No. 2 (2016): 117–129.

2. Daniel Hickey, Competencies in Context #1: New Developments at Portfolium. Re-Mediating Assessment [Blog], November 14, 2016

3. Daniel Hickey, "**Competencies in Context #2: LRNs for Micro-Masters and eCertificates** ⧉," Re-Mediating Assessment [Blog], November 21, 2016.

4. Deborah Everhart, Anne Derryberry, Erin Knight, and Sunny Lee, "The Role of Endorsement in Open Badges Ecosystems," in *Foundation of Digital Badges and Microcredentials: Demonstrating and Recognizing Knowledge and*

Competencies, Dirk Ifenthaler, Nicole Bellin-Mularski, and Dana-Kristin Mah, eds. (Springer, 2016), 221–235.

5. Ibid., 232.

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