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Developing a Personal Learning Infrastructure with Stephen Downes

Online Educa Berlin Workshop
December 2, 2015



<http://www.downes.ca/presentation/373>

This workshop will map the technological infrastructure for a personal learning network. It will describe the major protocols supporting personal learning and describe how third party applications (such as simulation engines or learning management systems) interact with personal learning environments. It will draw on the technology developed by the National Research Council's 'Learning and Performance Support Systems' to create a testbed technology environment.

Agenda

- | | |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:00 – 10:30 | Introductions / Overview of the Concept of PLEs |
| 10:30 – 11:30 | Why a personal learning environment? (Interactive exercise to identify the underlying value propositions) |
| 11:30 – 12:00 | Break |
| 12:00 – 13:30 | What is a PLE? Elements of a personal learning environment (interactive exercise to define major elements, e.g. resource network, personal learning record, learning assistant, analytics) |
| 13:30 – 14:30 | Lunch |

- 14:30 – 15:00 Core interaction elements in cloud technologies (APIs, REST.JSON, OAuth, and related core technologies)
- 15:00 – 15:30 Underlying common e-learning technologies – overview of xAPI, LTI and other e-learning tools interoperability
- 15:30 - 16:00 Break
- 16:00 – 17:00 Building the PLE environment: with knowledge of e-learning interoperability technologies, we will ‘moot’ a PLE infrastructure

Introductions and Aliases

- Split into five groups as assigned:
 - Users (slightly larger group)
 - Sponsors (who will pay to have it built)
 - Developers (who will actually build it)
 - Marketing (who will sell it)
 - Operations (who will keep it running)



Users

Choose a person - yourself, your child, a person you know

- it needs to be a specific person with a name, age, place of residence, educational background.

Chose a context or environment - do you work at a law office? A grocery store? Are they a teacher? Are they a farmer in the field?

Sponsors

Choose a person who would pay for the system

- What problem are they trying to solve?
- Why would they be willing to pay?

Examples:

- Company investing in training systems
- College or university administrators
- Government employment support official

Developers

Choose a specialization (don't worry if you aren't really a developer)

For example:

- Database engineer
- User interface designer
- Platform services

Ask yourself:

- What information do I need to be able to do the job?
- How does this look like products that already exist?

Marketing

Some roles and questions:

- Business development
- Copy writer
- Purchaser / distributor

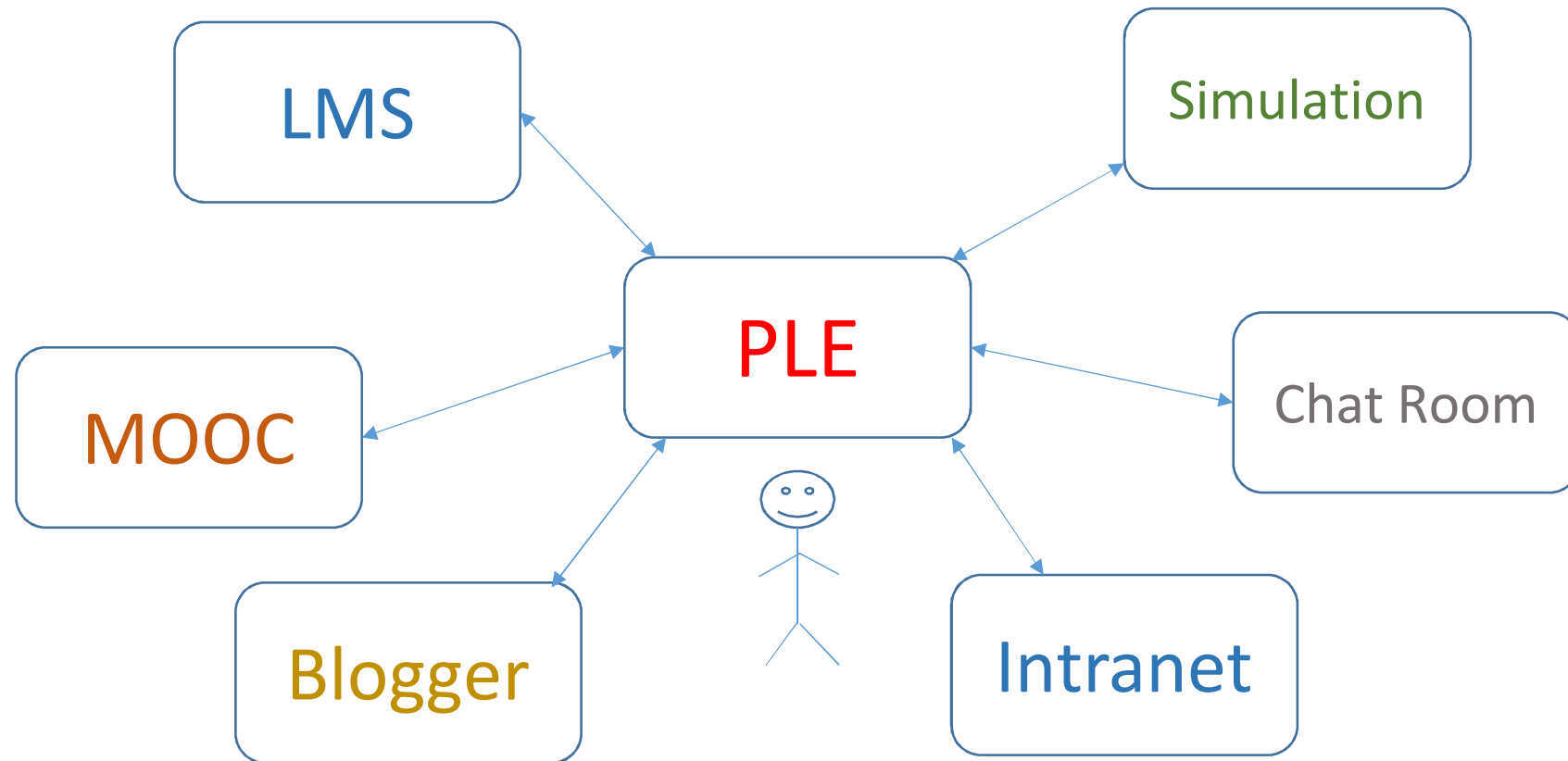
Some marketing questions to ask:

- What's the best business model?
- How can it address client needs?
- Where are the best channels to market it?

Operations and Maintenance

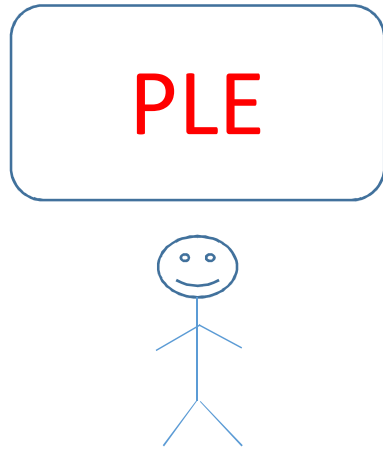
- How do we keep the product running?
- How do we keep maintenance sustainable?
- What roles need to be filled to manage these?

Overview of the Concept of PLEs



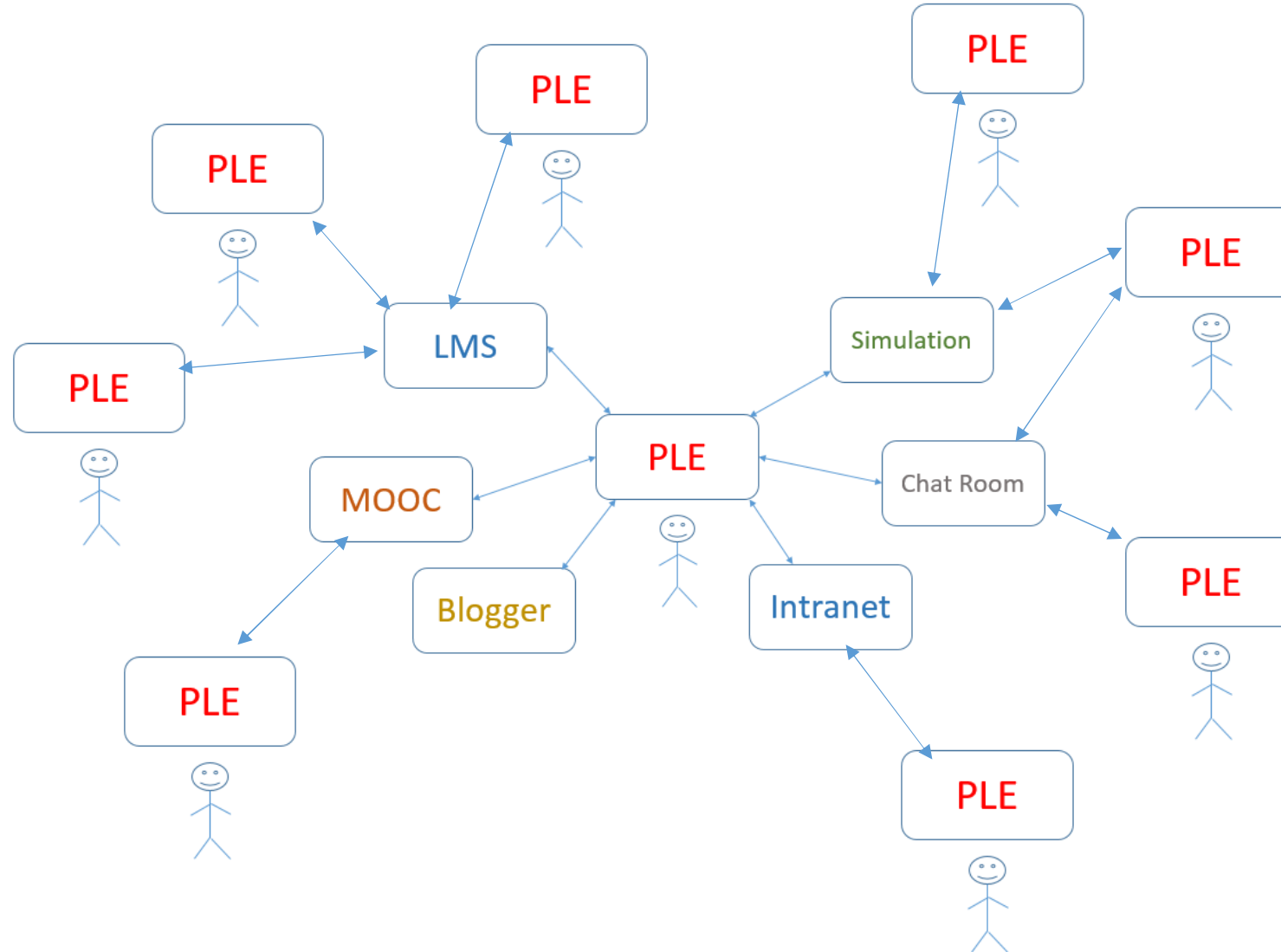
Access to many services in one personal environment

Properties of the PLE...

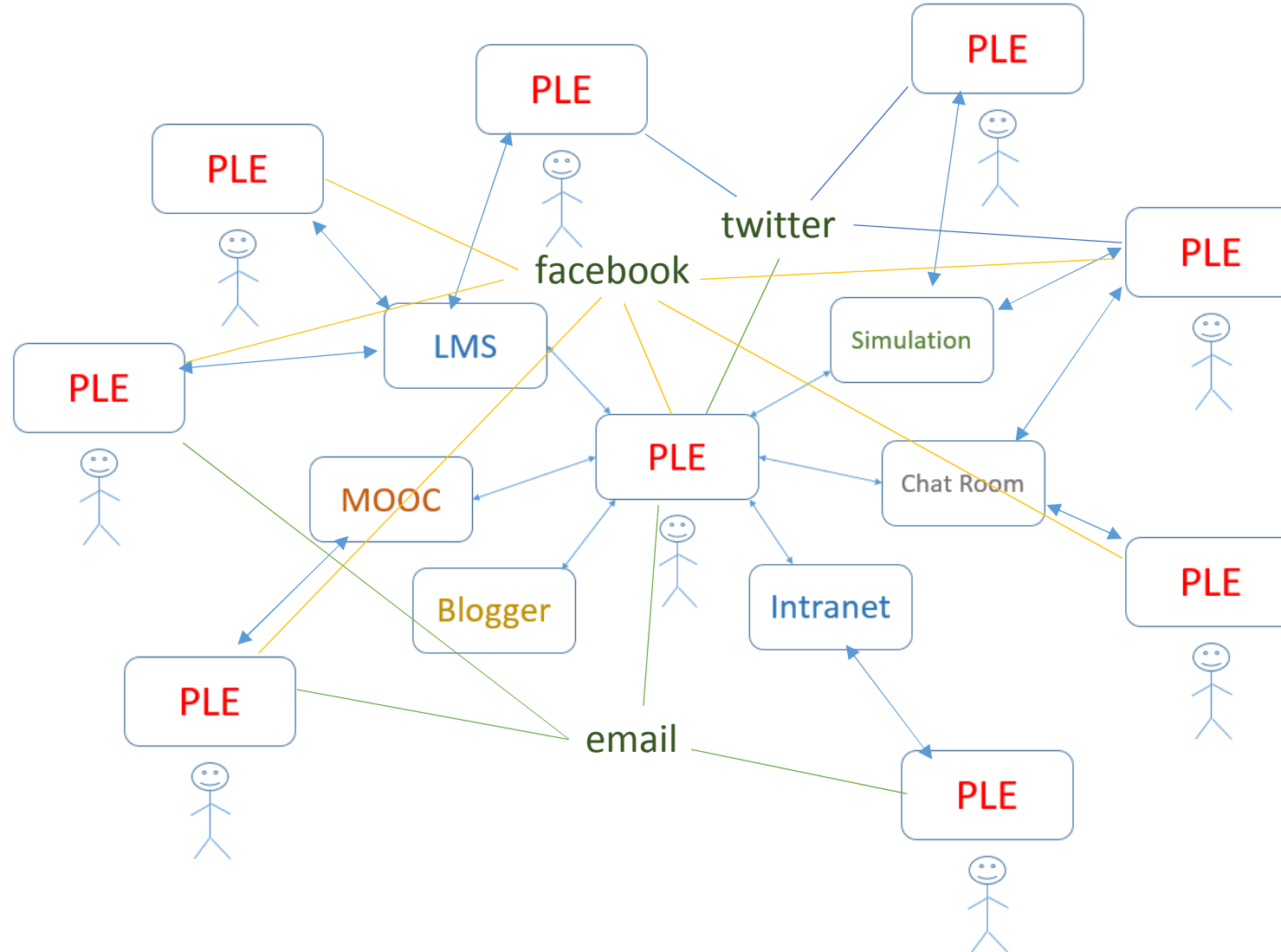


- What information should it record?
- Who owns the data? How private is it?
- What should it *do*?
- What would a person do with it?
- Where, exactly, is a PLE located?

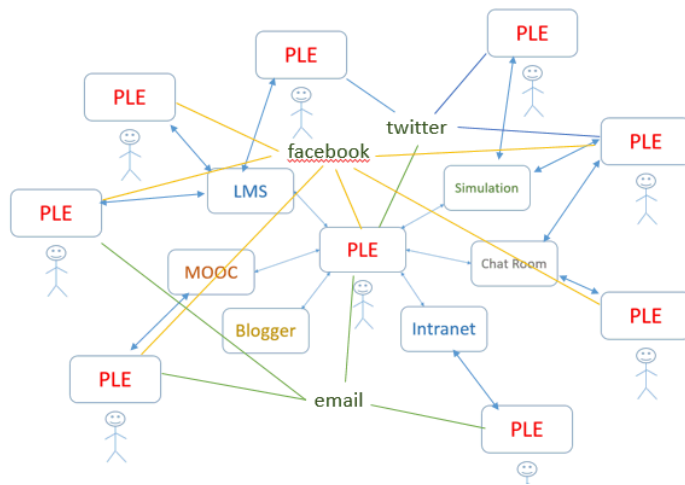
The Network of PLEs



The Social Network of PLEs



Properties of the Network...



- How do people find each other? Services?
- How do they communicate? What do they share?
- How does a single PLE work with services?
- Do we need centralized registries?

Why a personal learning environment?

- What is the *value proposition* for a PLE?
 - Note: value isn't what you can *do*, it's how you benefit
 - This is usually stated in financial terms (earn more, cost less)
 - Can also be stated in terms of quality: faster, bigger, better
 - And can be non-financial goods: satisfaction, happiness, memories

Many elements of the interactive exercises were drawn from Alain Désilets,
Envisioning the Right Thing How to facilitate a collaborative project visioning workshop



The Value Proposition...

For:	Target user
Who:	Pressing need
The PLE is:	Name and type of product
That:	'Killer Feature'.... Reason to buy (or to pay for)
Contrarily to:	Main alternative
It allows them to:	Distinguishing feature

Value Proposition Workshop

- Five new groups, each with a:
 - User
 - Sponsor
 - Developer
 - Marketer
 - Operator
- Draft value propositions and record them

What is a PLE?

- Elements of a personal learning environment (interactive exercise to define major elements, e.g. resource network, personal learning record, learning assistant, analytics)
- What we want to do here is to ask ourselves what a PLE will *do*
- This involves asking why we want a PLE to begin with

So, back in your original groups, consider the following....

What Role Does a PLE Fulfil?

As many roles as you want

Role(s)	Metric #1	Metric #2	Metric #3

What Tasks Will Users Perform?

Role(s)	Task #1	Task #2	Task #3

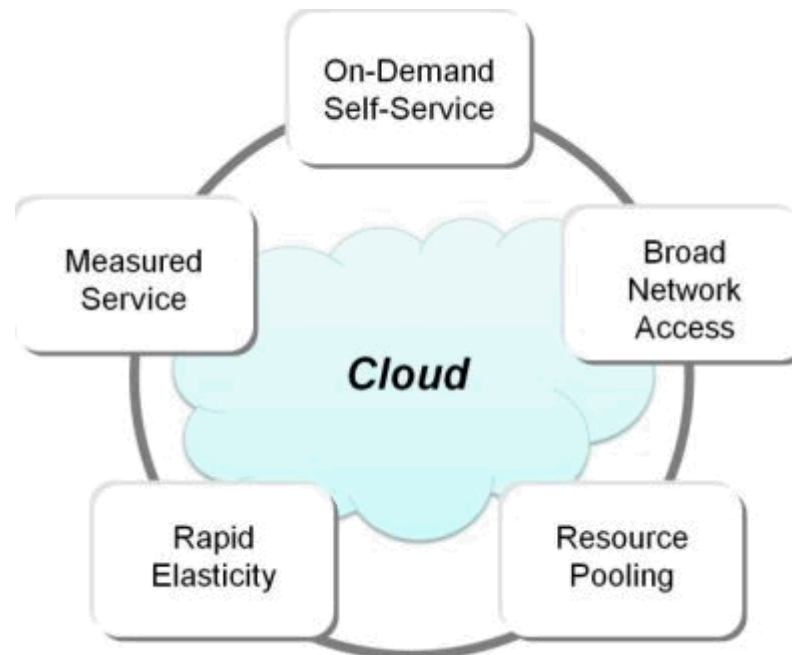
Don't Feel limited by only three tasks... make as many as you want
Put each task on its on PostIt note

What Tasks Will Users Perform?

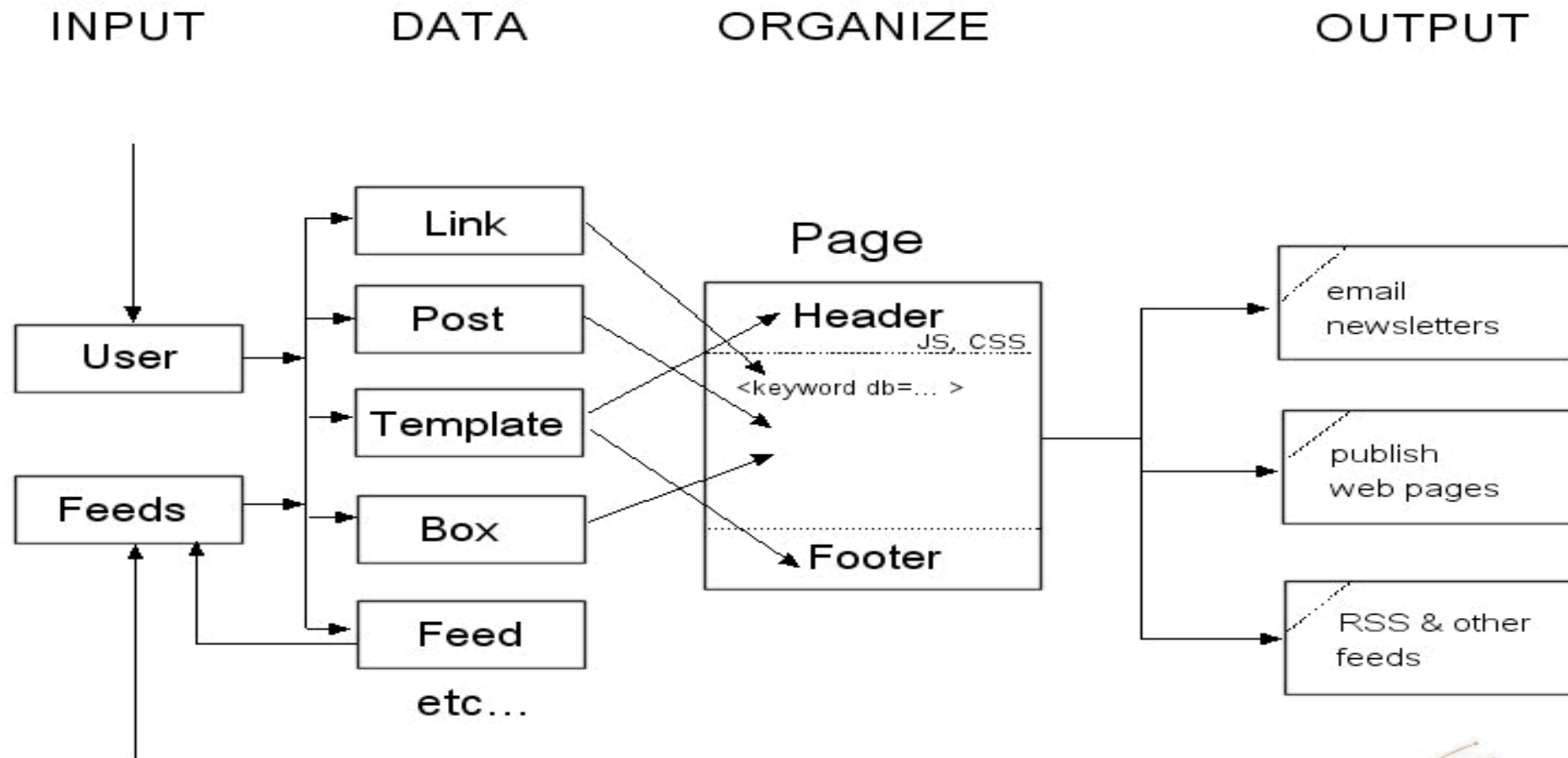
- Task prioritization process.....
 - Vote for the tasks you think are most important
 - Yes, you may vote more than once
 - We will select the top dozen or so tasks

Core interaction elements in cloud technologies

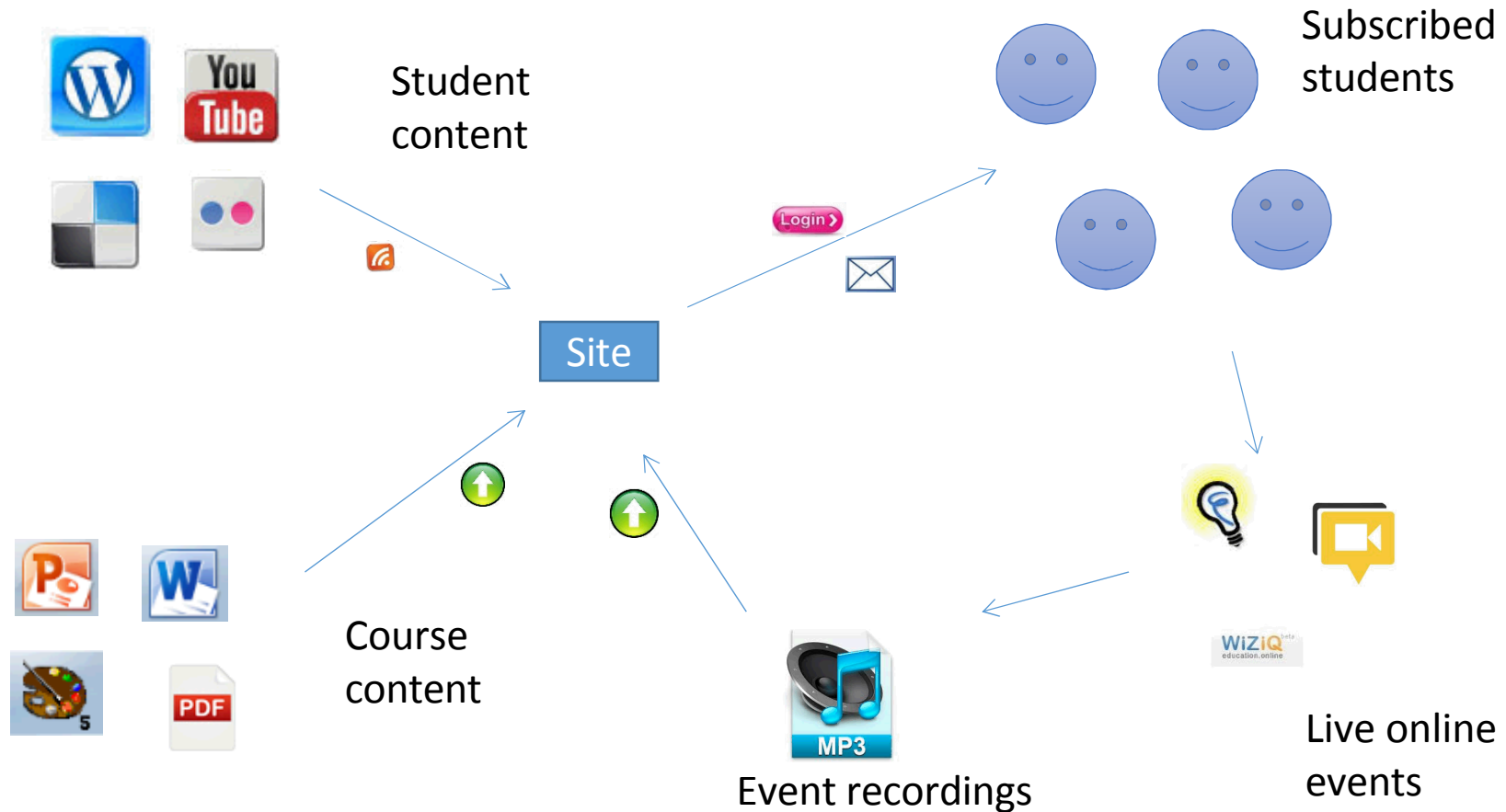
- Core interaction elements in cloud technologies (APIs, REST.JSON, OAuth, and related core technologies)



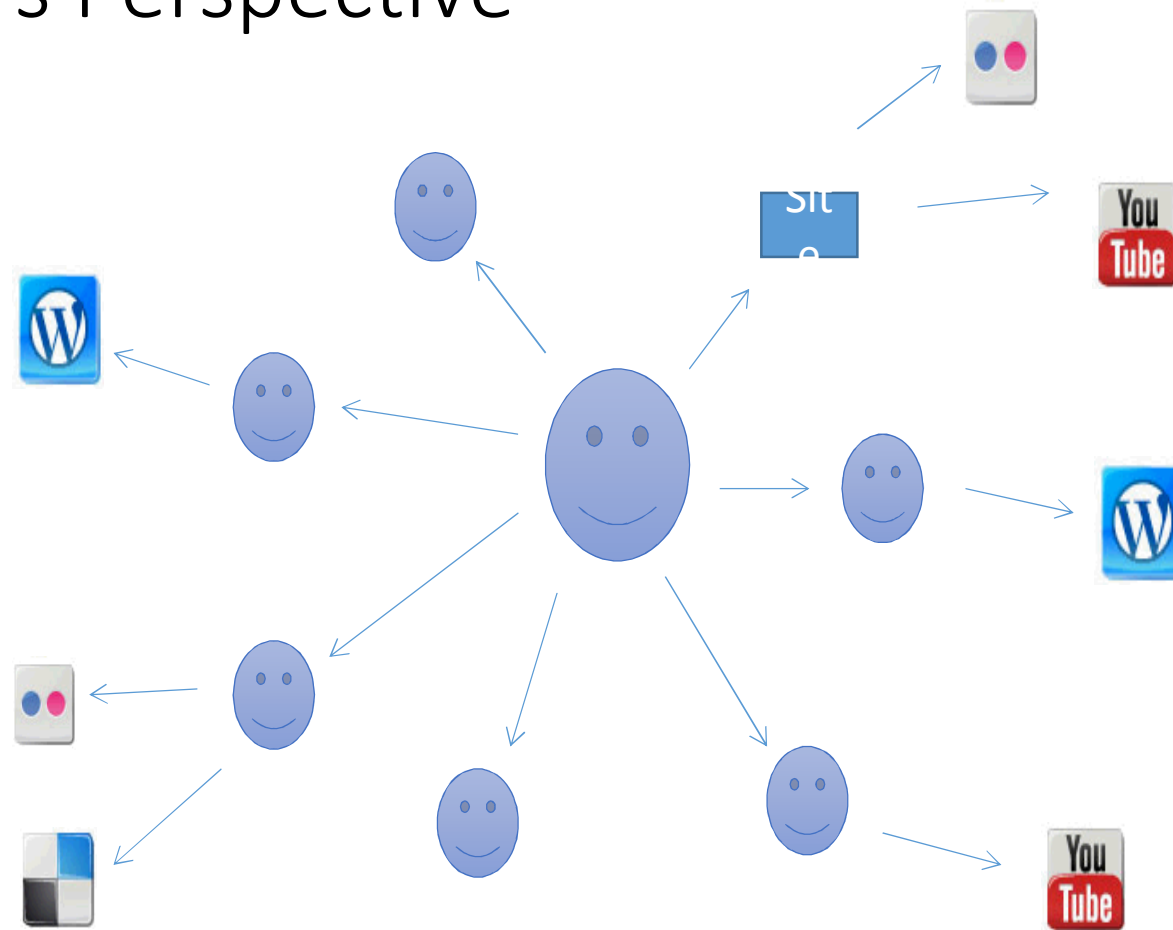
gRSSshopper



Course Provider Perspective

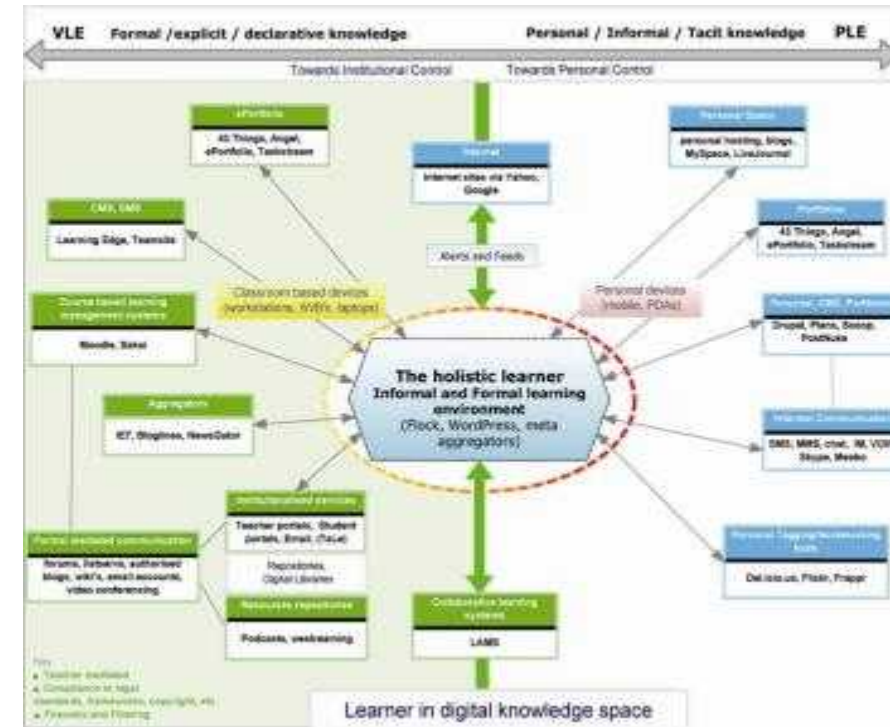
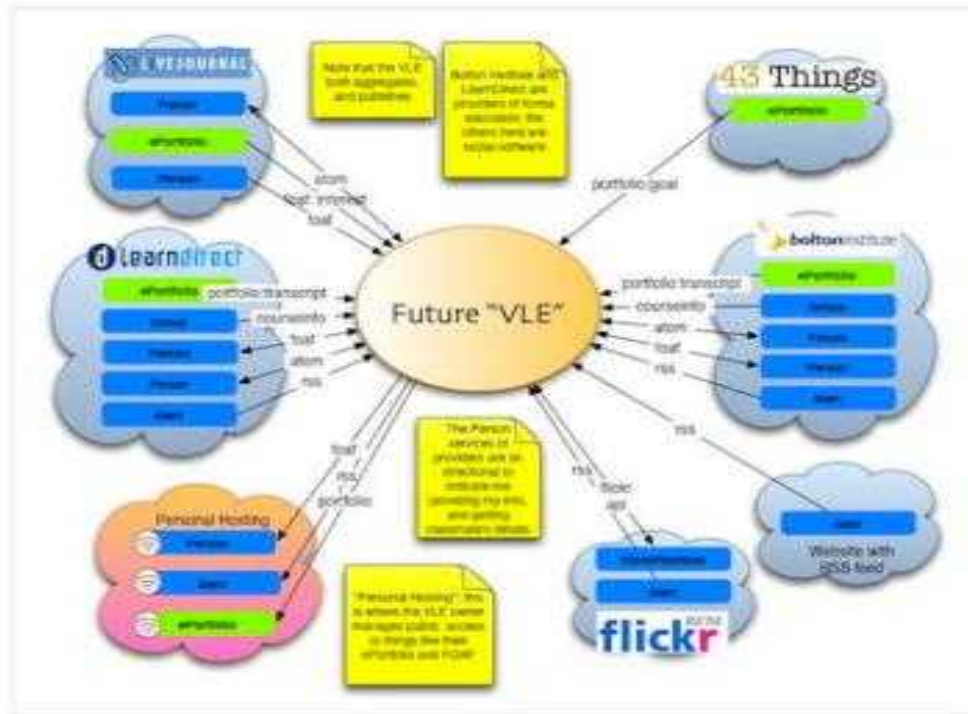


The Student's Perspective



A range of different resources and services

The design is based on putting the learner at the centre

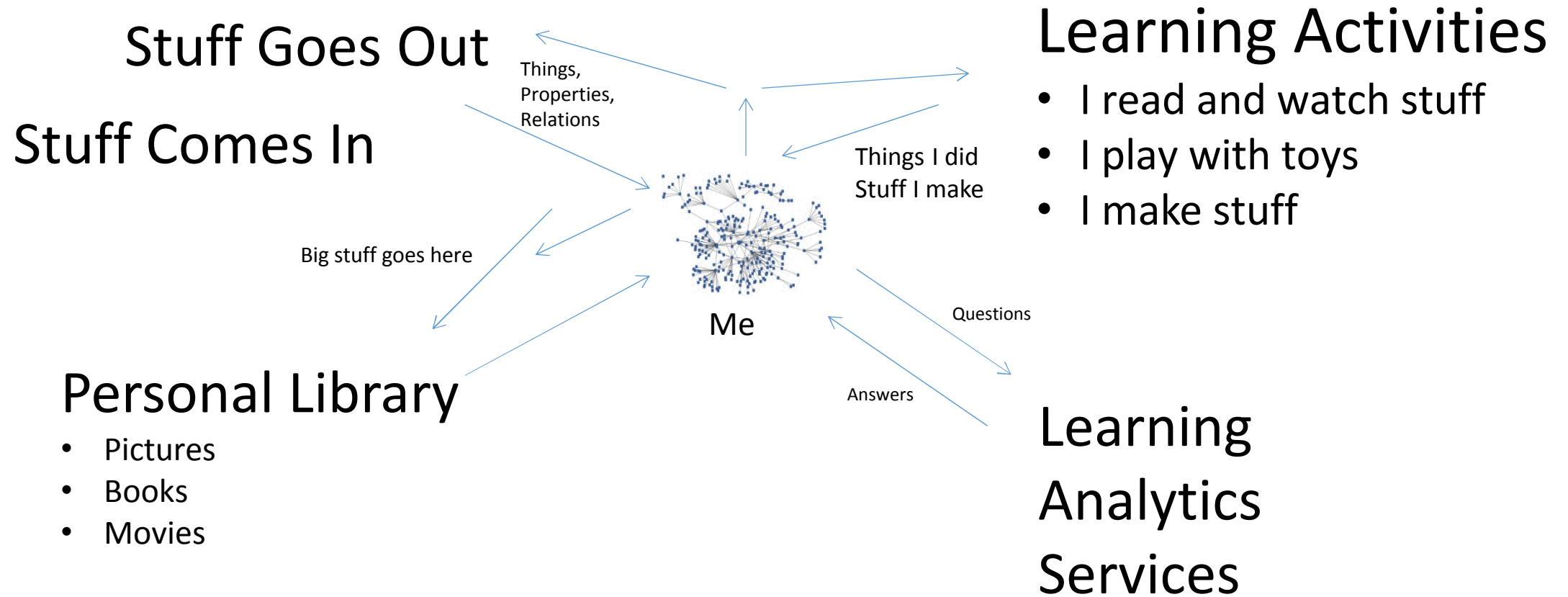


Scott Wilson (left), Tim Hand (right)

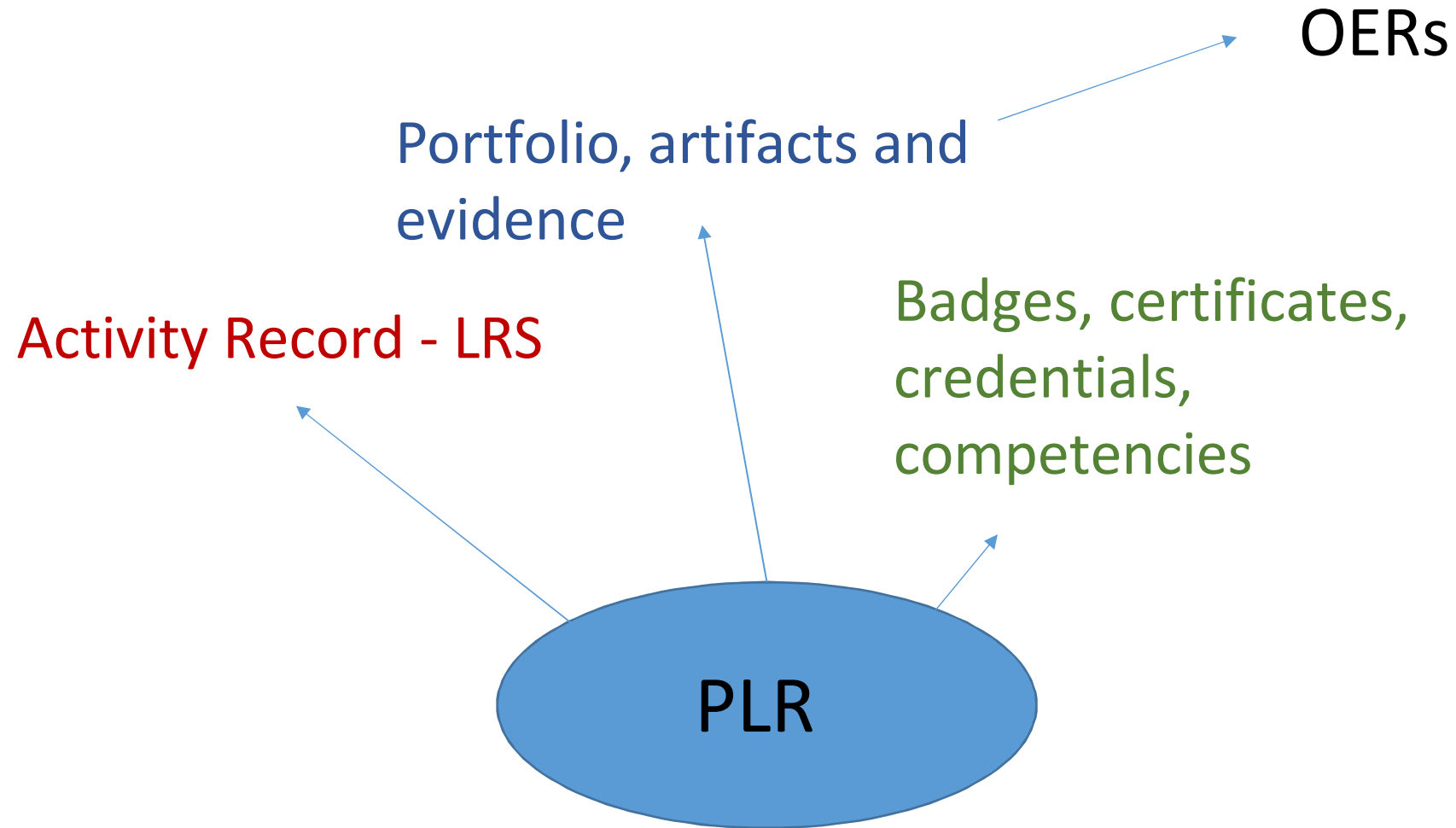
<https://www.google.com/search?q=ple+diagrams>

http://www.edtechpost.ca/ple_diagrams/index.php/mind-map-3

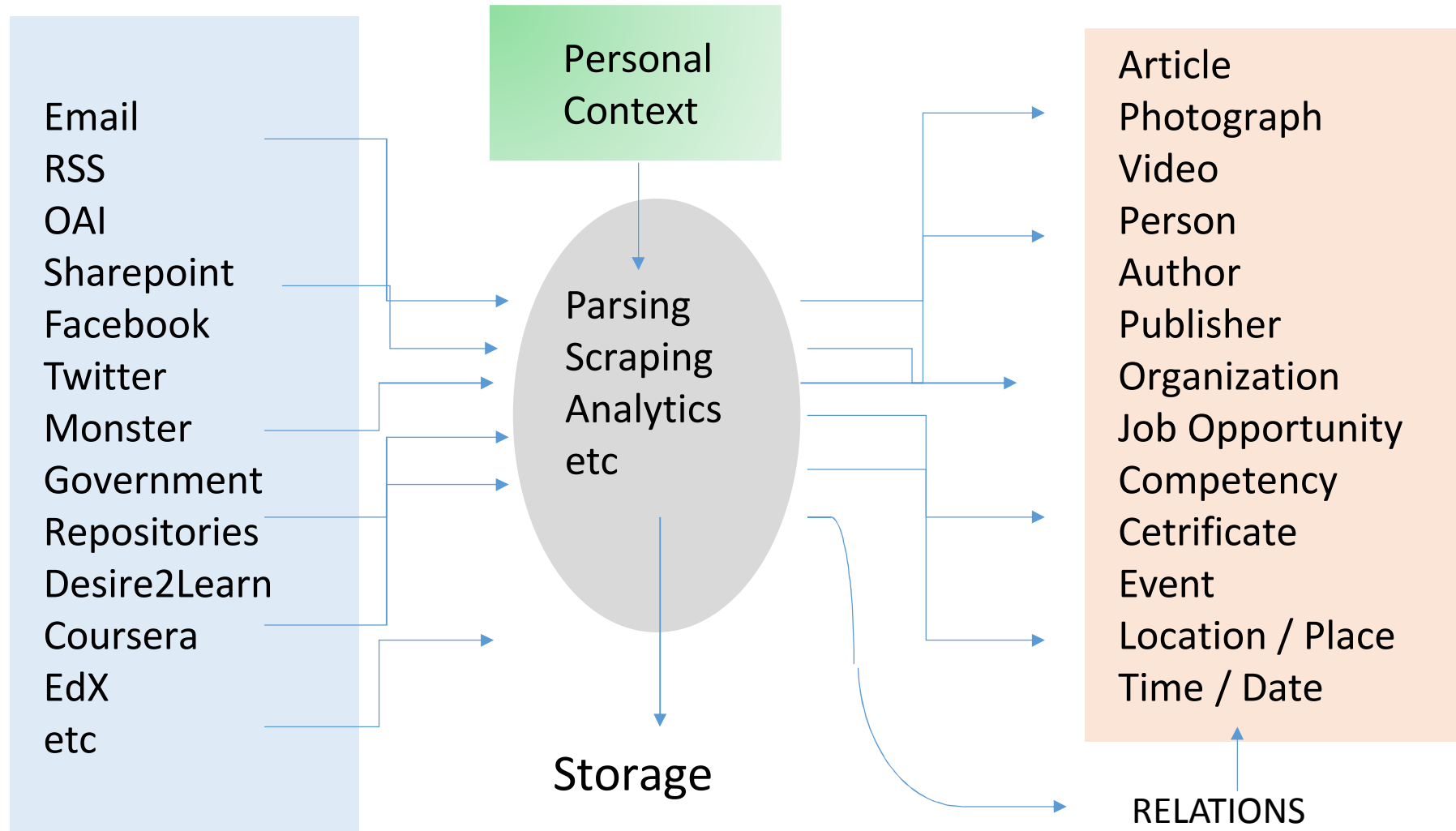
LPSS is Built Around the Personal Learning Record



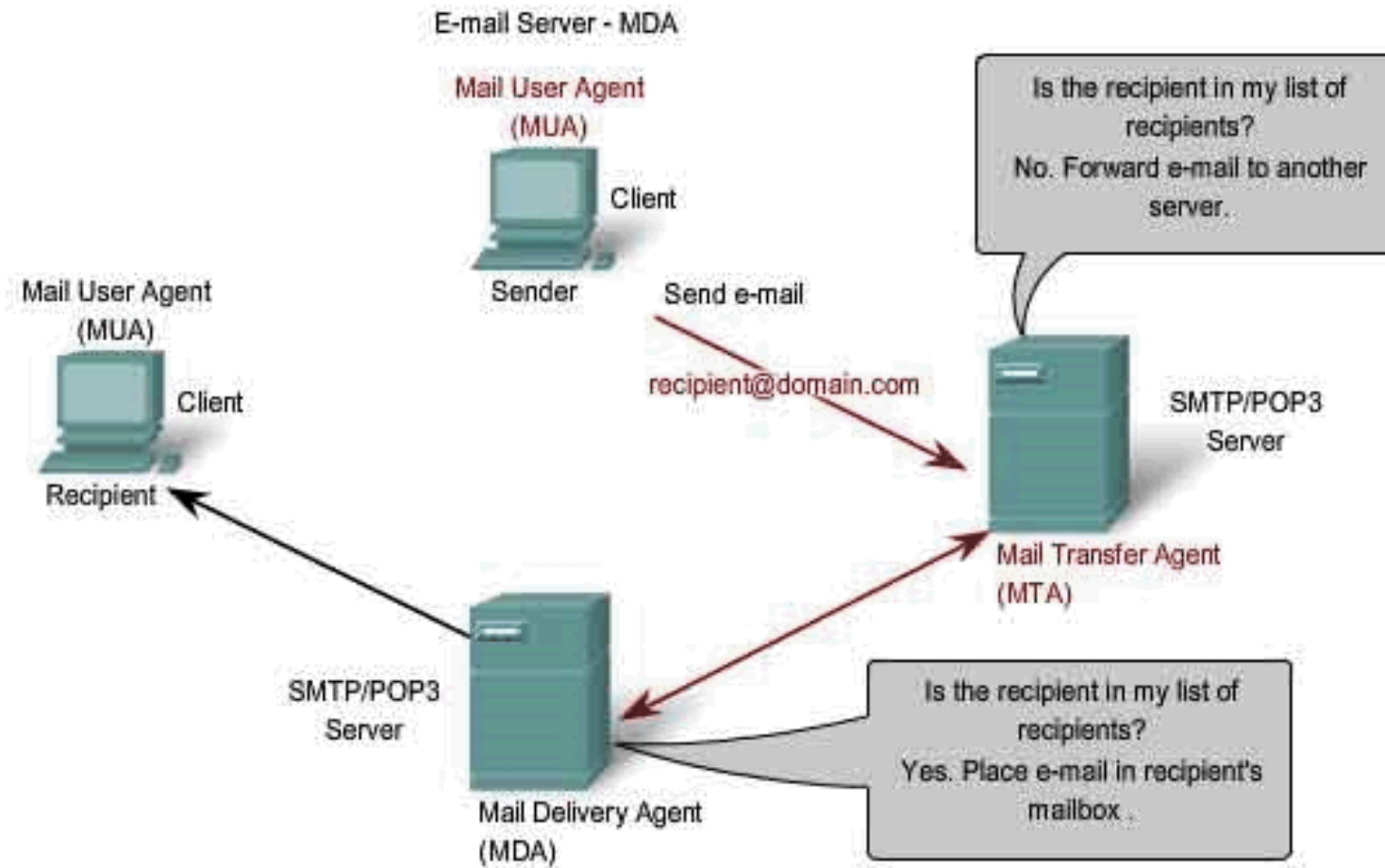
Personal Learning Record



RRN Aggregation and Storage



Email – POP, IMAP, SMTP



RSS

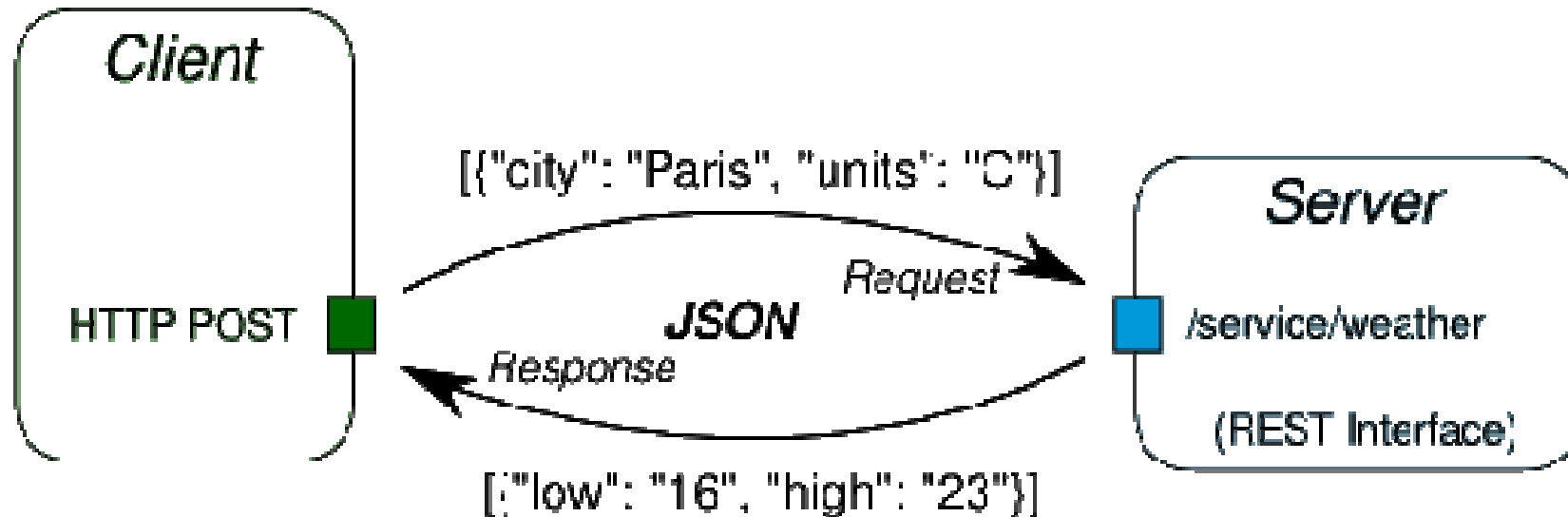
```
<?xml version="1.0" encoding="utf-8"?>
<rss version="2.0">
  <channel>
    <title>Website Feed</title>
    <description>Website Feed coded manually</description>
    <link>http://www.yourdomain.com</link>
    <item>
      <title>Sale this week only</title>
      <description>All household products are 50% off th<
      <link>http://www.yourdomain.com/sales.htm</link>
    </item>
    <item>
      <title>A Special Event</title>
      <description>A Special Teleconference for our custo<
      <link>http://www.yourdomain.com/events.htm</li
    </item>
    <item>
      <title>Announcing new Products</title>
      <description>Announcing a new line of products</de<
      <link>http://www.yourdomain.com/products.htm<
    </item>
  </channel>
</rss>
```



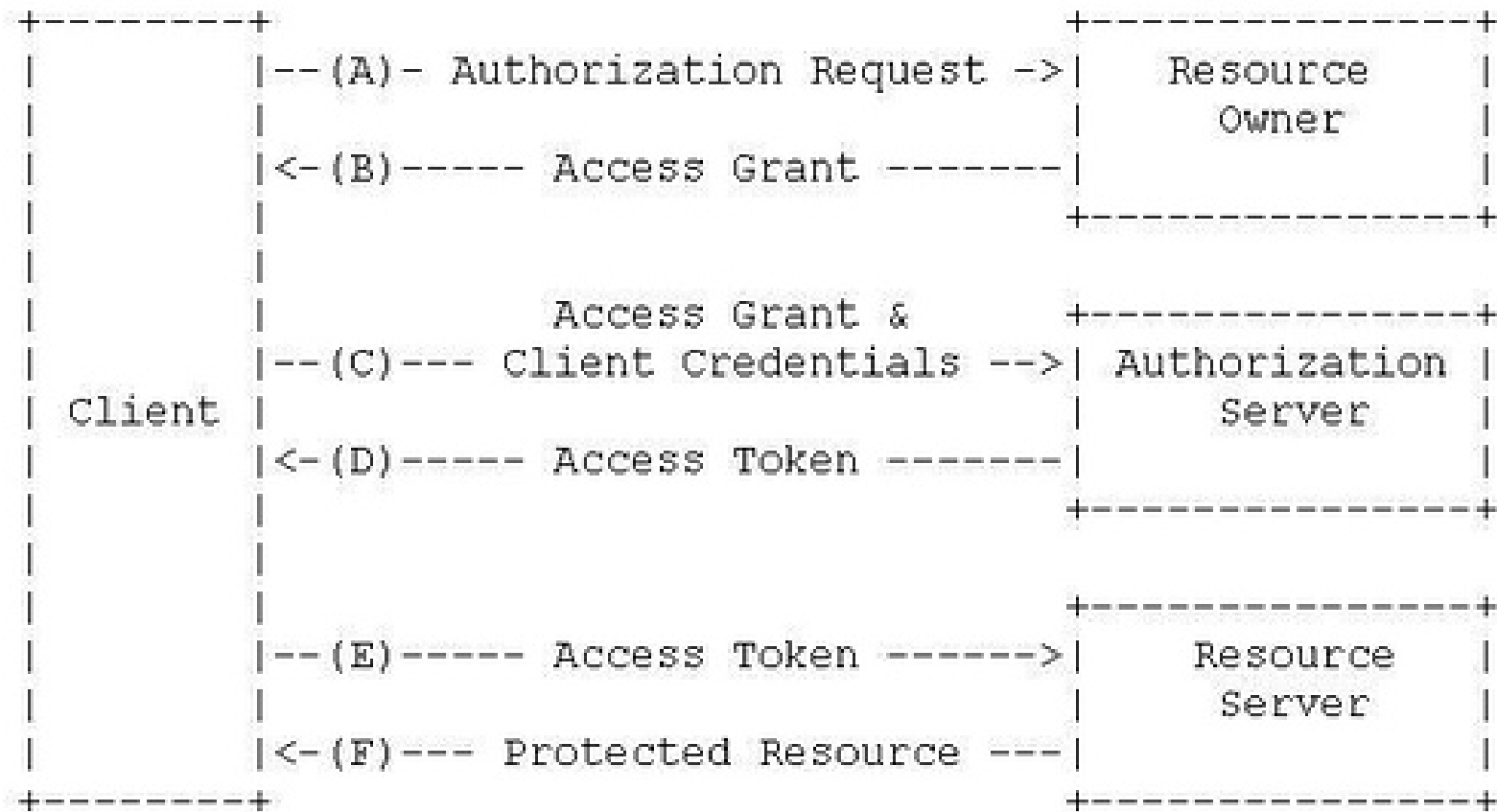
<http://uk.queryclick.com/seo-news/how-rss-feeds-will-change-your-life/>

API / REST / JSON

JSON / REST / HTTP

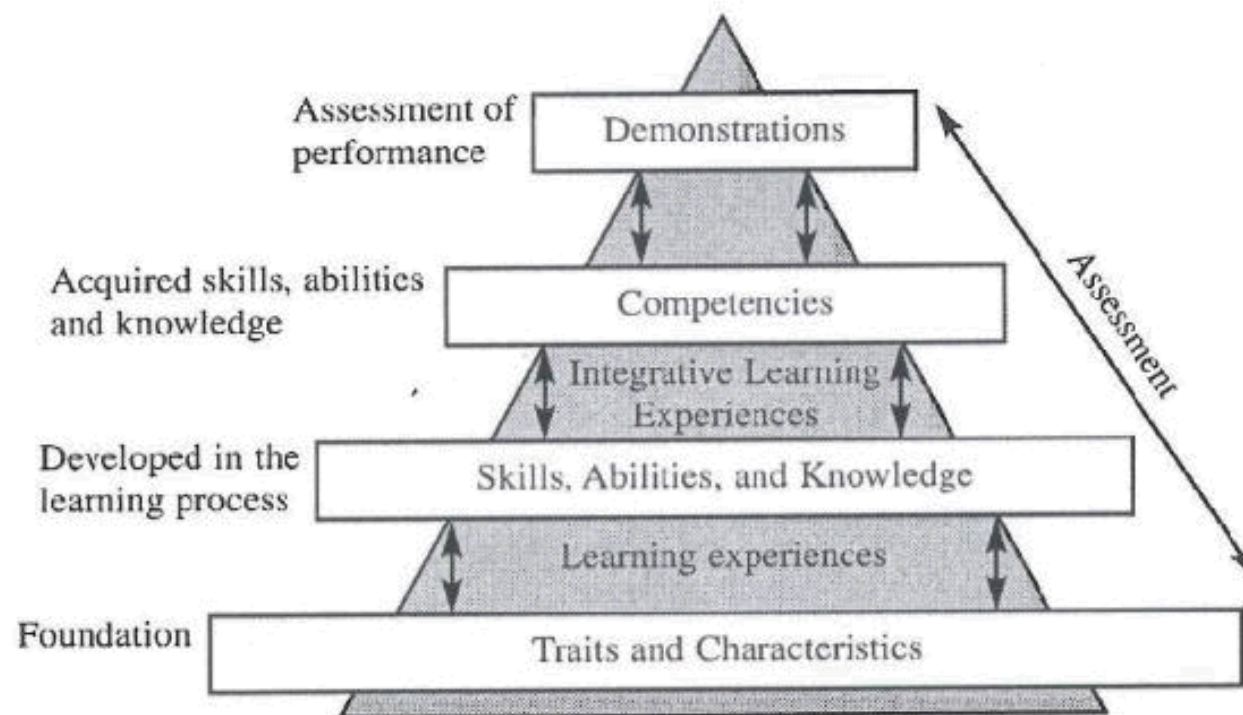


OAuth



Underlying common e-learning technologies

- Overview of xAPI, LTI and other e-learning tools interoperability



Learning Resources – LOM, Packaging

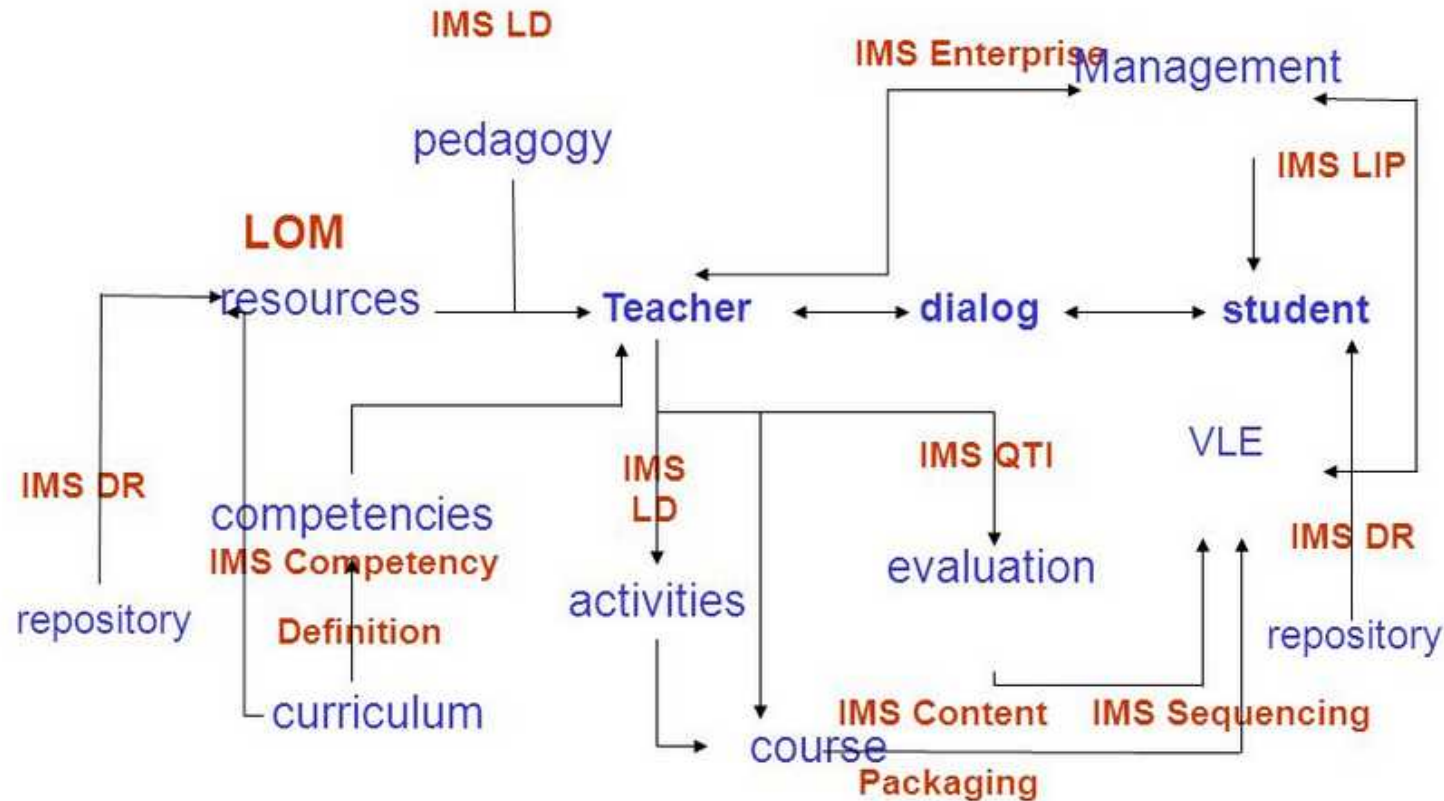
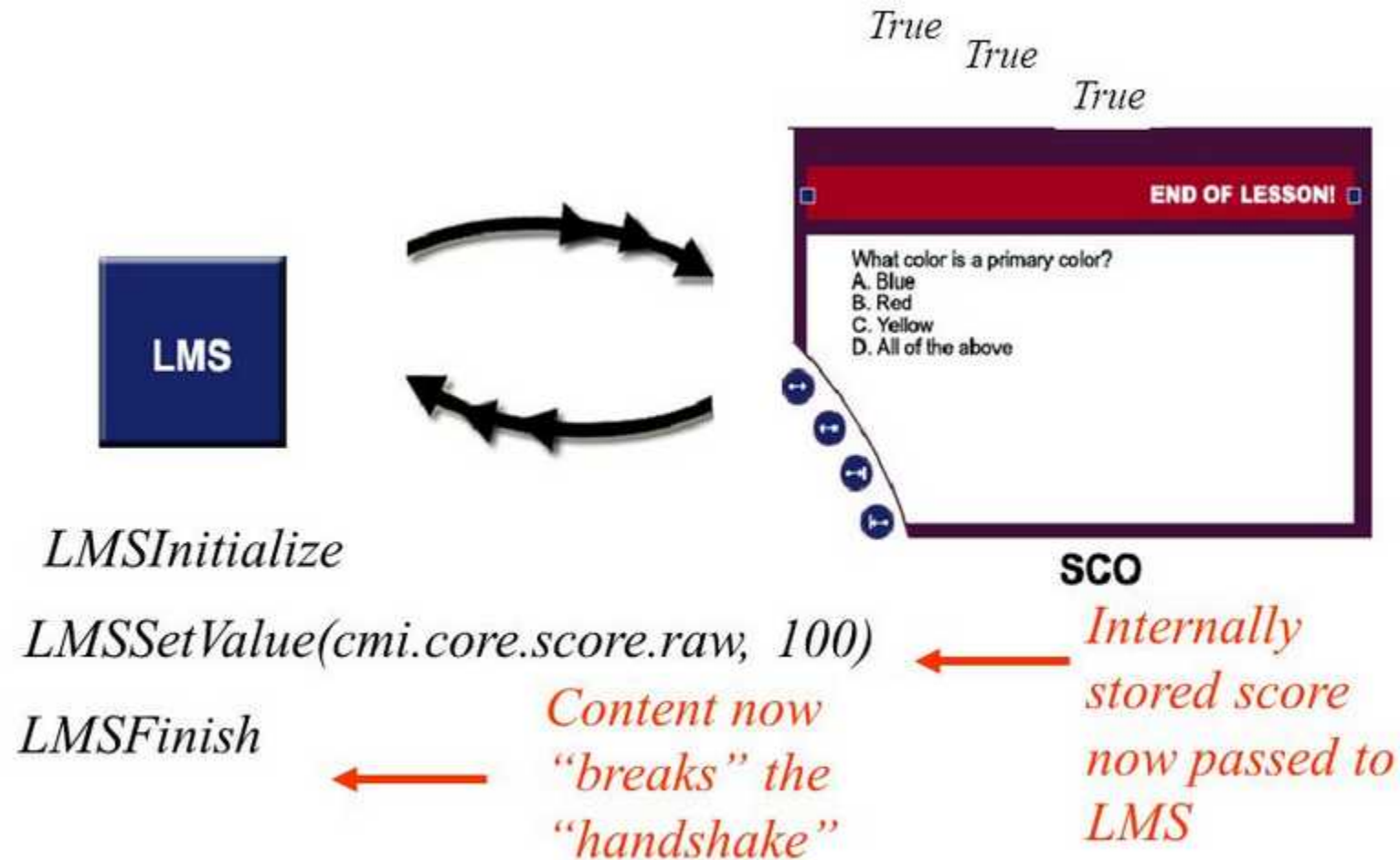
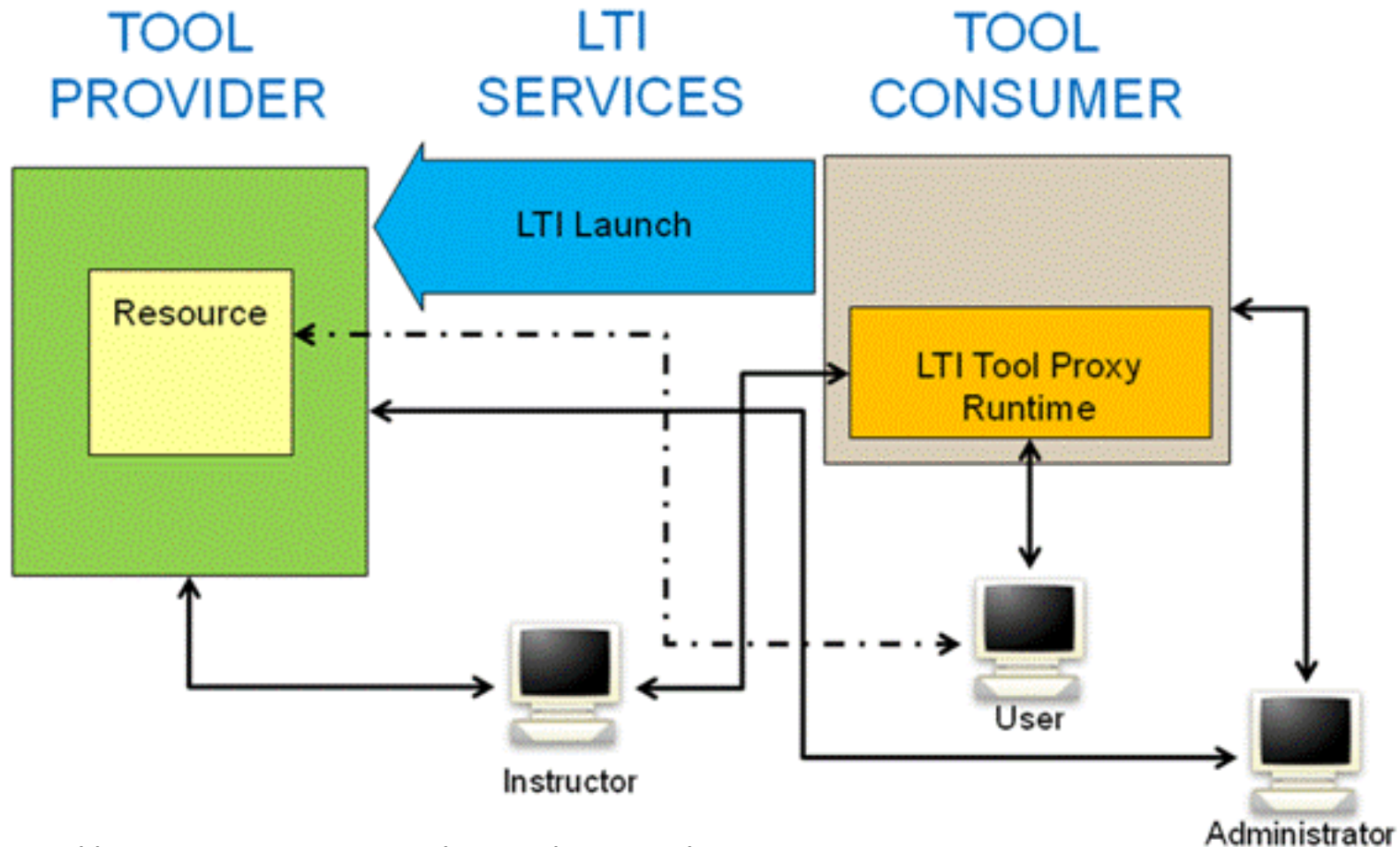


Diagrama original de C. Duncan

Resources – SCORM Run Time Environment



IMS Learning Tools Interoperability (LTI)



<https://www.imsglobal.org/specs/ltiv1p1/implementation-guide>

The eXperience API

Actor	Verb	Object
Andy	Listened to	Great Expectations on Ebook
andy.johnson.ctr@adlnet.gov	http://www.adlnet.gov/verbs/ listened_to	http://universallibrary.com/ GreatExpectations_ISBN#ebook

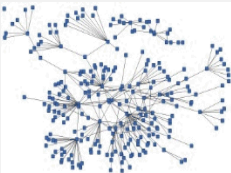
<http://www.learningsolutionsmag.com/articles/1526/five-things-a-web-developer-needs-to-know-about-the-xapi>

LPSS

LPSS is Built Around the *Personal Learning Record*

This is a *new* type of data – we call it the *personal graph*.

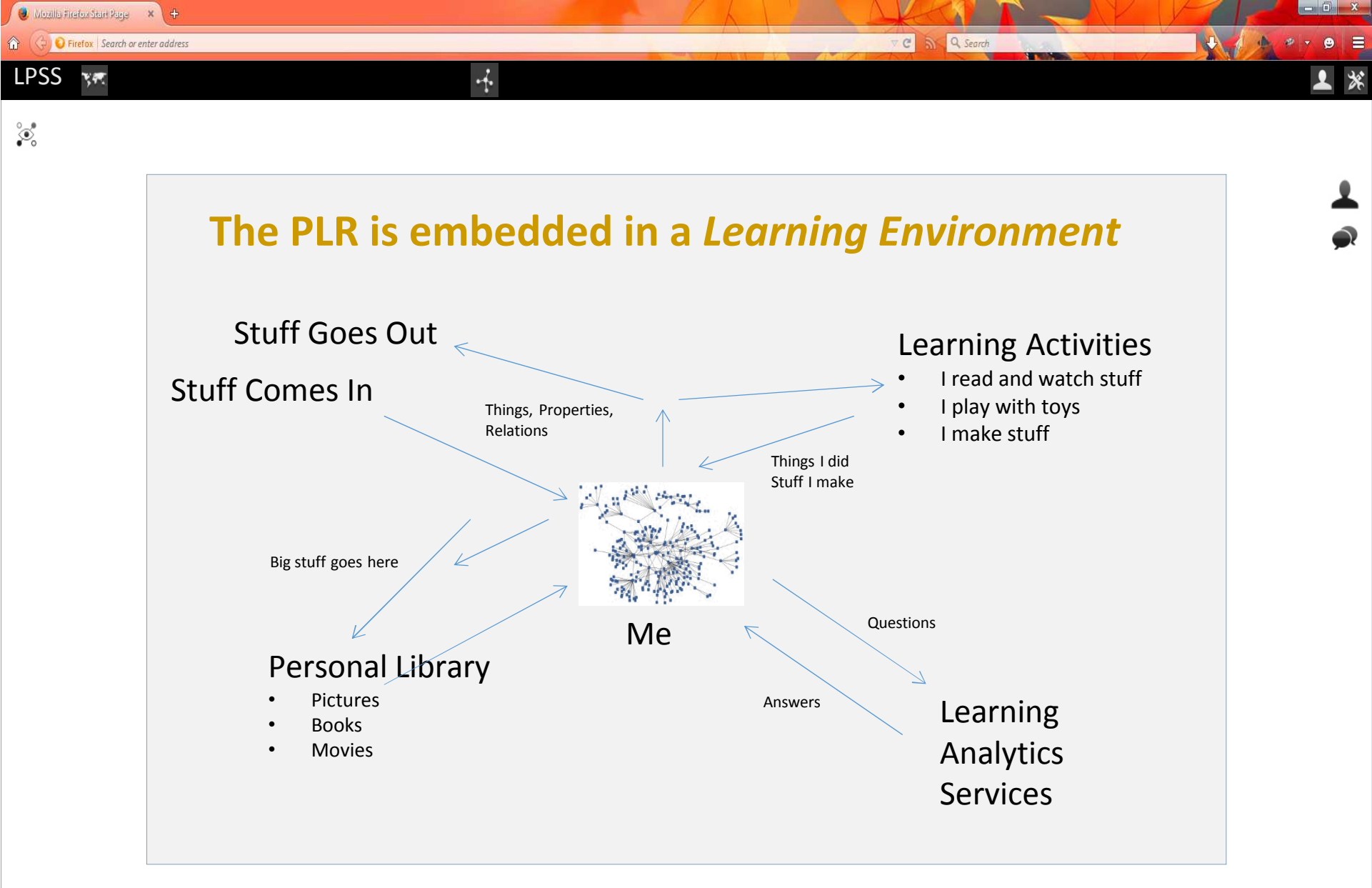
Each person has their own *private* personal graph.

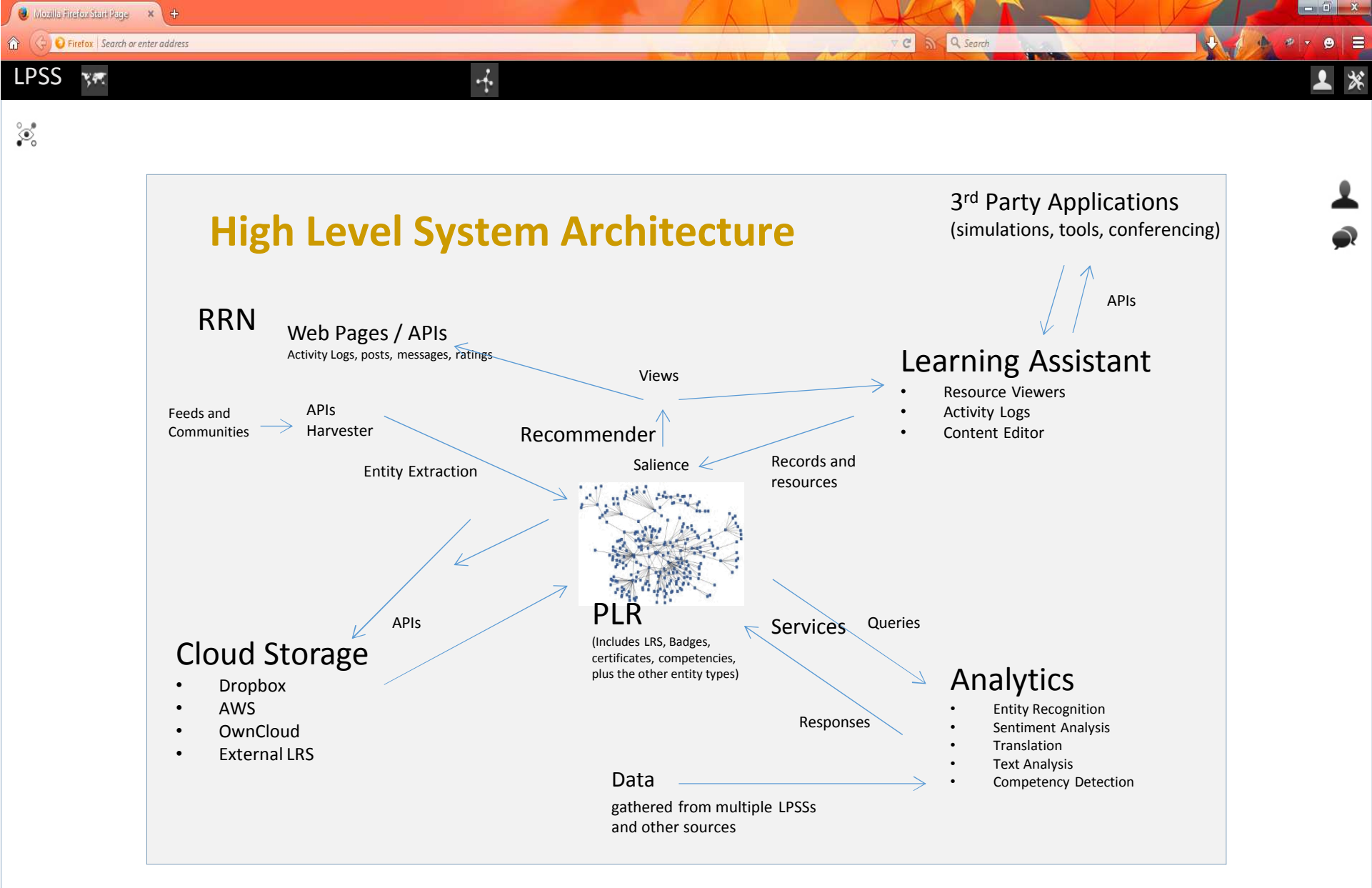


Me

The PLR contains all a person's learning records, including:

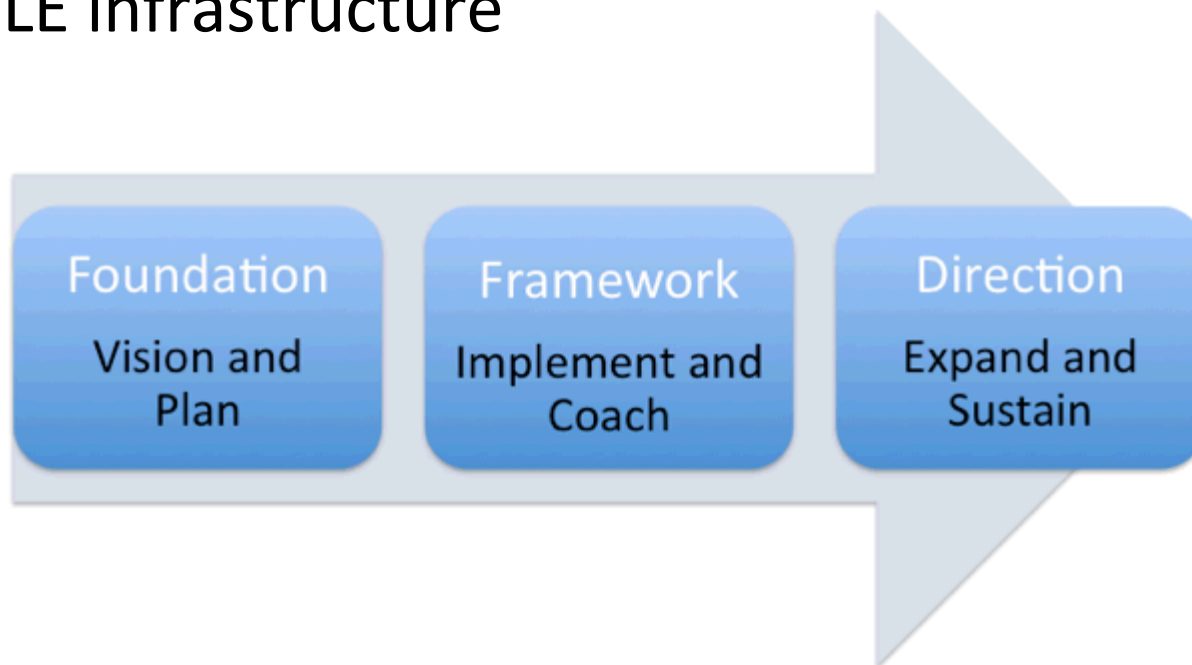
- certificates, badges and credentials
- activity records, test results, scores
- Assignments, papers, drawings, things they create



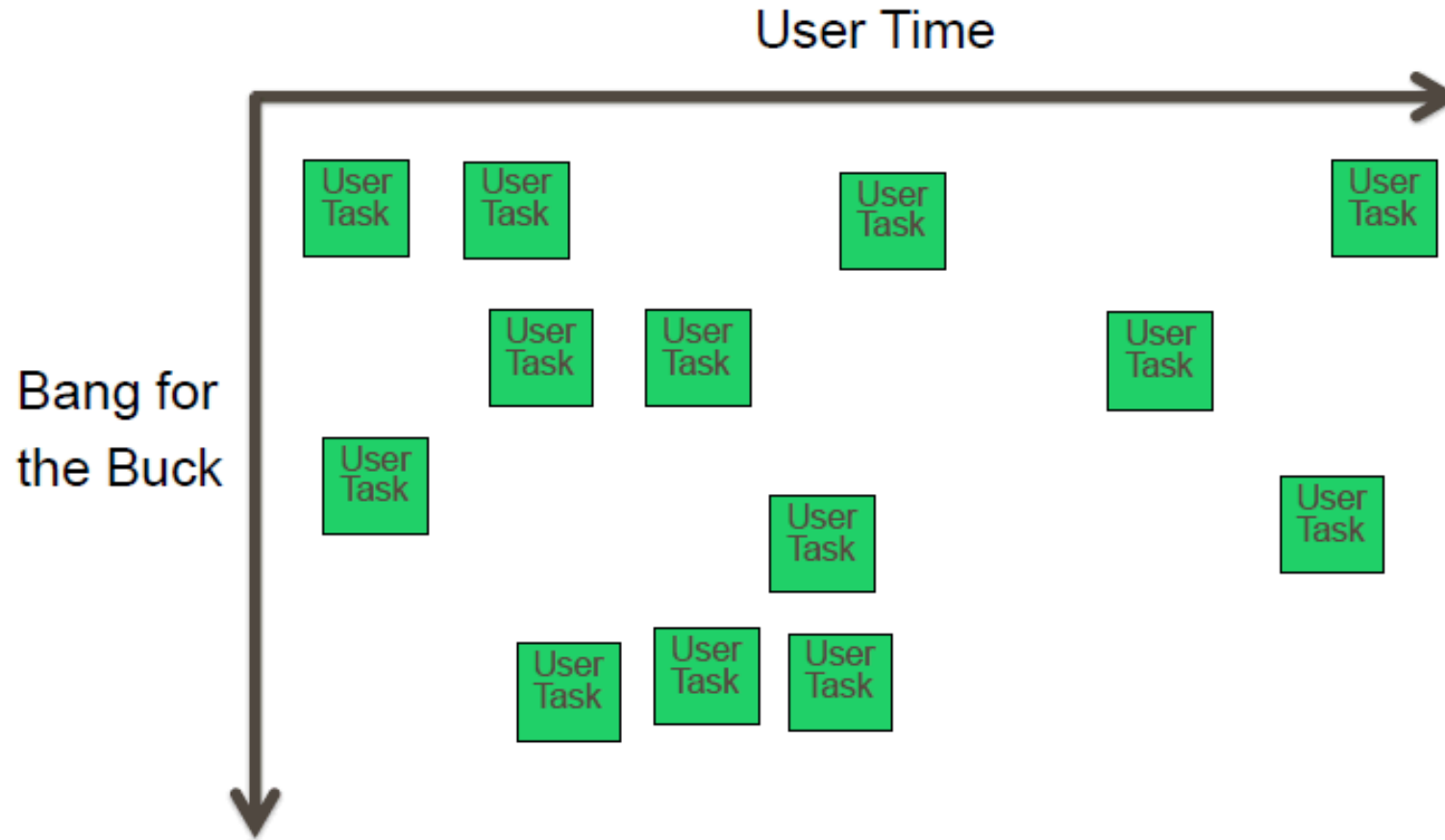


Building the PLE environment

- With knowledge of e-learning interoperability technologies, we will 'moot' a PLE infrastructure



Exercise: Plot Tasks

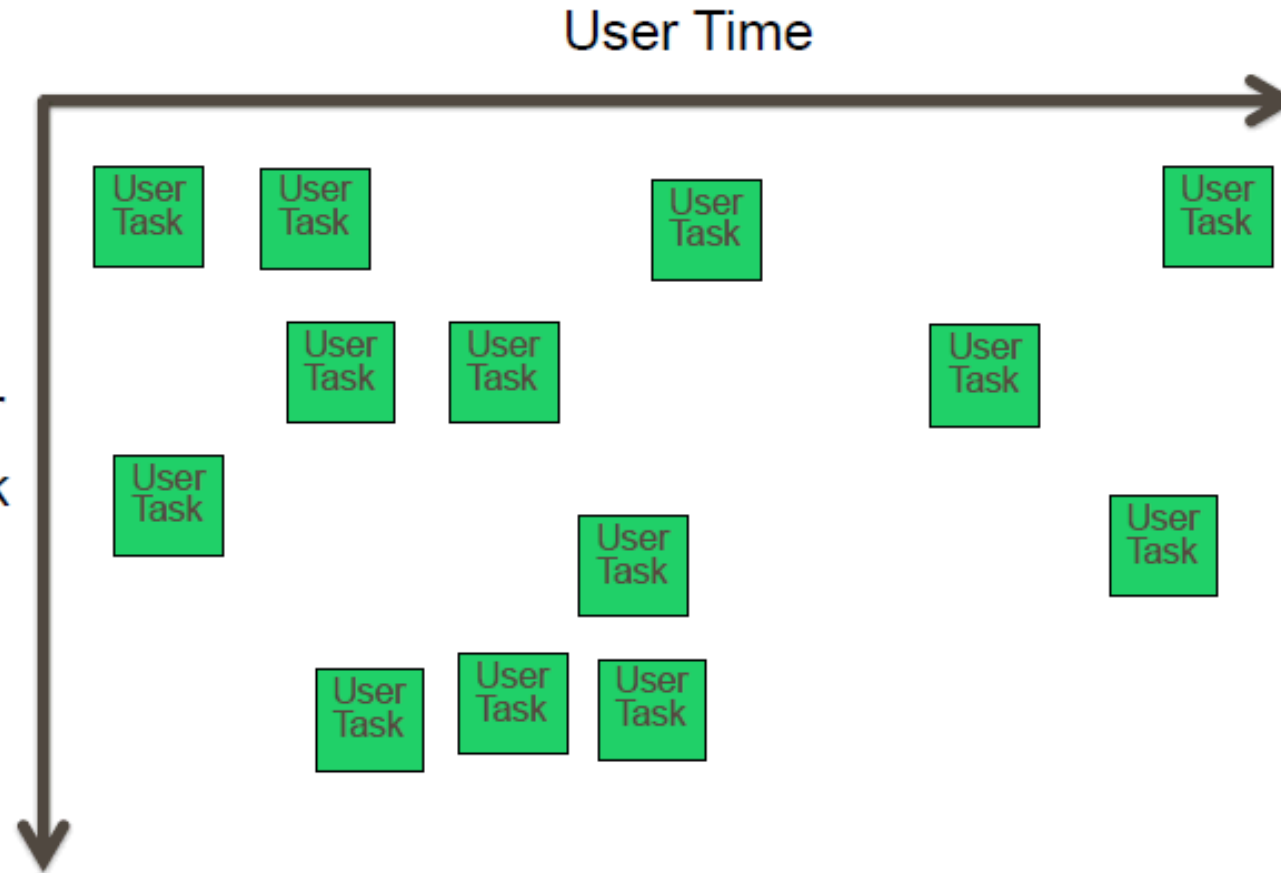


Exercise: Plot Tasks

Users tend to do the tasks on the left before the tasks on the right

Tasks at the top are easy to implement, and produce high value to the user

Bang for the Buck



LPSS Today

Read and Write in the Same Environment

CCK08 – Online Discussion

Short article making the impoirtant point that the K-12 education market is a complex array of interplaying forces, including several levels of government, corporations, lobbyists, school boards, and finally, teachers and children. If anything, I think the diagram under-represents the complexity of the market. The diagram is focused on the U.S. system but I think that the schooling system in other markets is no less complex. This diagram helps us understand why reform in education is so difficult - it means aligning a wide variety of agencies, many of which are working to serve particular outcomes and interests.

VIEW COMMENT SAVE SEND

Short article making the impoirtant point that the K-12 education market is a complex array of interplaying forces, including several levels of government, corporations, lobbyists, school boards, and finally, teachers and children. If anything, I think the diagram

Title of My Content

Font Size **B** *I* U ↶ ↷ ↵ ↶ ↷ ↵ ↶ ↷ ↵ Source ?

An edited comment

body p

TYPE SAVE PUBLISH SEND

CCK08 – Online Discussion 4:00 pm

The diagram illustrates the K12 Education Content Market. It shows a central hub labeled 'K12 Education Content Market' with arrows pointing to four main segments: Publishers, Content Providers, Content Aggregators, and End Users (Schools/Institutions). Each segment is further detailed with specific examples or roles.


LPSS

Today

Learn While Connected to a Learning Community

CCK08 – Online Discussion 4:00 pm

Short article making the impoirtant point that the K-12 education market is a complex array of interplaying forces, including several levels of government, corporations, lobbyists, school boards, and finally, teachers and children. If anything, I think the diagram under-represents the complexity of the market. The diagram is focused on the U.S. system but I think that the schooling system in other markets is no less complex. This diagram helps us understand why reform in education is so difficult - it means aligning a wide variety of agencies, many of which are working to serve particular outcomes and interests.



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Vladimir Putin
President

Barack Obama
President

Xi Jinping
General Secretary, Communist Party

Pope Francis
Pope

Angela Merkel
Chancellor

Bill Gates
Co-Chair

Ben Bernanke
Chairman, Federal Reserve

Abdullah bin Abdul Aziz Al Saud
King

Mario Draghi
President

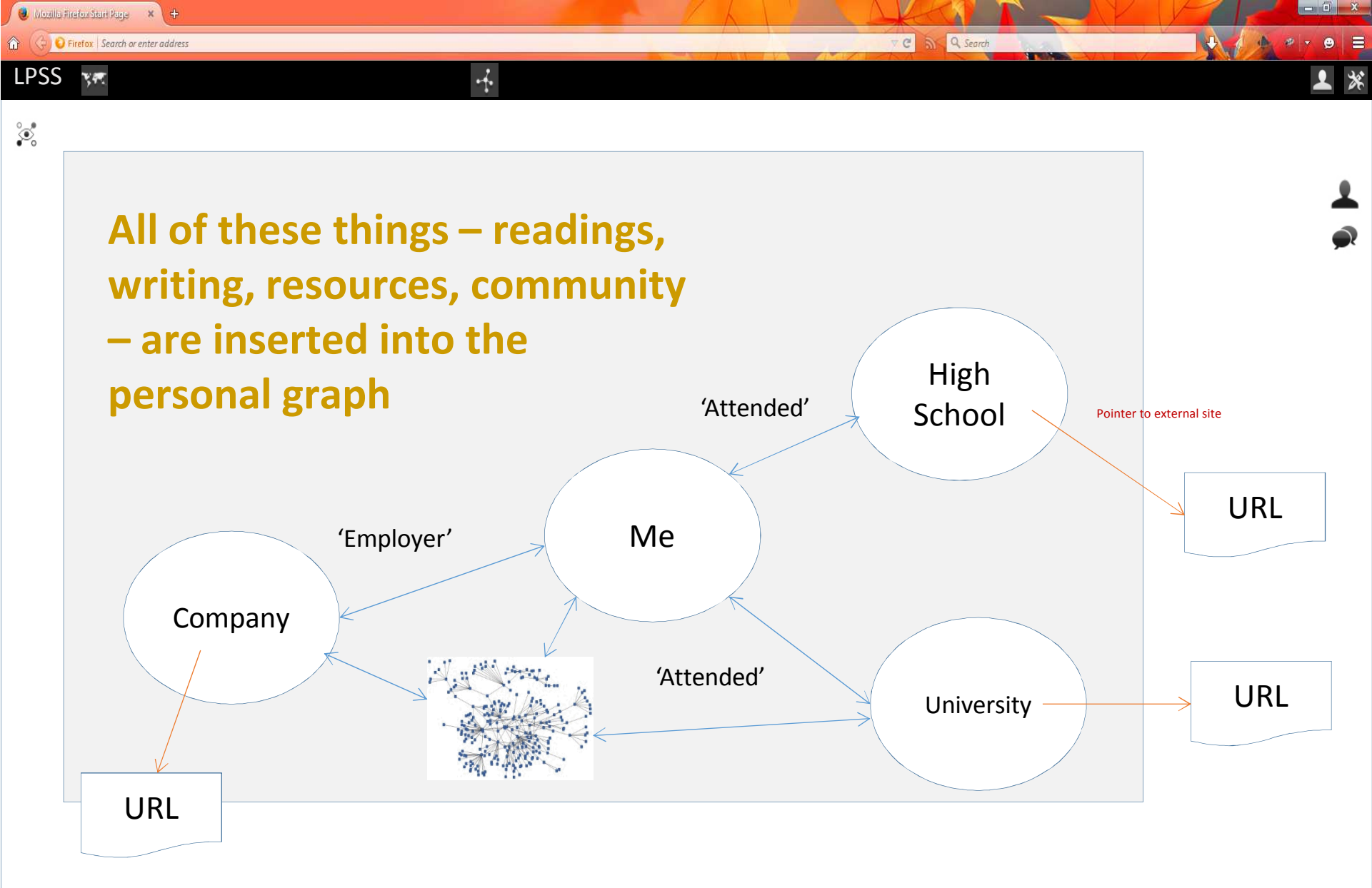
Michael Duke

ADD NEW

2019-07-22

Stephen Downes - LPSS - Protected B

48



LPSS Today

LPSS detects the current environment, and helps the user focus on competencies or topics

Contexts

CCK08 Online Discussion
Vladimir S Putin
Today

CREATE NEW CONTEXT

Focus

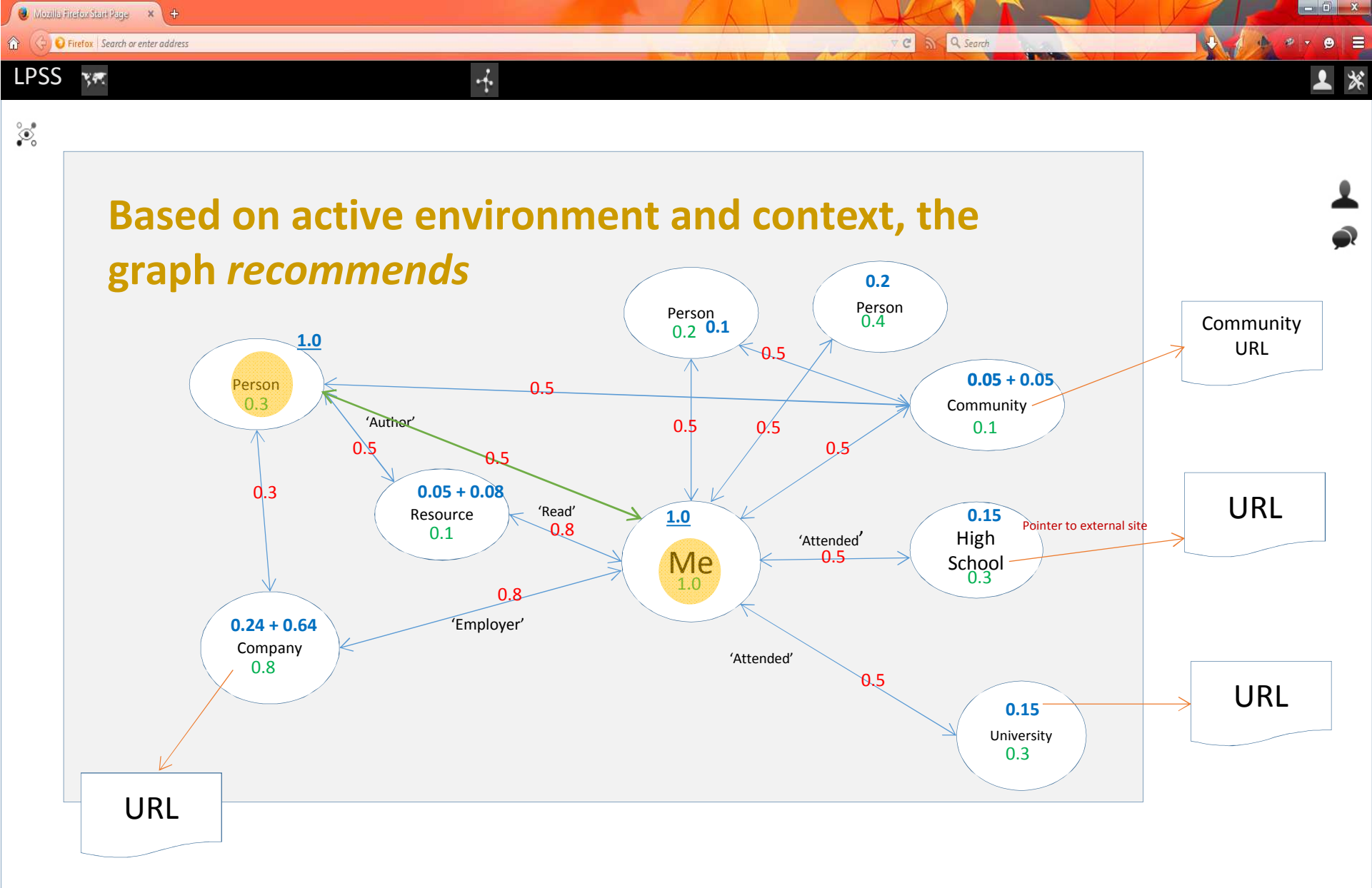
- Goal: HR Job
- Competencies: Phone
- Topics: Algebra
- Sentiments: Warm
- Tools: Dictaphone
- ...?

CREATE NEW FOCUS

Topics

- Art ✖
- Algebra ✖
- Calculus ✖
- Computing ✖
- ...?

CREATE NEW TOPIC



LPSS

Today

LPSS

Open Education and Personal Learning

Type

Event

Title

Date

Slides

Audio

Video

Location

Org.

Microsoft PowerPoint Setup

LPSS

Welcome to the LPSS for Microsoft PowerPoint Setup Wizard

This wizard will guide you through the installation of VisualBee for Microsoft PowerPoint.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

Inside your PowerPoint!

Home VisualBee

Enhance

Library

Ab...

Next >

Cancel

SEND



Stephen Downes

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