Session Expectations

- What examples exist to demonstrate the emergence of Credentials and Digital Information Across the Globe

- **ARUCC National Network** – What is it? What value does it bring? Who's benefitting?

- **Europass Digital Credentials** Initiative – What is it? What value does it bring? Who's benefitting?

- **Micro-credentials** – What are they? What value do they bring? Who benefits?

- **Interoperability** – How do we achieve this? Can mapping/cross-walking occur between PESC and EDCI? What is the value? Who benefits?

Making the pie BIGGER

Simone Ravaioli

DIGIT△RY

Who Benefits from all this Effort? Keisha & others like her.

Transfer between Canadian Schools

Keisha moved from a college program at Bow Valley College in Alberta to a university program at Ryerson University in Ontario.

Credentials: **Business Administration Diploma**, transcript

Exchange with European University

Keisha, in her third year, participated in a study abroad program in Europe and returned to Ryerson after a term away.

Credentials: Letter of Permission from Ryerson, results from European university

Graduate

Keisha graduates from Ryerson University with an Bachelor in Business which is reflected in her MyCreds.ca wallet. She subsequently receives a badge for completing a specialized opportunity with IBM.

Credentials: **Bachelor of Business**

Transcript

IBM Badge

Master's level studies

Keisha applies and gains entrance to a Master's level program in Europe

Credentials: **Bachelor of Business**

Business Administration Diploma

Transcripts

Graduate

Keisha graduates from her European Master's degree which is reflected in her Europass wallet.

Credential: **Master's Level Degree**

Employment

Keisha returns to Canada and is offered a job with IBM in Canada

Credentials: Verification of graduation from Ryerson, Bow Valley, and from her European institution; completed IBM micro-credential

Keisha is not alone in her experience. Anywhere from 6 to 20% of Canadian post-secondary students travel between provinces. 50,000 go on study abroad, and many more come to Canada. And hundreds of thousands require their status and credentials to be verified.

**Keisha's Educational Journey and Credentials Earned and Shared
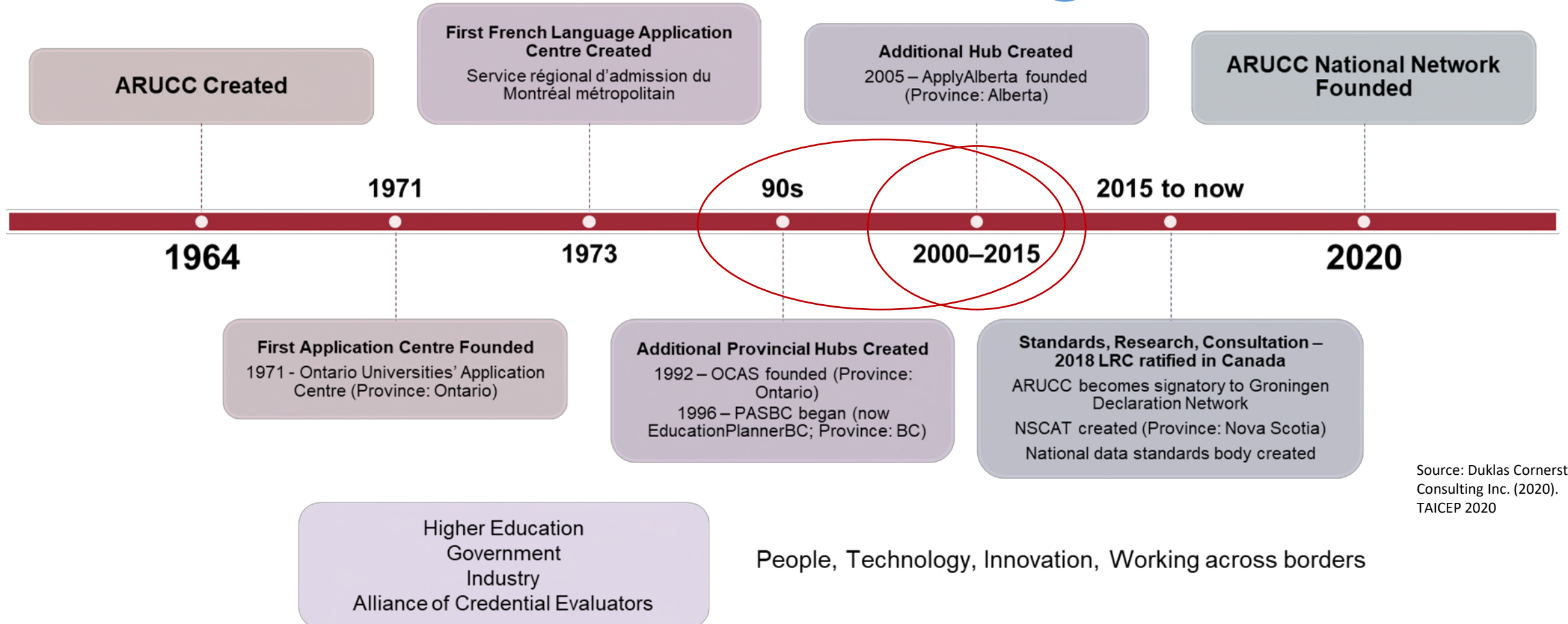A Canadian Story**

Emergence of Credentials & Digital Information

International Credential Activities
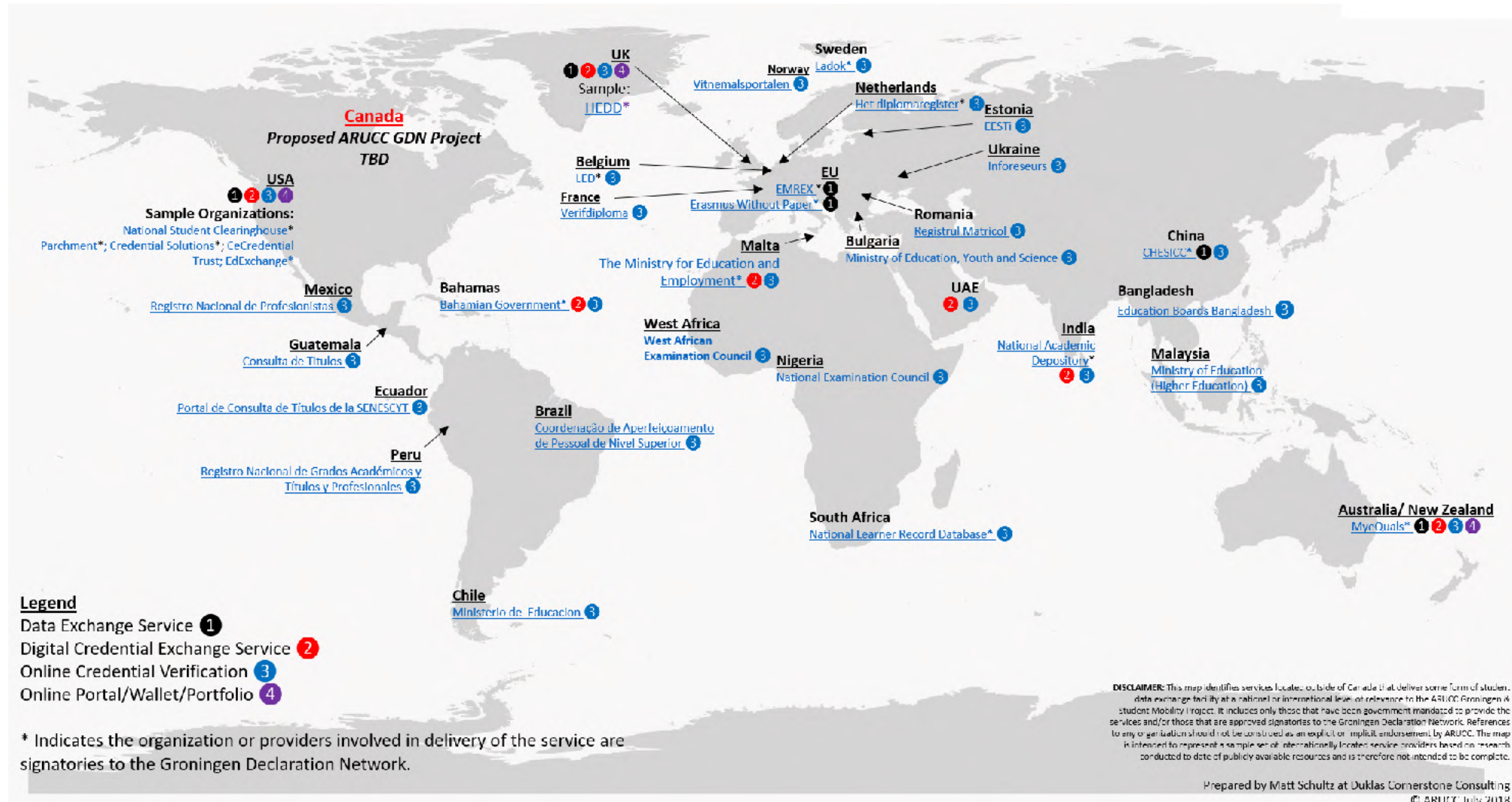
Source: Duklas Cornerstone Consulting. (2015). Publisher: ARUCC

J

The Emergence of Digital Exchange in Canada – Micro-credentials Scaffolding in HEI -

First French Language Application Centre Created
Service régional d'admission du Montréal métropolitain

ARUCC Created

Additional Hub Created
2005 – ApplyAlberta founded (Province: Alberta)

ARUCC National Network Founded

1971

90s

2015 to now

1964

1973

2000–2015

2020

First Application Centre Founded
1971 - Ontario Universities' Application Centre (Province: Ontario)

Additional Provincial Hubs Created
1992 – OCAS founded (Province: Ontario)
1996 – PASBC began (now EducationPlannerBC; Province: BC)

Standards, Research, Consultation –
2018 LRC ratified in Canada
ARUCC becomes signatory to Groningen Declaration Network
NSCAT created (Province: Nova Scotia)
National data standards body created

Higher Education
Government
Industry
Alliance of Credential Evaluators

People, Technology, Innovation, Working across borders

J

ARUCC National Network

MyCreds.ca ● MesCertif.ca
CANADA

Launched in Fall 2020

A mobile **global document and credential wallet** for Canada's learners and graduates

A Pan-Canadian **exchange network** for official post-secondary student document, credential, and data sharing.

Comprehensive and secure curation of post-secondary micro-credentials, badges, diplomas, degrees, certificates, and documents.

Support for learners
Modernized infrastructure
Accelerated innovation
Quality assurance

J

Made for learners by Canada's post-secondary institutions

J

Why the Network?

Reasons

- Document fraud
- Credential confusion*
- Service challenges (e.g., COVID)
- Labour mobility
- Aging infrastructure
- Inefficient assessment practices**
- Inflexible systems

* Receivers (employers, govt, other PSIs, etc.) are not always understanding the difference between the different types of credentials from the PSIs. Micro-credentials will grow, leading to greater confusion.

** Relying on paper-based documents and mail is resulting in delays in processing and impeding automation.

Benefits

- Time savings, control, and 24/7 access for learners – domestic and international
- Greater portability digitized credentials for learners – contactless support
- Quality Assurance
- Credential and Document clarity
- Improved access to PSIs and jobs
- Shared, improved infrastructure
- Scalable efficiencies
- Agile implementation, technology, and data transformation capacities

J

Strategic Benefits

- Ensuring seamless access for learners across the province to their documents and earned credentials through a comprehensive, innovative credential wallet

- Increasing support for all students, regardless of location – both domestically and internationally

- Promoting transparency for students

- Saving students time and money

- Supporting government fiscal responsibility through shared service provision and collaboration

- Supporting labour mobility

- Supporting innovative and agile responses to COVID 19 challenges

J

Accomplishments to Date

Summer 2020

- Two ON pilot schools launched
- A+ rating - security testing of core by experts

Ryerson & Seneca (examples)

- 11,000 digitized parchments; 7,300 digitized transcripts provided to learners through the credential wallet

Fall 2020 Launched Fully Bilingual Network

- Learner Credential Wallet
- Website
- Platform core
- Organizational Environments
- Close of 60 schools in various onboarding stages

J

Europass
Digital Credentials
Infrastructure (EDCI)

The New Europass

Interoperability mechanism
Enables the exchange of information on skills and qualifications amongst different actors.

E-Portfolio
Support individuals to document and describe their skills, qualifications and experience and to manage their career from a lifelong learning perspective.

Information Provision
Provide information or links to available information on skills and qualification that helps users to better manage their lifelong career.

European Digital Credentials Infrastructure (EDCI)
Encompasses technical specifications to implement the framework. It comprise of core building blocks to help operationalise the framework: e-IDAS, Standards, Services and Software

Europass Digital Credential – Central To EU's Skills Agenda

A Europass Digital Credential

A Europass Digital Credential Contains Information About
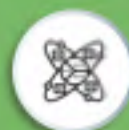
Metadata (data about the credential)

Issuer
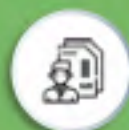
Subject (claims about person)

e-Seal
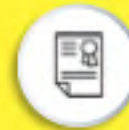
Describes Claims Related to

Activities

Achievements

Entitlements

Attestations

Learning Outcomes

Assessments

150 hours of coursework
100 hours of apprenticeship

DE Qualification as a Painter

Entitlement to work
as a painter

Recognition of
qualification in FI

LO of skill of painting

Final Examination
Grade B

COMPONENTS

Components of the Framework

	Standards	Services	Software	
eIDAS				**Integrate**
Europass				**Develop**
W3C VC				**Integrate**

Framework for digitally-signed credentials
the EDCI in more detail
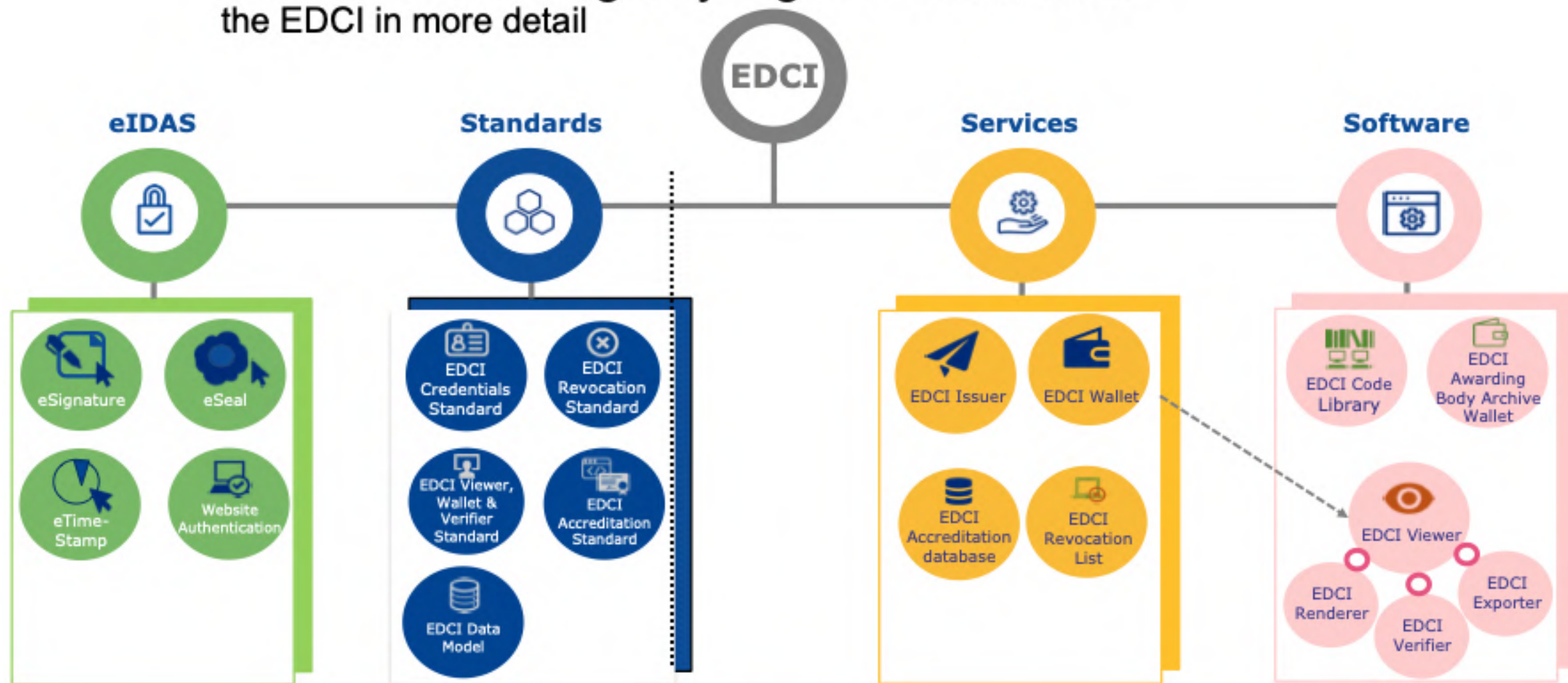
European Commission

Austria	Germany	Portugal
Croatia	Greece	Romania
Cyprus	Italy	Slovakia
Czech republic	Luxembourg	Slovenia
Estonia	Malta	Spain
France	Norway	Netherlands

18 Member States

- Support 'Export' from other credential systems, along with native Europass Credentials

- Allow a role for intermediaries in sealing credentials

- Clarify GDPR Implications

- Provide Support for implementing the data model

The EDCI Issuer allows anyone with a **digital seal** to issue credentials to students online.

Prepare

1 To issue credentials, you need to obtain a qualified electronic seal. Our test tool will ensure everything is set up properly. Then, follow our tutorial to understand how to prepare your data.

Test your e-Seal

How to prepare your data

Build

2 The Online Credential Builder allows you to enter your data entirely via the browser. You may also prepare larger datasets in Excel (for Windows) using the supplied template. Alternatively, you can export a package from your student information system as XML.
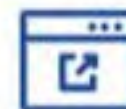
Online Credential Builder

Download your XL S template

Upload

3 If you have your credential data prepared, upload the file and move on to the next step of reviewing and digitally sealing your credentials.

Upload XL S spreadsheet

Upload XML

europass
European Union

English EN

europass   Lorem ipsum   Lorem ipsum   Lorem ipsum

Login to Europass

View > View Credential

Diploma in Sociology

Date: 12/05/2019 | Type: Diploma

👁 Credential Summary   ⬇ Export   ⬆ Upload another credential   ＜ Share   🖨 Print   English ▼

Issuing organisation		Authenticity and Verification Check
Credential Owner		✓ **Format** — This credential is technically valid.
Achievements	UNIVERSITY OF GOZO	✓ **Seal** — The credential is Sealed. This credential has not been tampered with since it was issued by by the University of Gozo on 20/02/2019
Activities	**DIPLOMA IN SOCIOLOGY**	✓ **Owner** — This credential was issued to the wallet owner.
Entitlements	The University of Gozo certifies that **Johanna Marie Smith** has graduated **magna cum Laude** course in **SOCIOLOGY AT EQF LEVEL 6**	○ **Revocation** — Verification step skipped.
Sub-credentials	Paul Smith November 12, 2019	✓ **Accreditation** — This credential has been accredited by the National Quality Assurance Agency (Italy).
Other Data	This certificate is verified	✓ **Validity** — The credential is still valid.

🏅 Verified

< Previous

- EDCs describe:

- Details of the issuing **organisation**

- Details of the **credential owner**

- **Achievements** (including grades and references to learning outcomes, activities and entitlements)

- **Activities** (e.g. 150 hours of coursework or 100 hours of apprenticeship)

- **Entitlements** (Entitlement to work as an attorney)

Thank You

EXECUTIVE SUMMARY

A EUROPEAN APPROACH TO MICRO-CREDENTIALS

OUTPUT OF THE MICRO-CREDENTIALS
HIGHER EDUCATION CONSULTATION GROUP

December 2020

7. Portability: issuing, storage and sharing of micro-credentials

Micro-credentials may currently be issued in various formats (on paper or in a digital form, stored locally or using a cloud solution). Looking ahead, a digital format for micro-credentials is essential to allow for easy storage, sharing and their portability. This would be beneficial for the learners, but also for educational institutions and the world of work, and would facilitate recognition. However, this does not imply that the provision of courses leading to micro-credentials will have to be based on digital delivery.

Learners should own their own credential data, rather than the issuing institution. In line with the data protection regulations, it is up to the learner to decide with whom they wish to share their data.

The infrastructure for storing data should be based on **open standards and data models to allow for interoperability and the seamless exchange of data**.

Metadata should be available in an **open, portable format**. European standards for sharing metadata should include only the basics, to allow for flexibility at national and institutional level.

The **Europass Digital Credentials Infrastructure** (EDCI) may provide a **suitable infrastructure that can be applied to micro-credentials**. Currently, only qualifications in national qualifications frameworks can have a Europass Digitally Signed Credential, so further work is needed in order to **use this infrastructure for micro-credentials, which could be promoted through cross-country pilots**.

The group saw some potential benefits in **blockchain infrastructure**, while some participants expressed concern about a perceived lack of maturity in using it for educational purposes.

European efforts concerning infrastructures in support of portability, exchange and sharing of data and recognition of micro-credentials **should be further discussed by policymakers in Member States and higher education institutions**, focusing on the strategic aspects and considering both investment needs and legislative implications.

8. Platform solutions for offering micro-credentials, and their promotion

Globally, the role of digital platforms has gained traction in the provision of courses, leading to micro-credentials developed by higher education institutions. These global platforms also tend to include other forms of credentials, for example those provided by the big IT companies such as IBM and Microsoft. The *platformisation* of higher education is driven by a complex interplay between technical architectures, pressures on existing business models and revenue streams, and opportunities to create mass user activity with the ability to scale without the same level of costs as face-to face education would require. The drivers in Europe differ to some extent, as European higher education institutions are predominately public, and the study costs for individuals are not as high as, for example, in the USA. Nevertheless, European solutions for micro-credentials can only have a real impact if they respond to the developments of global university-based platforms such as Coursera and edX. It was therefore suggested by members of the group that data governance and standard setting from a technical perspective are critical to sustainability and could be supported by forming a European Standards Committee with the relevant stakeholders.

Platform-based infrastructure is an important driver for the online provision of micro-credeintials. Different scenarios were discussed and proposed with regard to platform-based infrastructures.

> Some participants would support the development of a European meta-platform. Member States, individual higher education institutions, European University Alliances or other actors could further build on applications and infrastructures.
> Others argued for a decentralised model, where universities build their own solutions, while ensuring interoperability.

The scenarios proposed also have **implications in funding models**, which span from funding through public-private partnerships to a proposal for a fully publicly funded solution.

> Whichever model and approach may be followed, further discussions are needed to clarify financial sustainability or the question of ownership in the case of a joint development of micro-credentials.

The discussions strongly highlighted the need for support services so that micro-credentials can be **an inclusive solution** for skills development, underpinning lifelong learning as a public good, based on European values.

Technical solutions could be discussed at **European level** to ensure interoperability and infrastructure development.
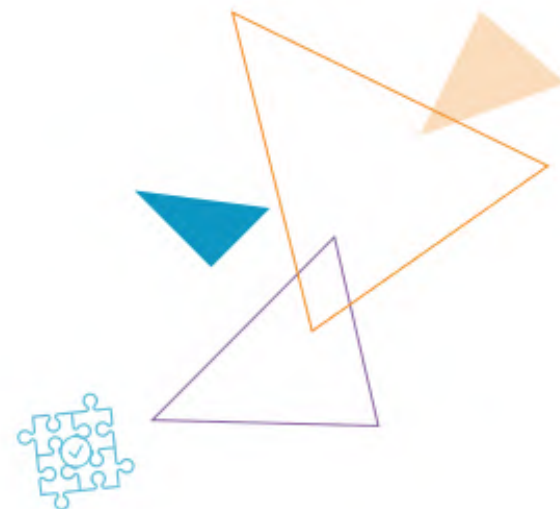
Micro-credentials are?

Most common core defining features:

- Represents what a person knows and can do at a modular level in a very specific focus area.
- Provides evidence of learning achievement verified and assessed by a trusted source.
- Represents skills and competencies gained from formal, non-formal, and/or informal learning experiences that are specific to purpose.
- Note: Definitions for 'trusted source' vary or don't exist.

Types:

- Standalone
- Horizontal
- Stackable
- Complementary
- Credit bearing, non-credit bearing, or both
- Industry, post-secondary, both

Source: Duklas Cornerstone Consulting Inc. (2020). TAICEP 2020; J. Duklas (2020). BCCAT Study

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Where do Micro-credentials fit?
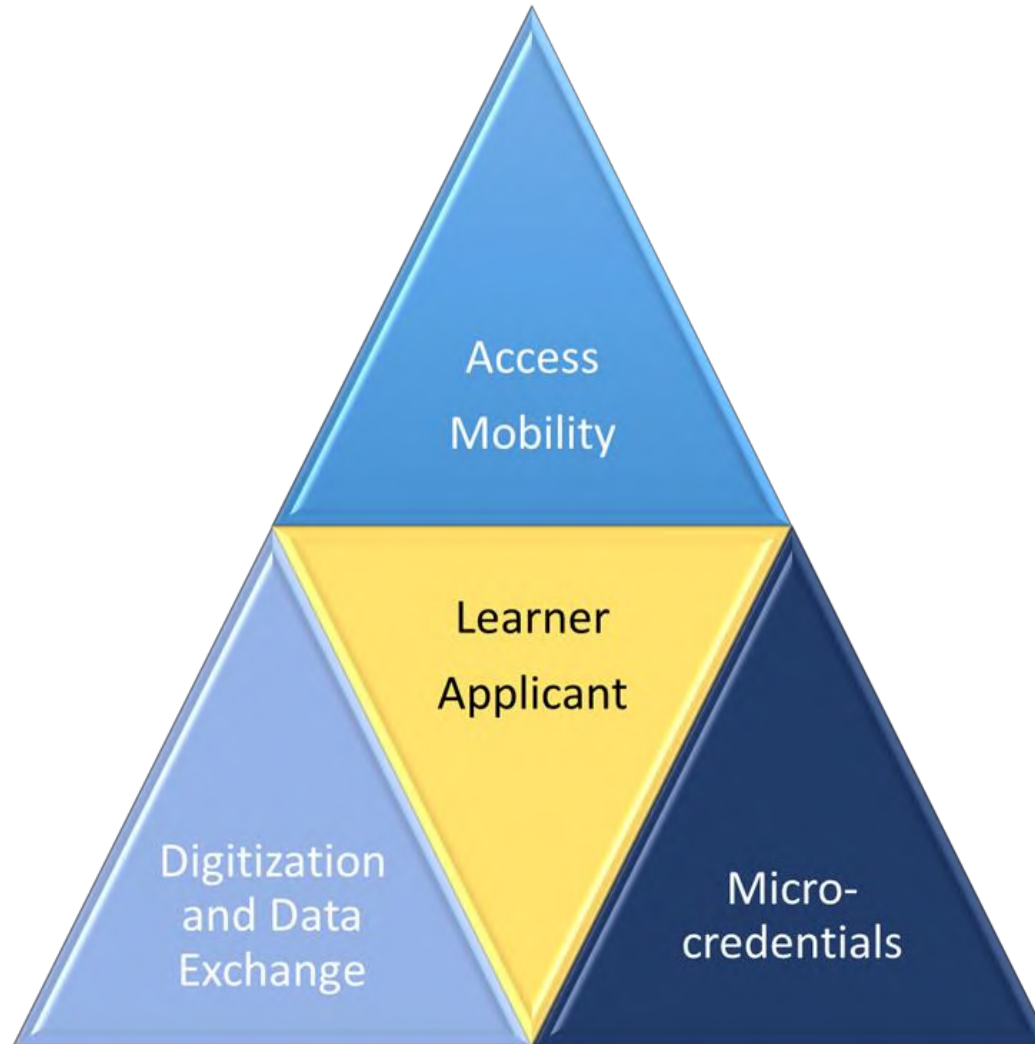
Source: Duklas,
TAICEP 2020

MyCreds.ca|MesCertif,
through the Digitary platform,
accommodates badges and any
type of credential in the wallet.

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Promising Examples in HEI

- New Zealand Qualifications Authority - quality assurance framework, credential registry
- Algonquin College - micro-credentials Framework
- State University of New York - robust definition for micro-credentials
- Thompson River University - micro-courses in support of the Open Education Resource universitas (OERu)
- Humber College/Otago Edubytes
- European Common Micro-credentials Framework
- And more...

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Interoperability
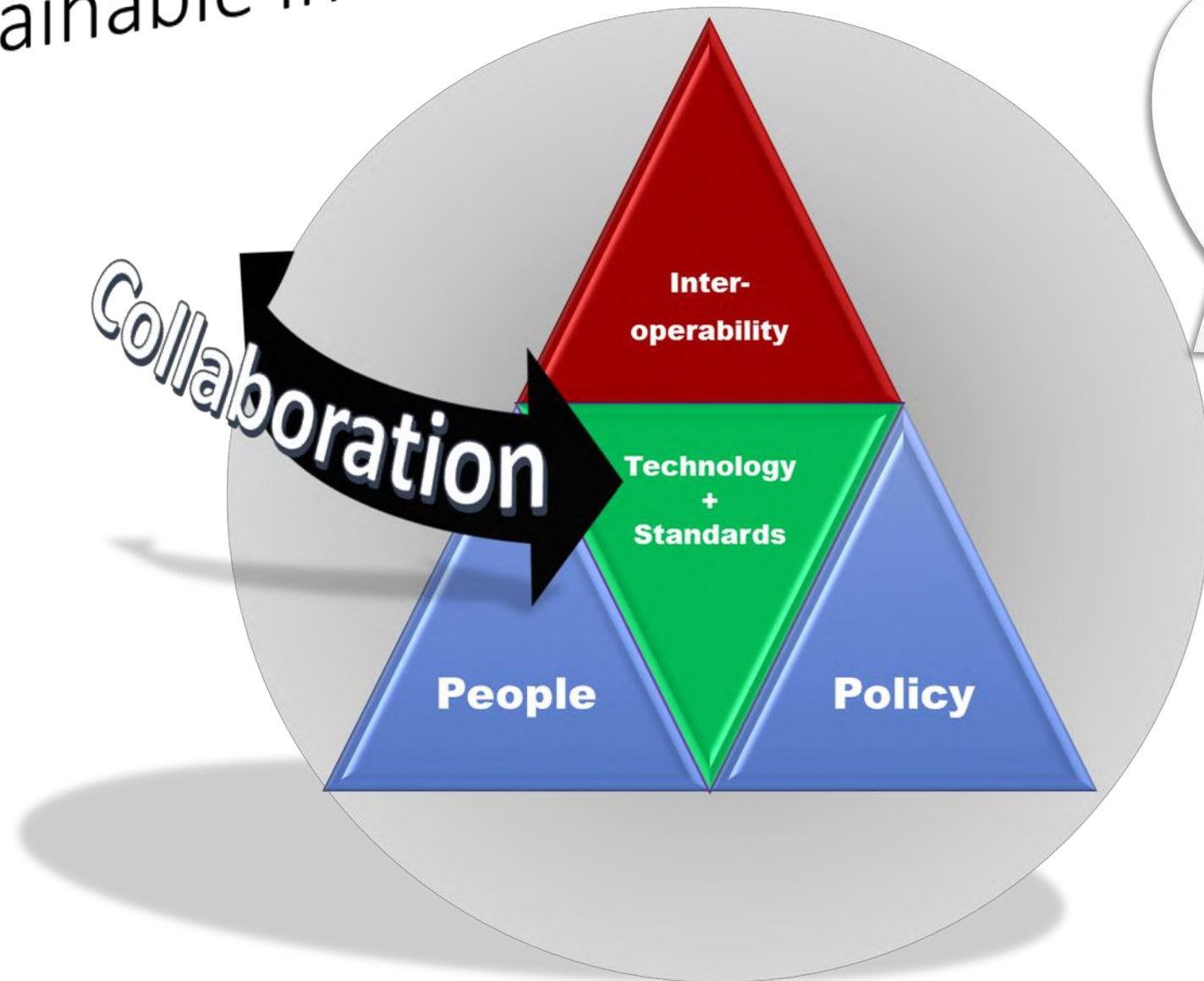
Sustainable Interoperability

- How can PESC and other organizations continue to contribute to creating sustainable interoperability?

- What do we need to do next to achieve global interoperability?

- Can mapping/cross-walking be done between PESC & EDCI?

Thank you!

- Simone Ravaioli, simone.ravaioli@digitary.net
- Joanne Duklas, joanne@duklascornerstone.ca
- Anthony Camilleri, anthony@knowledgeinnovation.eu

DATA SUMMIT & SYMPOSIUM

PESC

Canadian PESC User Group

Co-Chairs

CATHY VAN SOEST

MANAGER, TRANSCRIPT SERVICES

EducationPlannerBC

https://educationplannerbc.ca/

DOUG HOLMES

MANAGER, eTRANSCRIPTS

OUAC Ontario Universities' Application Centre

https://www.ouac.on.ca/

CONNECTING THE
NEW DIGITAL ECOSYSTEM

CANADIAN PESC USER GROUP

ABOUT CANPESC

An open, collaborative group of volunteer stakeholders that ensures PESC's mission and all PESC deliverables, including the development and release of PESC approved standards, supports and incorporates the needs and interests of Canadian students, institutions and Canadian-based stakeholders.

Glossary of Some Canadian Terms

- **ARUCC** – **Association of Registrars of the Universities and Colleges of Canada**

- **CanPESC** – **Canadian PESC User Group**

- **CUCCIO** – **Canadian University Council of Chief Information Officers**

- **HS – High School**

- **PCCAT** – **Pan-Canadian Consortium on Admissions & Transfer**

- **PSI – Post-Secondary Institution**

- **MyCreds / MesCertifs** – **ARUCC's pan-Canadian document exchange highway and credential wallet**

– CONNECTING THE –
NEW DIGITAL ECOSYSTEM

CANPESC'S HISTORY
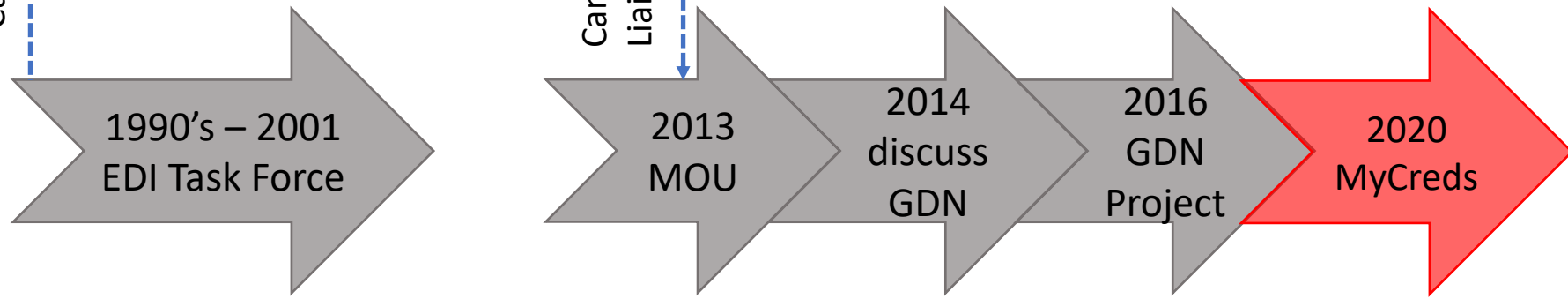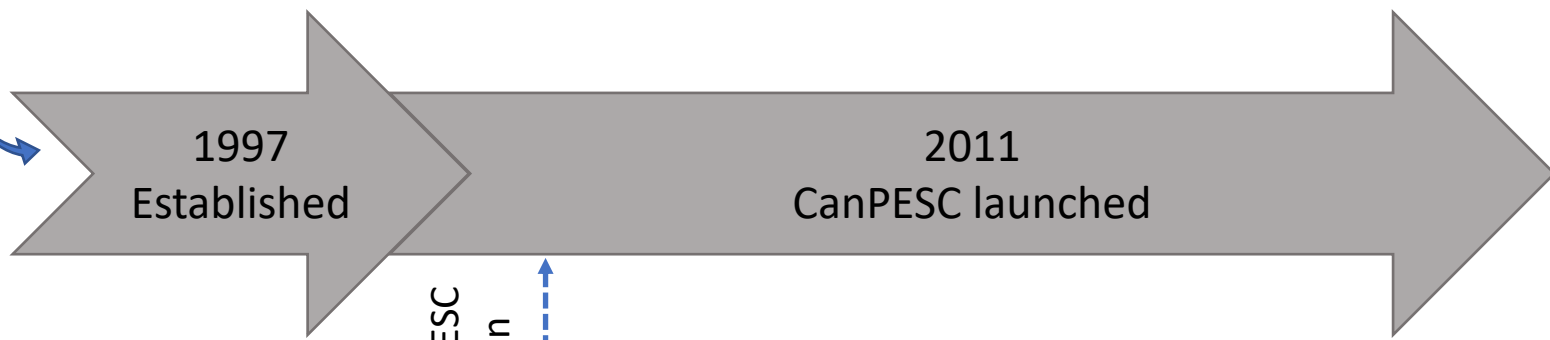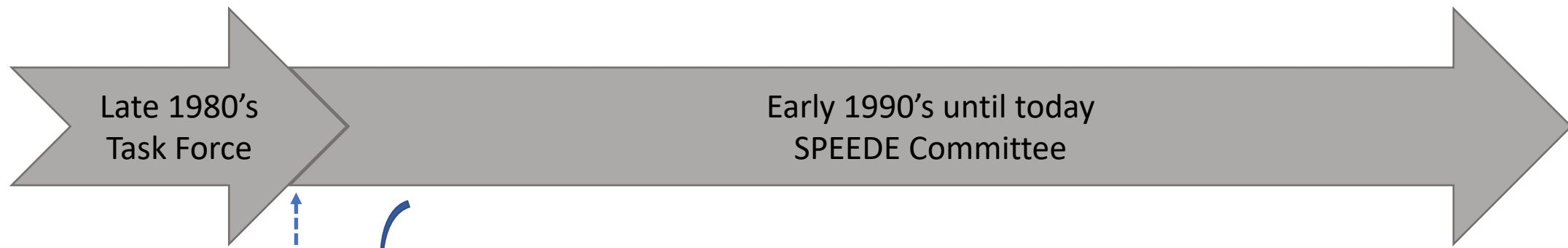
Image credit

— CONNECTING THE —
NEW DIGITAL ECOSYSTEM

WHAT HAS CanPESC BEEN UP TO?

– CONNECTING THE –
NEW DIGITAL ECOSYSTEM

Well, we've been in the CanPESC Parking Lot!

- Started at CanPESC meeting, Nov 2018, OUAC's offices in Guelph
  - Key topics identified
    - PESC College Transcript Standard - Versions (Mapping)
    - Upgrade Pathways
    - Data & Business Requirements
    - Institutional Codes
    - Presentation Formats
    - Policy

CONNECTING THE
NEW DIGITAL ECOSYSTEM

Standards of Practice Work Group

- Building awareness of, and encouraging alignment where possible, to *data exchange* standards *implementation* across Canada

    - Policy & Governance

    - Business Process

    - Data Mapping

    - Technological

- Creating "tip sheet" to share with onboarding partners for MyCreds.ca

CONNECTING THE — NEW DIGITAL ECOSYSTEM

Standards Work Group

Image credit

- Identifying data element gaps
    - High School Transcript
    - College Transcripts
- Collectively gather requests

- Plan: Bring items to the Standards Forum

CONNECTING THE
NEW DIGITAL ECOSYSTEM

Standards Version Upgrade Pathway Work Group

- Creating white paper to outline process, pitfalls, approaches around PESC XML version upgrades

- Inventory versions currently in use across Canada

- Value-add for existing implementations and first-time implementors

OUAC – Standardized Data Exchange

- EDI (v4010):
  - TS130 Transcript
  - TS131 Transcript Acknowledgement
  - TS146 Transcript Request

  - TS147 Response
  - TS997 Functional Acknowledgement
  - ISA / GSY2K envelopes

- PESC XML schemas[1]:
  - Academic Record Batch – v1.0.0 and 2.0.0
  - College Transcript – v1.3.0 and 1.4.0
  - Functional Acknowledgement – v1.0.0
    [1] plus each corresponding Core and Sector library

  - High School Transcript – v1.2.0
  - Request and Response – v1.2.0
  - Transcript Acknowledgement – v1.1.0

- "PESC-like" XML schemas:
  - OUAC Academic Record – v1.9.0
  - OUAC Academic Record Batch – v2.1.0
  - OUAC Admissions Application – v1.3.0
  - OUAC Admissions Decisions – v1.0.0
  - OUAC Admissions Record – v1.3.0

  - OUAC Core Main – v1.14.0
  - OUAC Functional Acknowledgment – v1.2.0
  - OUAC High School Transcript – v1.5.0
  - OUAC Test Score Report – v1.0.0
  - useextensions

PESC
CANADIAN USER GROUP

PESC

GEO Code

- Country and Sub-Country administrators for most of Canada
  - Have assisted with testing system functionality

- Work Group – Remaining Lists
  - Team from Humber College

- Steering Committee Co-chair (Ruth Butlin, Humber College)

- Next phase:
  - Continue propagated codes for Canadian PSIs
  - Submit Canadian High Schools, CEGEPs, private schools, …

CONNECTING THE — NEW DIGITAL ECOSYSTEM

Common Digital Layout Work Group

- Creating both a process and a transformation tool to generate common HTML and/or PDF "views" of PESC XML data:
  - High School Transcript
  - College Transcripts

- Open Source deliverables

- Value-add for transcript evaluators, assessors and other human users

Image credit

CanPESC & ARUCC

- National Network & MyCreds
  - Steering Committee Member

- ARUCC PCCAT Transcript & Transfer Guide
  - Work Group Member

- ARUCC Executive
  - Liaison

– CONNECTING THE –
NEW DIGITAL ECOSYSTEM

Thank You!

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DATA SUMMIT & SYMPOSIUM

PESC