Digital Credentials Recognition

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Executive Summary

Objectives

This study, commissioned by the EU SHARE Programme, provides an overview of digital credentials recognition, including its implementation globally and within the ASEAN region. It aims to share recommendations on the deployment of systems for digital documents and enhancing their recognition throughout the region.

Methodology

This study is based on a literature review, testing of different digital credential recognition systems, as well as workshops and interviews with relevant stakeholders in ASEAN and Europe during June-September 2021.

About the Study

The focus of this study is on credentials for student mobility. This includes credentials for credit transfer between institutions within the context of a single programme, for mobility between institutions after completion of a programme, as well as for mobility between academia and the labour market after graduation. Digital credentials are defined as digital documents which make claims about person, containing data machine-processable data. The digital recognition of such credentials implies the ability of a verifier to receive a digital document, check its authenticity, process it according to defined formats and schemas, and take an educational recognition decision on that basis.

Digital credentials are reliant on data standards to convey information. The European Learning Model (ELM) is an open-source standard used to describe information about learning opportunities, qualifications, credentials, and accreditation; and is promulgated by the European Commission throughout the EU Education Area. It used to power educational services in the Europass platform, as well as to exchange this data between countries. The ELMO format is produced by a group of countries and is intended specifically for Higher Education data interchange between countries, in particular for sharing transcripts of records. The Comprehensive Learner Record is an analogous standard to the ELM, with a more US focus. Open Badges are an open-source standard that is used to created digital documents 'baked' into images – these are mainly used as records of achievement in non-formal education use-cases.

Document transfer in this area is done via three different categories of software. Student Mobility software allows for institutions and students to exchange mobility learning agreements, and then at the end of a mobility, to exchange a transcript of records between the institutions. The most common initiative for this is Erasmus without Paper (currently being rebranded into the European Student Card Initiative), which allows for this interchange between over 3,000 universities in Europe. Digital Credentialing software allows for the award of credentials to students. Students store these credentials in their own wallets and may share them for the purposes of recognition with their own institution, other educational organisations, or employers.

There are currently multiple public and private providers of digital credentials globally. Of note are the European and MIT-led initiatives, each of which are developing open ecosystems of standards and software around digital credentials. Within ASEAN+3, significant initiatives have been noted in Japan via the RECSIE system; in Indonesia via the implementation of blockchain credentials into ICE-network; and in Singapore via the OpenCerts system. OpenCerts in particular is considered a global reference project in using blockchain technology to secure credentials. Transfer of credentials between institutions is regulated by a third type of software, which creates interchange networks between organisations. An example of this is the EMREX system (also in Europe) that facilitates exchange of credentials between different universities' student information systems.

Findings

Our research with representatives of SHARE member institutions (from throughout the ASEAN region) indicates that the use of digital documents to regulate mobility and/or recognition is still not common, and where it exists, is limited to paper-analogues such as PDF, rather than involving the exchange of true computer-readable documents. That said, policies increasingly support digital credentialling with governments in Indonesia, Philippines, Vietnam, and Singapore are already supporting this (albeit at very different stages of development). In Malaysia and Thailand, pockets of expertise exist in specific - usually private – institutions; while Cambodia, Myanmar and Laos have yet to develop anything in the area.

Taken as a whole, the region has yet to overcome challenges to adoption of digital credential recognition. These are related to: technological capacities of institutions in terms

of technical and human resources; lack of infrastructure and knowledge about e-signature; institutional cultures built around paper credentials; lack of government support for digitisation; and a lack of common standards for digital credential recognition across the region. Despite these, the development of a digital credential system is still seen as an important priority; even more so during the COVID-19 pandemic.

To guide further development of systems, the study identifies a set of implementation success factors based on the case studies mentioned above – with success being defined as the ability to reach critical mass, whereby the user base is sufficient for the network to be self-sustaining. Successful digital mobility and digital credentialling systems are governed by public authorities or multi-stakeholder groups and are based around open standards and software. The systems are not built as separate software packages but are ecosystems of software, with different providers each connecting different applications to the network. The systems are typically backed by extensive documentation, developed over several years of testing and piloting, and are continually reviewed and updated based on institution and user feedback. Finally, they are often integrated into wider projects in the digital labour market, rather than focusing solely on a narrow educational use case.

The study finds that digital credential recognition in the region can be significantly boosted by leveraging on existing global standards, software, and networks. In the short-term, an initiative led by a university consortium could bring significant benefits around student mobility. In time, this could be expanded to more use cases and be applied to more institutions.

Conclusions

There is no need to develop ASEAN-specific data-standards and software, since the mobility and credentialling processes are similar enough to those used in Europe, and are aligned closely enough to be able to adapt these to local use. We recommend that by using the European Learning Model as a basis, such a consortium would start with digitising credit transfer between institutions for mobility, and then move on to award of credentials to students, transfer of programme credentials between institutions, and finally transfer of credentials to third parties such as employers.

Such a system should prioritise student data portability, and user-ownership of their own data, while using decentralised paradigms of technology and governance to mitigate the need of creating a centralised management authority. Critical to supporting such a development would be the creation of an ASEAN Centre of Excellence in Digital Credential Recognition. Such a centre would monitor global developments, make recommendations on standards and software for use in the region, and localise these. It would assist in capacity building of educational organisations and training of key staff. Finally, it would manage the backbone of the network connecting institutions together and manage its growth.

Through such an approach, institutions in the ASEAN region have an opportunity to make a generational change in the management of credential recognition in a comparatively short period of time, bringing efficiency gains to institutions and improving credential-portability and recognition for students.

About SHARE Programme

The Support to Higher Education in the ASEAN Region (SHARE) Programme is the European Union's flagship higher education programme with ASEAN. Since 2015, SHARE has worked alongside the ASEAN Secretariat and regional partners to strengthen regional cooperation, enhance the quality, regional competitiveness and internationalisation of ASEAN Higher Education institutions and students.

SHARE provides technical assistance to the ASEAN Secretariat and regional stakeholders in their implementation of the ASEAN Work Plan on Education 2021-2025, which was adopted by the ASEAN Education Ministers Meeting (ASED) on May 31st, 2021. As a key sector for the ASEAN region, Higher Education is incorporated in the Work Plan through 'Outcome 3: Enhanced regional capacity in higher education as part of lifelong learning provision, including the harmonisation of ASEAN higher education.'

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