*L*inked Data for Professional Education

LD4PE

INSTITUTE of **Museum** and **Library** SERVICES

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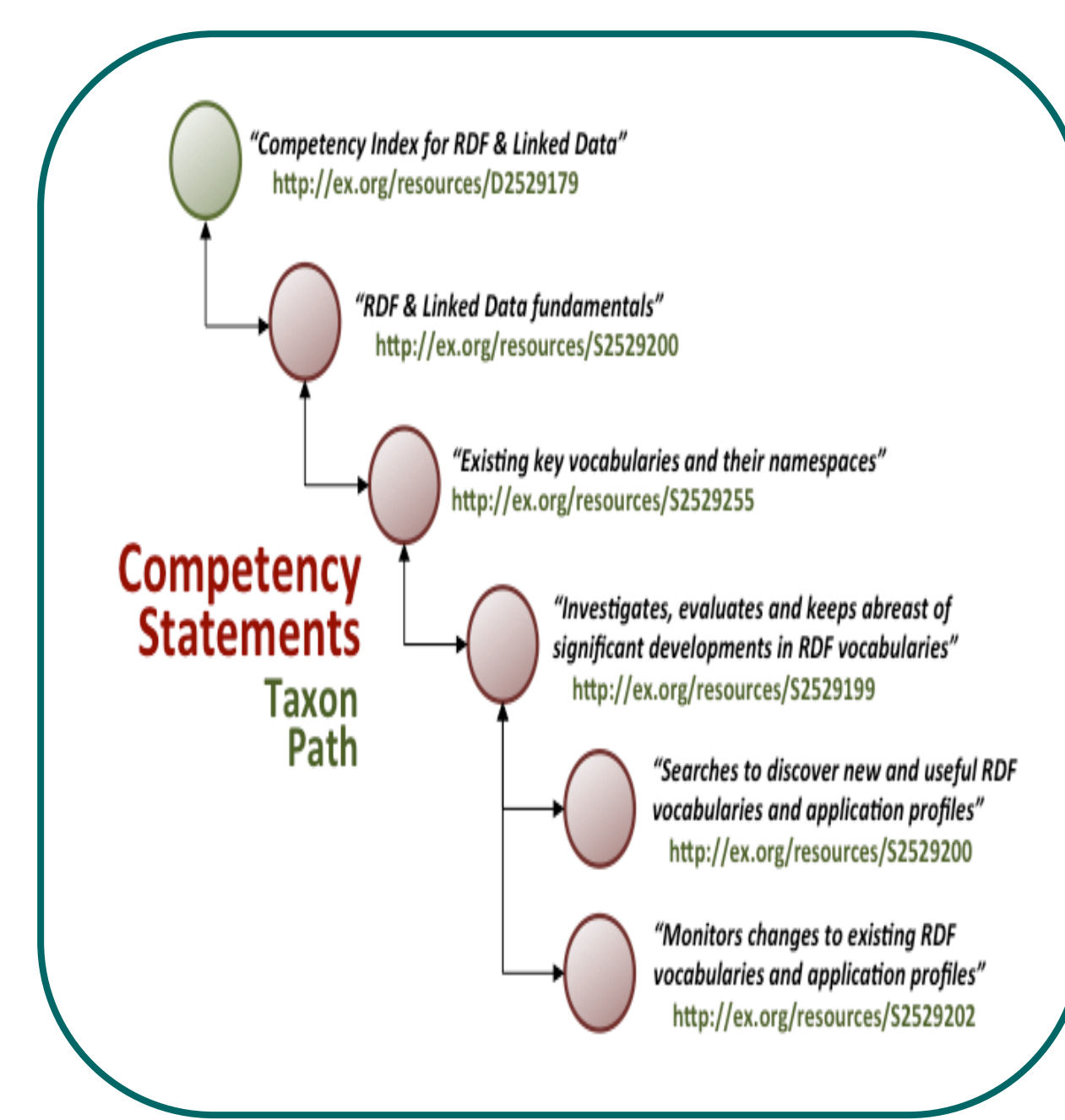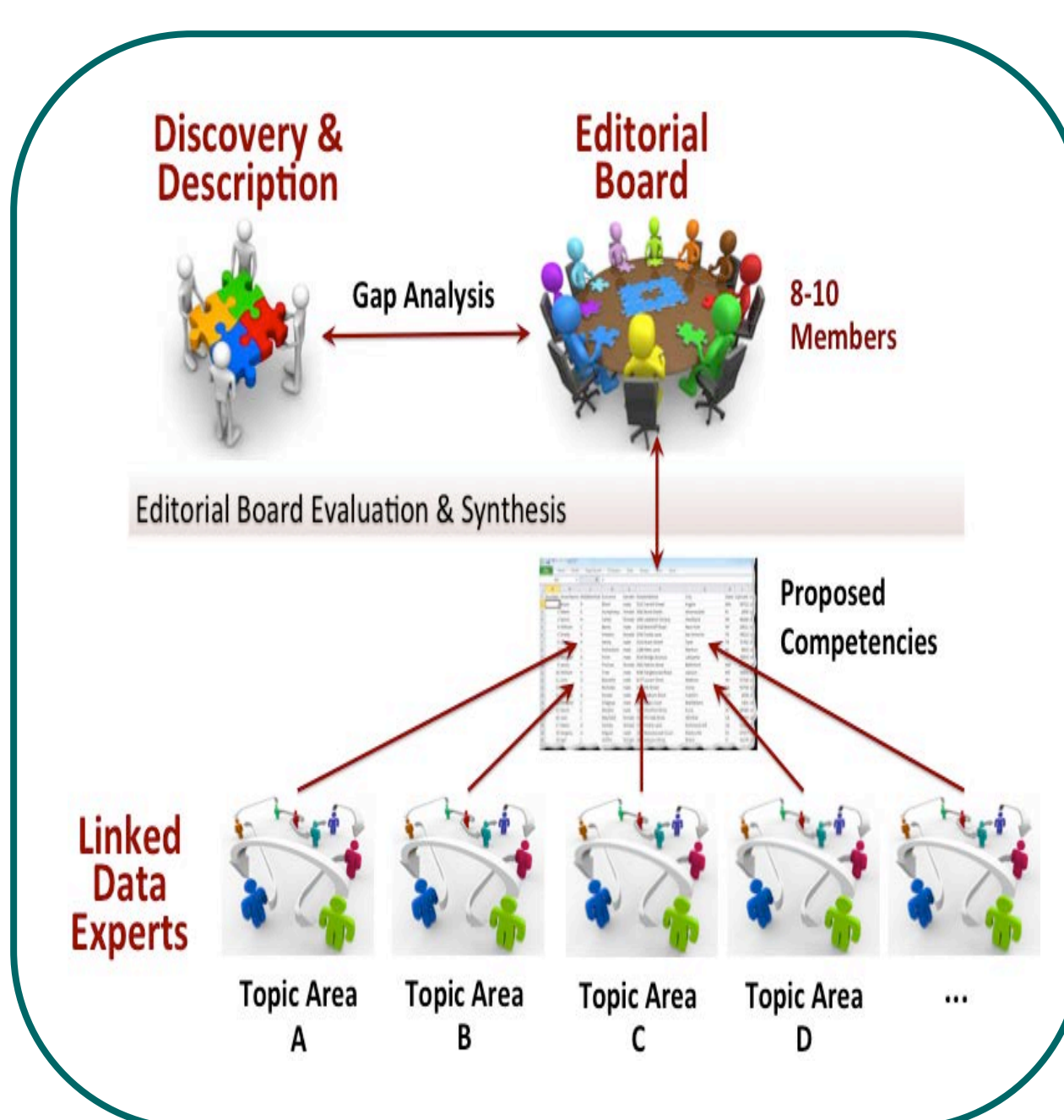Michael Crandall[3], Stuart A. Sutton[3], Thomas Baker[1]
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Linked Data Exploratorium

The LD4PE project is developing a **Web-based, Linked Data *Exploratorium* website** to support for the structured discovery of the learning resources available online through both open and commercial providers.

http://explore.dublincore.net/

LD4PE Linked Data Exploratorium.

Explore Tech Talk Updates About FAQ

Welcome

Competency-Based Learning Resources
Exploratorium Project
Linked Data

Theory & Background   Featured Resource   Recent Updates

Browse by Competency

- Competency Index for RDF & Linked Data (130)
  - RDF & Linked Data fundamentals (74)
  - Searching and querying (63)
    - Querying RDF data using SPARQL (21)
      - Uses query forms including ASK, SELECT, DESCRIBE, CONSTRUCT (2)
      - Uses query patterns including BGP, UNION, OPTIONAL, FILTER (3)
      - Uses sequence modifiers including DISTINCT, REDUCED, ORDER BY, LIMIT, OFFSET (2)
      - Understands the SPARQL 1.1 query language, protocol, functions and operators (16)
    - Discovery of RDF vocabularies and data sets (3)
    - Assessment of RDF vocabularies and data sets (0)
    - Updating RDF with SPARQL 1.1 (6)
    - Reasoning over RDF (40)
    - Anatomy of a simple SPARQL query (1)
  - Creating, publishing and manipulating RDF (57)
  - Visualizing graphs (1)
  - Implementing applications (0)

The Architecture

At the heart of the Exploratorium is a ***competency framework*** for Linked Data practice that supports indexing ***learning resources*** according to the specific competencies they address.

vimeo slideshare WORDPRESS You Tube

LRMI Editor — Learning Resource Descriptions

ASN Editor — Competency Descriptions

Triplestore

Web-based Tools Recipes & Roadmaps

ASN Frameworks

Concept Schemes

Social Recommen-dations

ASN=Achievement Standards Network
LRMI=Learning Resource Metadata Initiative

The *Exploratorium* is leveraging Linked Data technology by modeling in RDF and assigning global identifiers (URIs) to statements of competence, and then using those URIs to map learning resource metadata to nodes in the Index.

Competency Index Development

Discovery & Description — Editorial Board 8-10 Members

Gap Analysis

Editorial Board Evaluation & Synthesis

Proposed Competencies

Linked Data Experts

Topic Area A   Topic Area B   Topic Area C   Topic Area D   ...

"Competency Index for RDF & Linked Data"
http://ex.org/resources/D2529179

"RDF & Linked Data fundamentals"
http://ex.org/resources/S2529200

"Existing key vocabularies and their namespaces"
http://ex.org/resources/S2529255

Competency Statements
Taxon Path

"Investigates, evaluates and keeps abreast of significant developments in RDF vocabularies"
http://ex.org/resources/S2529199

"Searches to discover new and useful RDF vocabularies and application profiles"
http://ex.org/resources/S2529200

"Monitors changes to existing RDF vocabularies and application profiles"
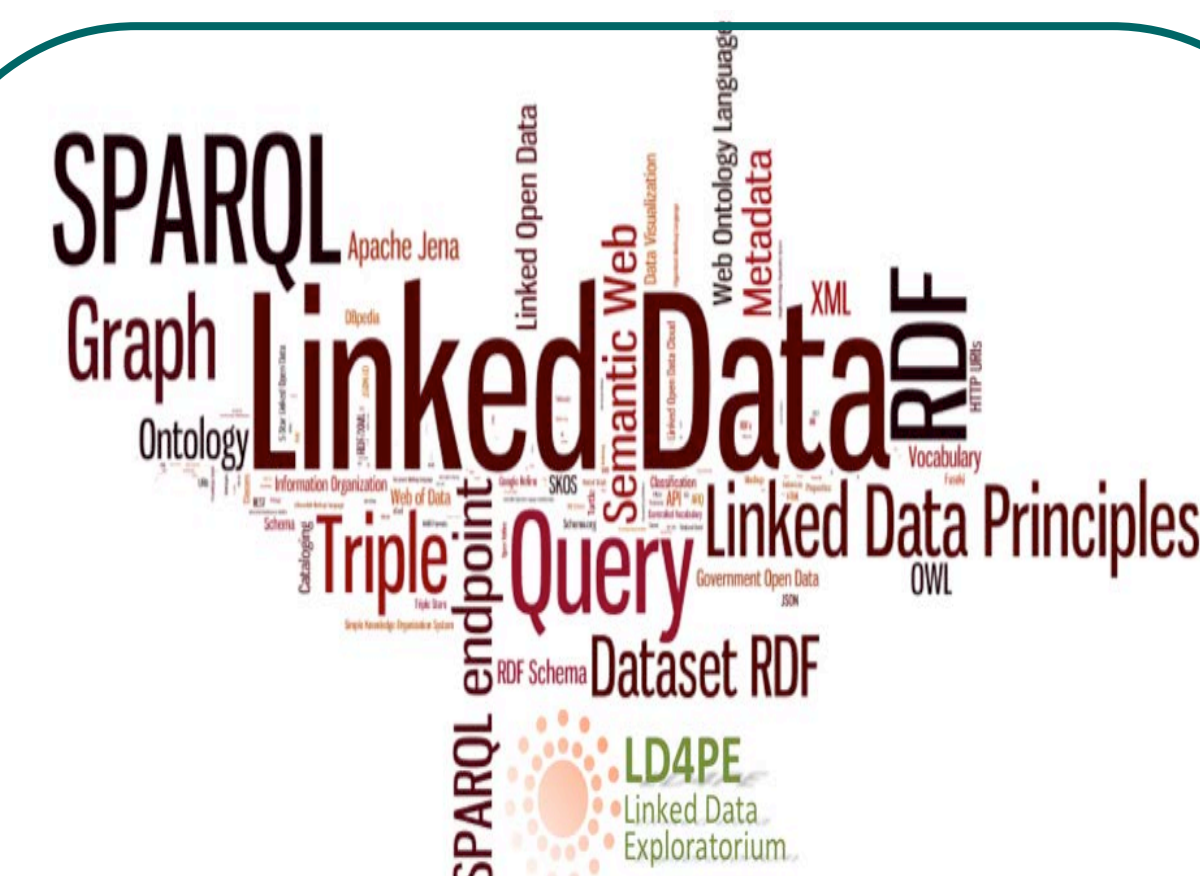http://ex.org/resources/S2529202

Competency Index structure:

Topical Cluster » Topic » Competency » Benchmark

The Competency Index (CI) for Linked Data is comprised of a set of topically arranged assertions of the knowledge, skills and habits of mind required for professional practice in the area of Linked Data.
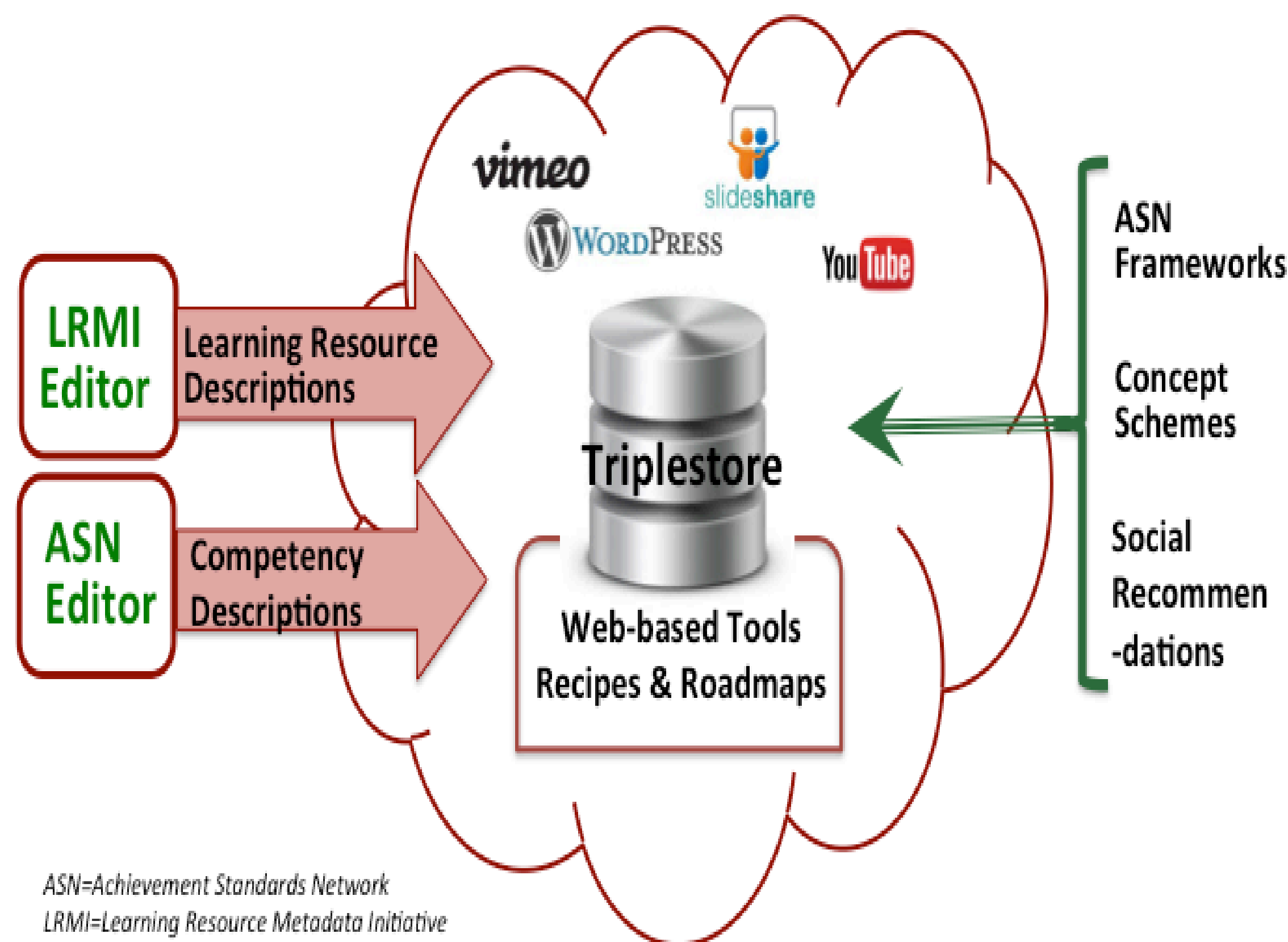
Learning Resources

1-*n* Learner Trajectories

Competency Statements

SPARQL Graph **Linked Data** RDF Ontology Triple Query Linked Data Principles Dataset RDF SPARQL endpoint LD4PE Linked Data Exploratorium.

- ✓ curricular structures and syllabi
- ✓ packages of "how-to" videos
- ✓ step-by-step instructions
- ✓ tools and codes prepared for exercises

Deliverables of the LD4PE project

• ***Competency Framework.*** RDF-modeled "Competency Index for Linked Data" (Index) based on the Achievement Standards Network Description Language (ASN-DL) for describing formally promulgated competencies and benchmarks.

• ***Toolkit.*** An openly available, web-based tool set to support the: (a) generation of RDF metadata describing learning resources; and (b) creation of learner trajectory maps expressing curricular structures or personal learning journeys superimposed over the competency framework.

• ***Learning Resource Descriptions.*** A set of cataloged learning resources that have been mapped to the competencies and benchmarks of the Index to support competency-based resource discovery by teachers, trainers and learners.

• ***Exploratorium.*** A website to be managed by DCMI as part of its educational agenda for open discovery of competency-based learning resources, access to the toolkit, learner maps, and supporting resources.

• ***Best Practices.*** Readily accessible best practice documentation for all processes, from community-based competency framework development and LR description through learner trajectory creation.