The Learner Record Index
Building a better student experience together
What is the LRI?

The ability to **match** and identify students across **multiple organizations** when the SS# is **not** a viable, comprehensive or legal solution.
What does the LRI solve?
Student ID #29582

Jane Smith
Student ID # 29582
Student ID # 68459
Student ID # 348889
Student ID # 13679-253
Student ID # 0093764
Student ID # 48202
Feels like Déjà vu all over again?
Déjà vu and IdM

Suspects, Prospects and Applicants

• Third Party Matching
• Student Ease of Use
• Identity Proofing
Déjà vu and IdM
The Common Identity and Trust (CommIT) ID

Goals of CommIT (~2011 – 2015)  
https://spaces.at.internet2.edu/display/InCAdmissions/CommIT+Documents

• Support and Enhance Identity and Trust
• Provide matching process for electronic records for applicants and institutions
• Create a unique Student Identifier
  o do away with the last remaining vestiges of dependency on the social security number.
• Person Registry
  o Store minimum data required to support user uniqueness and password re-sets
Déjà vu and IdM
The Common Identity and Trust (CommIT) ID

Goals of CommIT (~2011 – 2015)  
https://spaces.at.internet2.edu/display/InAdmissions/CommIT+Documents

- Federated Single Sign-On Solution (SSO)
  - Single set of credentials that can be used across various services
  - Only the applicant can initiate record aggregation and release
  - No third party access to data without applicant consent

- Provide a means for Identity Proofing

- Become a sustainable shared service for IdM
Déjà vu and IdM
CommIT – Ahead of its' Time?

Factors contributing to lack of traction in HE Community
(Monday morning QB)

• CommIT had to be "Inserted" into HE Application Process
  • Introduction of the SSO from variety of organizations/institutions
• Credential Management and Administration
  • e.g., "Shared Secret" management, Password reset, etc.
  • Enabling student self-sovereignty
    • Authorization and disclosure of records/credentials
• Identity Proofing
• Value Proposition to Stakeholders (Institutions)
  • Admissions/SEM professionals may not bear cost of matching
• Lack of Scale
Déjà vu and IdM
LRI – Why might it be different?

**Learner Record Index**

- Identification NOT Authentication or Authorization
- Requires no end user intermediation
- Low Entry Bar
- Scale
- Extensibility
Data Strategy, the Education Community, and LRI

“set of choices and decisions that together, chart a high-level course of action to achieve high-level goals.” (Source: Dataversity)
The Learner Record Index
Building a better learner experience together
Data Strategy

If we are a community that wants to build “a better learner experience together”, let’s put on ‘data glasses’ and look at what that means:

• Agreement on a shared purpose
• Governance
• Determination of the data involved
• Definitions & Lineage of the data involved
• Rules regarding usage
• Definitions of Quality and Accuracy
• Monitoring, Maintenance, and Metrics
Thinking about the Data

Consistent and defined set of identifiers and attributes that are typically slow to change, yet used across multiple processes in which learners engage:

<table>
<thead>
<tr>
<th>First Name</th>
<th>Middle Name</th>
<th>Middle Initial</th>
<th>Last Name</th>
<th>Date of Birth</th>
<th>Student ID</th>
<th>Reporting Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane</td>
<td></td>
<td>J</td>
<td>Smith</td>
<td>03/20/2001</td>
<td>29582</td>
<td>Institution A</td>
</tr>
<tr>
<td>Jane</td>
<td>Julie</td>
<td></td>
<td>Jones</td>
<td></td>
<td>13679-253</td>
<td>Testing Entity</td>
</tr>
<tr>
<td>Jane</td>
<td></td>
<td></td>
<td>Smith Jones</td>
<td>03/20/2001</td>
<td>348889</td>
<td>Support Service</td>
</tr>
<tr>
<td>J</td>
<td>Julie</td>
<td></td>
<td>Jones</td>
<td></td>
<td>48202</td>
<td>Institution B</td>
</tr>
<tr>
<td>Jane</td>
<td></td>
<td>J</td>
<td>Jones</td>
<td>03/2001</td>
<td>C1524A</td>
<td>Online Provider</td>
</tr>
</tbody>
</table>
Approach and Architecture
A Closer Look

- Learner engages with a system participant
  - High School
  - Testing Agency
  - University
- Data exchange from a previous participant may contain LRI
- Otherwise, LRI is retrieved from Index Server via Lookup API
- LRI is added to system participant’s record for learner
- LRI is included in data exchanges with other participants for learner information instead of SSN or student ID
- Cycle continues when Learner engages with another participant
Index Server & Lookup API

• Index Server
  • Managed, centralized LRI database to store and manage records

• Lookup API
  • Secure Web API with access restricted to system participants
  • ~20 attributes of personal information about a learner
  • Matching engine used to compare against existing records in Index Server
  • Returns either existing LRI if match found
  • Otherwise, generates and returns new LRI

• Management Interface
  • Tools for management of index records
  • Reconciliation of reported mismatched records
  • Manual attribution of matches red-flagged by system as uncertain
Applied Technologies

• Matching Engine
  • Logic to compare learner attributes against existing LRI data to locate matches
  • Based on level of match, different actions are taken
    • Beyond high threshold, match is made and LRI is returned
    • Under low threshold, no match is made and new LRI is generated with learner attributes
    • Clearinghouse enrollment reporting process will identify and resolve match discrepancies

• Cloud Hosting
  • Scalability, security and availability
  • Can be maintained as separate, isolated system
Considered Additional Technologies

• Artificial Intelligence
  • Machine Learning or Deep Learning could be utilized to improve matching results and reduce need for management of the system as database grows

• Blockchain
  • Sensitivity of PII required to operate system may make blockchain undesirable for solution
  • If only index is stored within the chain, separate database will still need to be maintained to securely store related PII off-chain
  • No real ROI for immutability or distributed ledger
Bringing it all together

The business case for why we need to do this now could not be clearer
Mobility rates are growing: Nearly 40% of learners who initially enrolled in 2011 transferred at least once in six years.
Impacts of mobility are even more pronounced in 4 year schools
Across ALL industry sectors
Campus level view

The acute transfer impact on campus cannot be overstated.
Predominantly on-Line campus

Data from 2017 fall cohort of students:

- 90% students transferred in from 2,650 institutions
- 75% of all learners over the age of 30
- 60% have a prior credential

Data from 2014 cohort of students:

- 15% of students transferred out to 1,327 institutions
Four year public campus:

Data from 2017 fall cohort of students:

• 60% students transferred in from 2,000+ institutions
• 66% transferred in from out of state
• 33% of out of state transfer ins had two or more previous enrollments

Data from 2014 cohort of students:

• 30% of students transferred out to 1,300 institutions
In addition:
Fragmentation of traditional learning models:

DELIVERY
• On-line learning
• Across state lines
• Non-traditional enrollments (not for credit, CEU’s etc)

OUTCOMES
• CBE and academic completions
• Advent of proliferation of micro-credentials
• Recognition of the validity of workforce credentials
The LRI initiative is timely:
Industry complexity & getting out in front of a future of growing complexity

THE ASK

Help deliver for the industry
Coalition of the willing!

Workstreams: The establishment of workgroups to help bring a proof of concept to life:

- School Participation
- Operations
- Technology
- Governance
  - Operations
- Sustainability
- Project Mgmt
Indication of Interest Form – Get Involved!

http://www.tiny.cc/LRI-Interest
THANK YOU