Blockcerts

Blockcerts is a global, open standard for creating, issuing, viewing, and verifying any type of credential using any blockchain as a secure anchor of trust. These digital records are registered on a blockchain, cryptographically signed, tamper proof, and shareable.

The main goals of Blockcerts are as follows:

1. **Give issuers and recipients ownership of their official records.**
   Blockcerts are cryptographically signed by both parties and can be presented anywhere to verify credential provenance and ownership. Ownership of and access to Blockcerts is lifelong and does not depend on any software vendor or issuing institution.

2. **Give issuers and recipients autonomy over how they use their records.**
   Storing, viewing, sharing, and verifying Blockcerts is free by design and default. Individuals can share their records with anyone they choose and have them verified instantly.

3. **Give relying third parties the ability to verify any record instantly and for free.**
   Relying parties can easily verify any Blockcert through widely available technology: a web browser or a mobile phone. Verification is instant and free, and independent of any software vendor or issuing institution.

4. **Provide cutting-edge digital document security to enable the global trust economy.**
   Blockcerts are cryptographically signed by both issuers and recipients, thus enabling third parties to verify their provenance and ownership. They are also tamper evident, with any tampering immediately detected by the open source Verifier. This facilitates the global mobility of students, workers, and others by removing bottlenecks to the verification of identity and achievements.

The above characteristics realize the aims of “Self-Sovereign Identity” (SSI), a principle that individuals should have ownership and autonomy over their personal data, with the ability to determine when and how they self-disclose. A key element of self-sovereign identity is vendor independence, meaning that institutions and individuals have the option to change vendors over time without losing access to their data or key functionality. This is why Blockcerts are issued in a standard digital format (JSON), are blockchain agnostic (can be issued to any chain), and use decentralized verification. Blockcerts is also committed to the ongoing availability of credentials, without single points of failure.

Learning Machine

The initial design and development of Blockcerts was led by MIT's Media Lab and Learning Machine. For ongoing development, the open-source project actively encourages other collaborators to get involved. The open standard is free for any government, vendor, or institution to use to build their own applications for issuing and verifying records using a blockchain. Dozens around the world are currently building upon the open standard.

In order for a new technology to gain adoption, it must be made accessible through easy-to-use and widely available software. This is why Learning Machine has built a Credentialing System to enable governments, corporations, and educational institutions to issue Blockcerts at scale. Institutions license issuing accounts which allow them to design certificates, import recipient data, and issue batches of credentials to thousands of recipients. At the Enterprise level, the System becomes a tool for policymaking and curriculum development, as large institutions can centralize their credentialing operation across multiple organizations and derive analytics about their workforce or student body over time.

Learning Machine works with customers around the world. Below are a few examples of projects at national scale:

Government of Malta
The Ministry for Education and Employment began the world's first national blockchain credentialing initiative in the Fall of 2017. The Blockcerts project is now being rolled out to all Maltese educational institutions, public and private.

Government of the Bahamas
The Ministry of Labor began using Blockcerts to credential individuals who pass through its new National Apprenticeship Programme during the Summer of 2018. Other Ministries are also trialing the system for Business Licenses, National Insurance Cards, and other vital records.

Caribbean Examinations Council (CXC)
The CXC was seeking a digital documents solution that would provide the security, flexibility, and longevity needed to go entirely paperless. They begin Blockcerts rollout across 25 certifying countries in the Fall of 2018.

Learning Machine also works with Universities (for example, MIT, Central New Mexico Community College, Southern New Hampshire University, University of Melbourne) and Professional Membership organizations (for example, the Federation of State Medical Boards) to advance the goal of lifelong, issuer and recipient-owned, independently verifiable credentials. Learning Machine's commitment to open standards means that we work closely with international standards bodies, like the W3C Credentials Community Group and IMS Global, on developing and maintaining international standards for claims verification and interoperability.