

Campus Technology Workshop

August 1, 2016

Developing a Personal Learning Infrastructure



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

8:00 – 8:30	Introductions and Aliases
8:30 – 9:00	What is a PLE?
9:00 – 9:45	Value Proposition Workshop
9:45 – 10:00	Break
10:00 – 11:30	Elements of the PLE
11:30 – 12:00	Roles and Tasks Workshop

- 13:00 – 13:30 Underlying Technologies
- 13:30 – 14:00 Task Priorization Exercise
- 14:30 - 14:45 Break
- 14:45 – 16:00 Building the PLE environment
with knowledge of e-learning interoperability technologies,
we will ‘moot’ a PLE infrastructure

Introductions and Aliases

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:

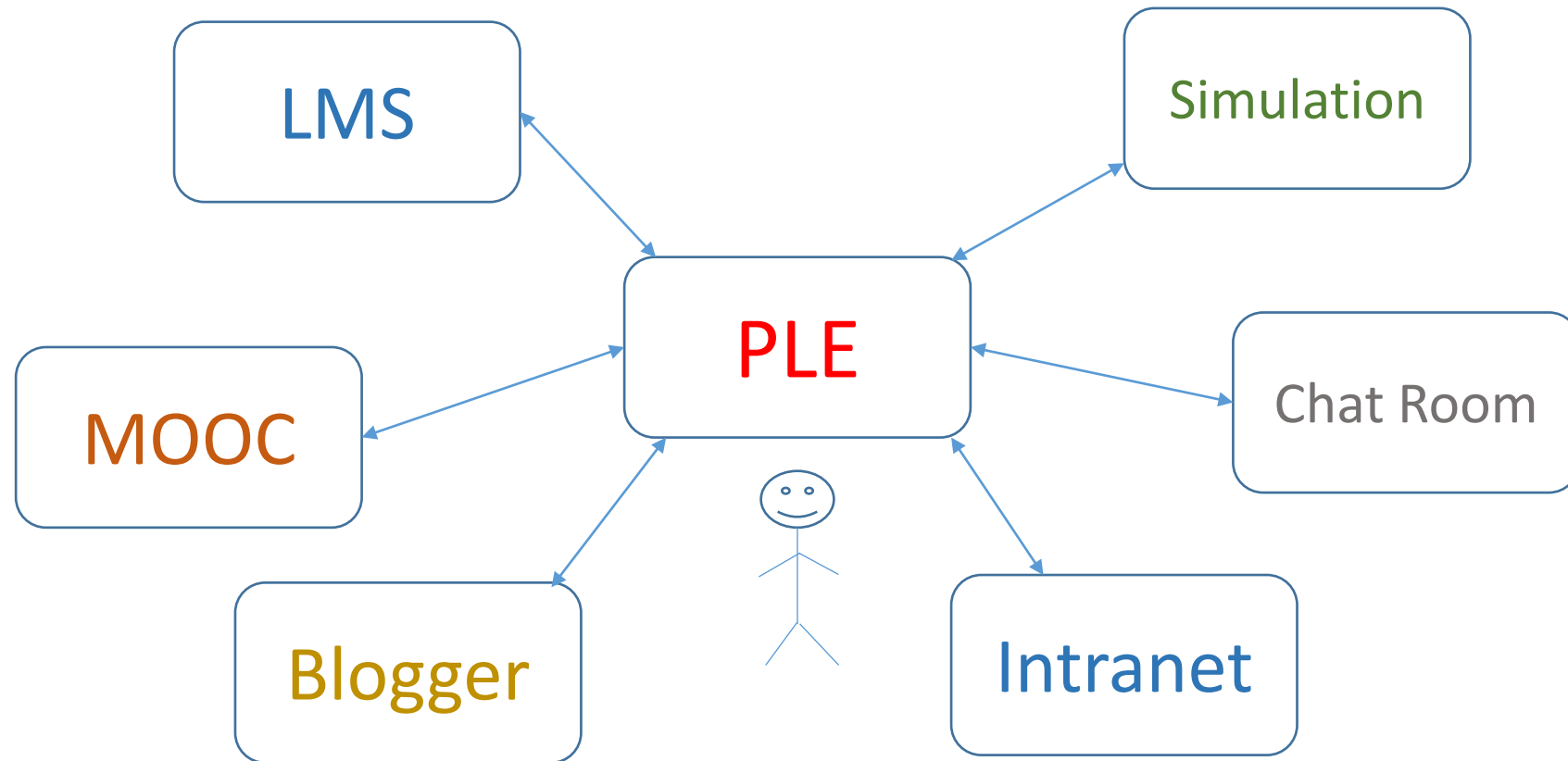
- What's the best business model?
- How can it address client needs?
- Where are the best channels to market it?

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?

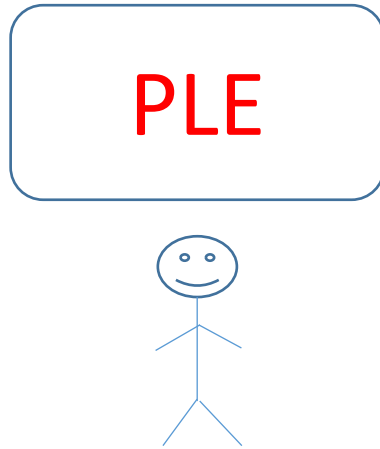
What is a PLE?

Overview of the Concept of PLEs



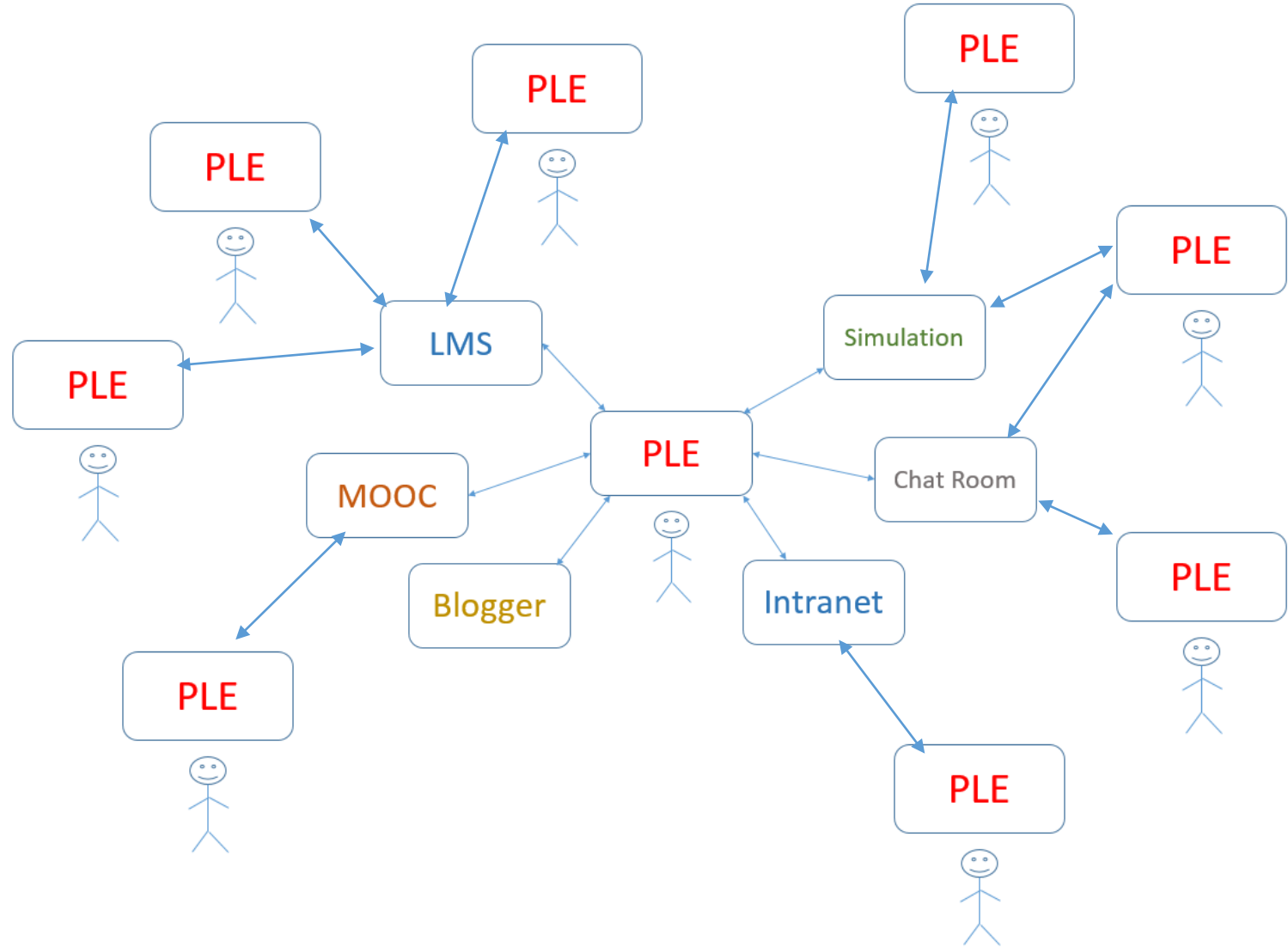
Access to many services in one personal environment

Properties of the PLE...

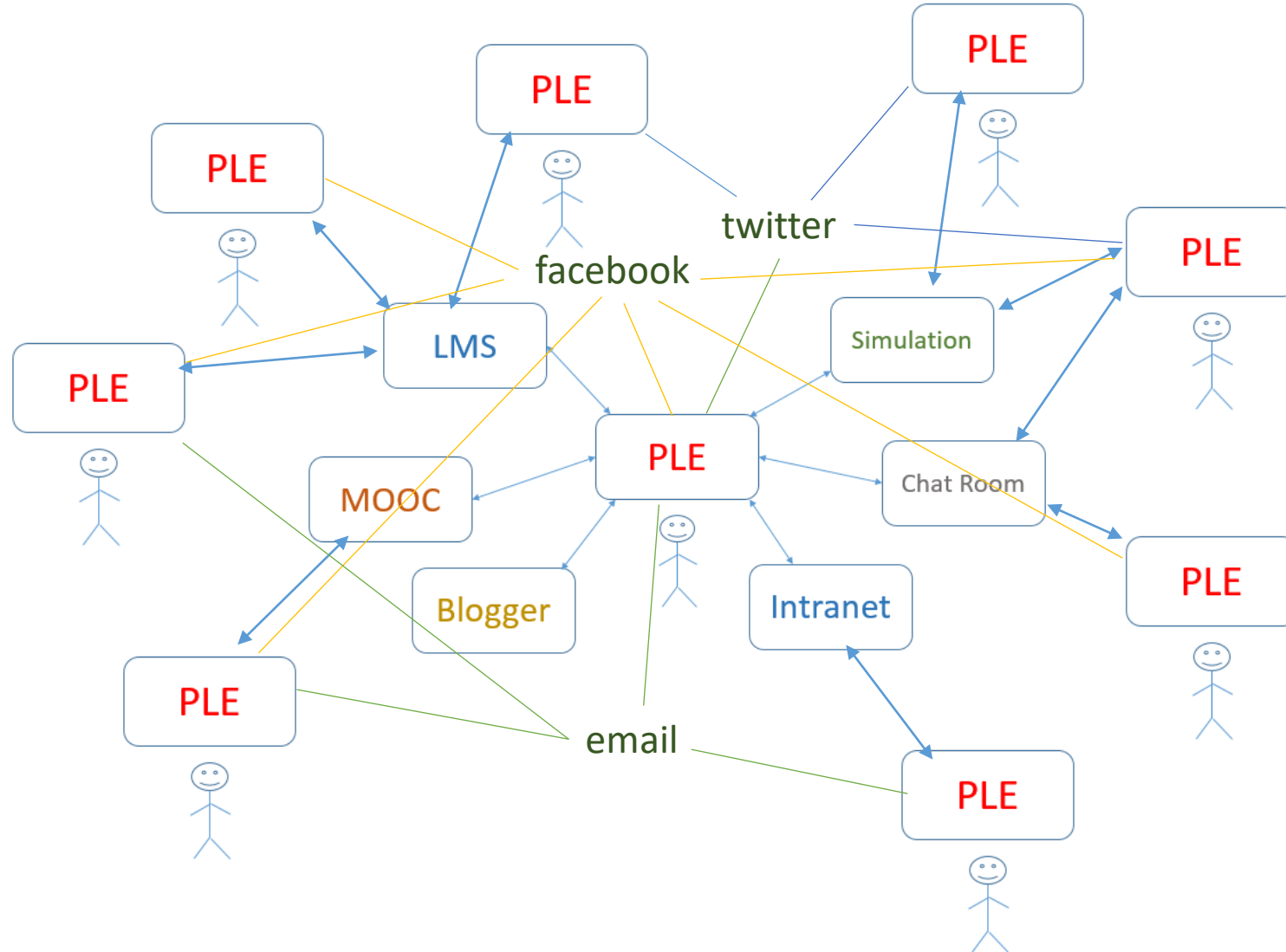


- What information should it record?
- Who owns the data? How private is it?
- What should it *do*?
- What would a person do with it?
- Where, exactly, is a PLE located?

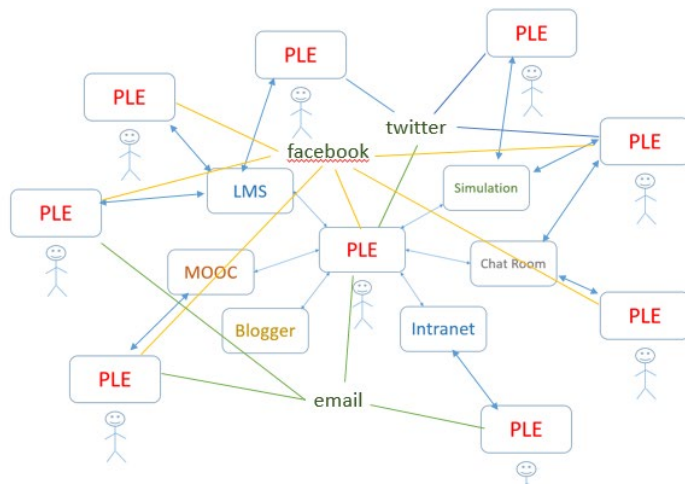
The Network of PLEs



The Social Network of PLEs



Properties of the Network...

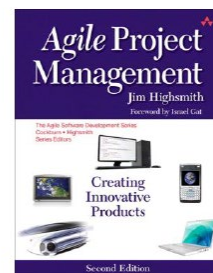
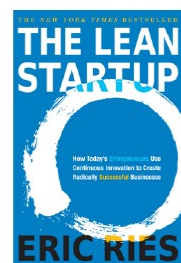
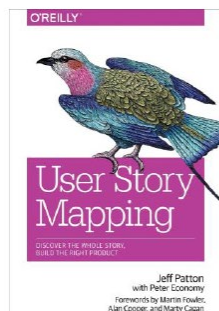


- How do people find each other? Services?
- How do they communicate? What do they share?
- How does a single PLE work with services?
- Do we need centralized registries?

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



Value Proposition Workshop

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....

The Value Proposition...

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

The Value Proposition...

For:	Commuters
Who need:	To get to work quickly
The product is:	A flying car
That:	Allows them to get past traffic jams
Unlike:	Other cars
It allows the user to:	fly

The Value Proposition...

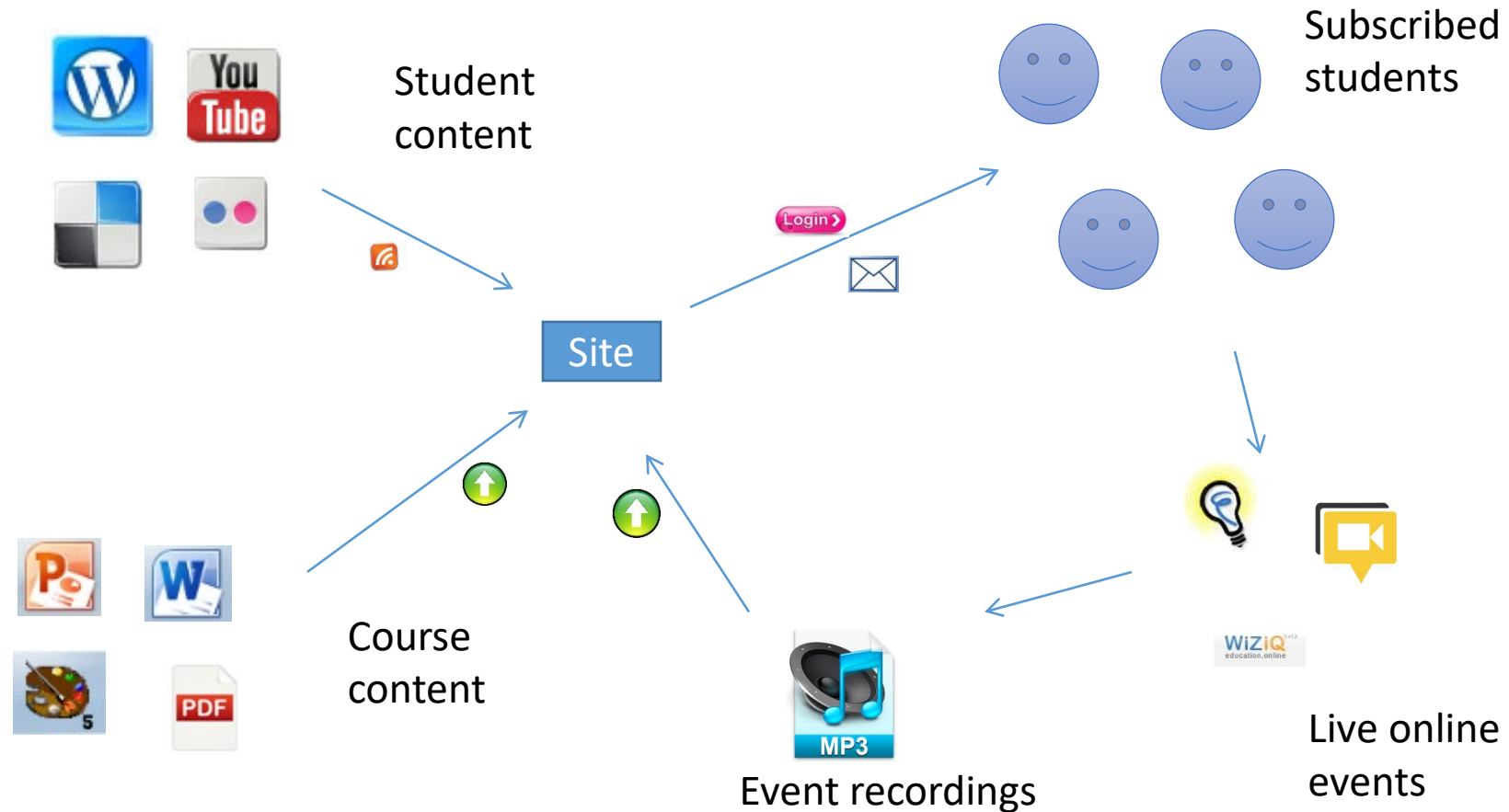
For:	Salespeople
Who need:	To keep up to date with clients
The product is:	A client relationship system
That:	Keeps records of client interactions
Unlike:	Other client relationship systems
It allows the user to:	Show recent events when a new call comes in

Value Proposition Workshop

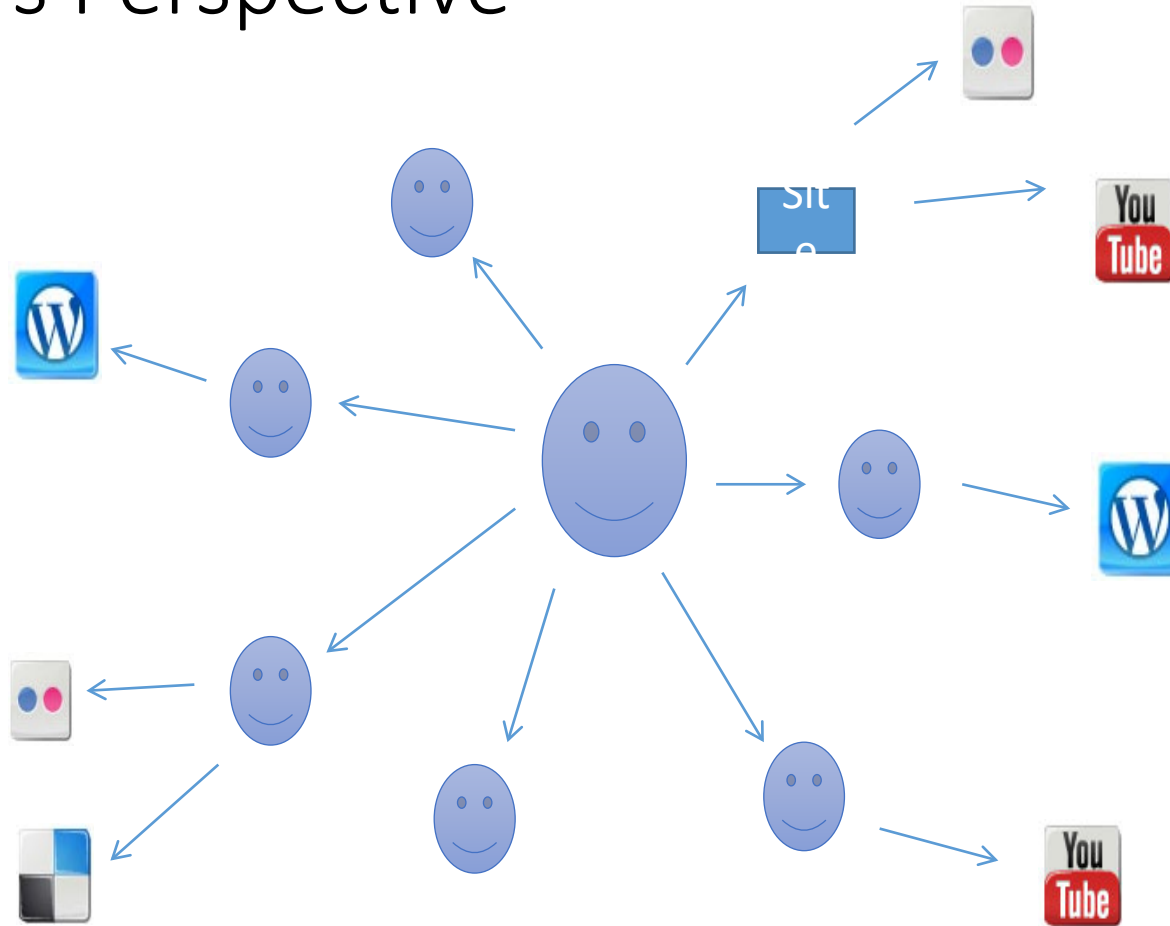
- Five new groups, each with a:
 - User
 - Sponsor
 - Developer
 - Marketer
 - Operator
- Draft value propositions and record them

Elements of the PLE

Course Provider Perspective

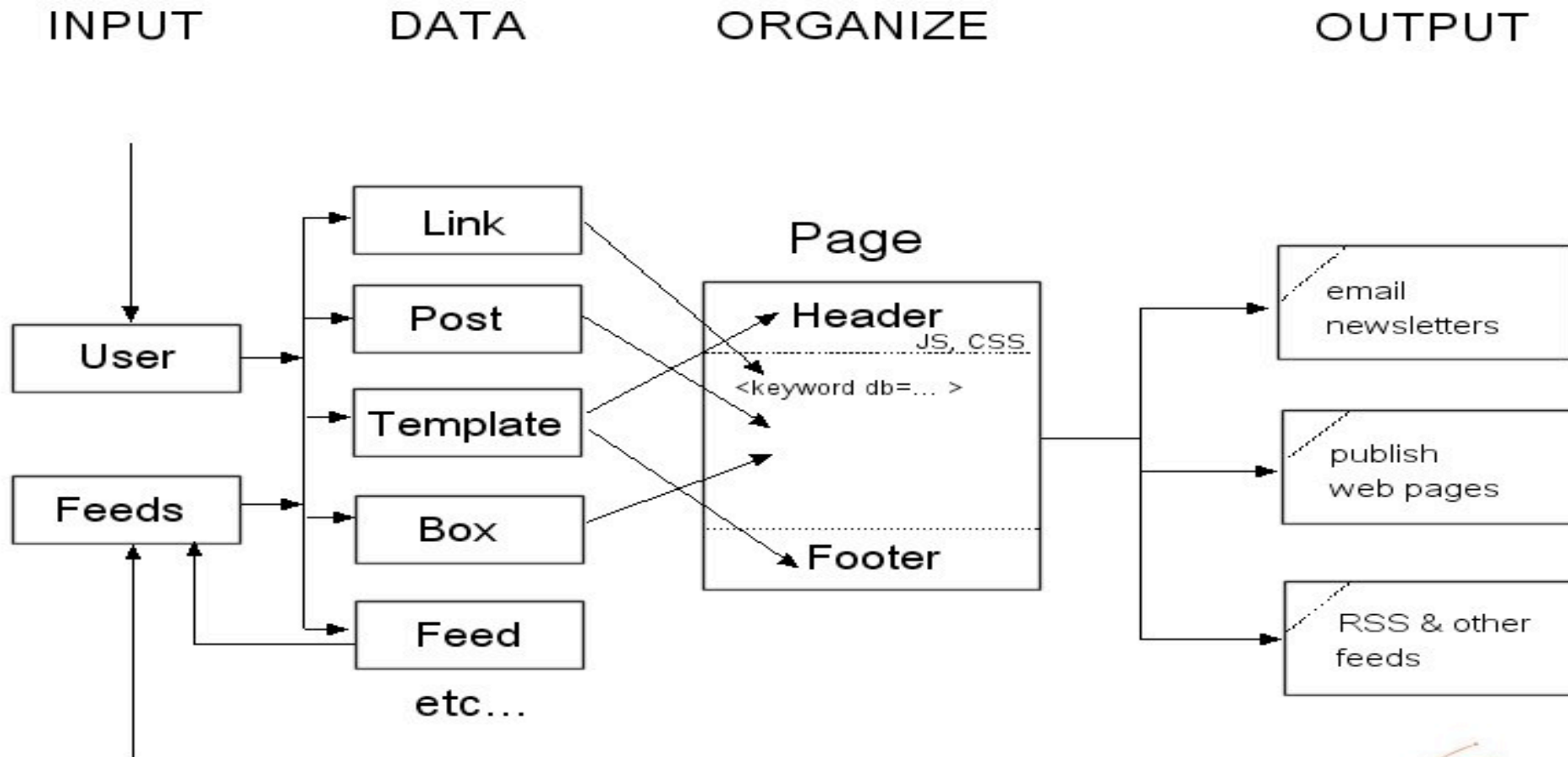


The Student's Perspective

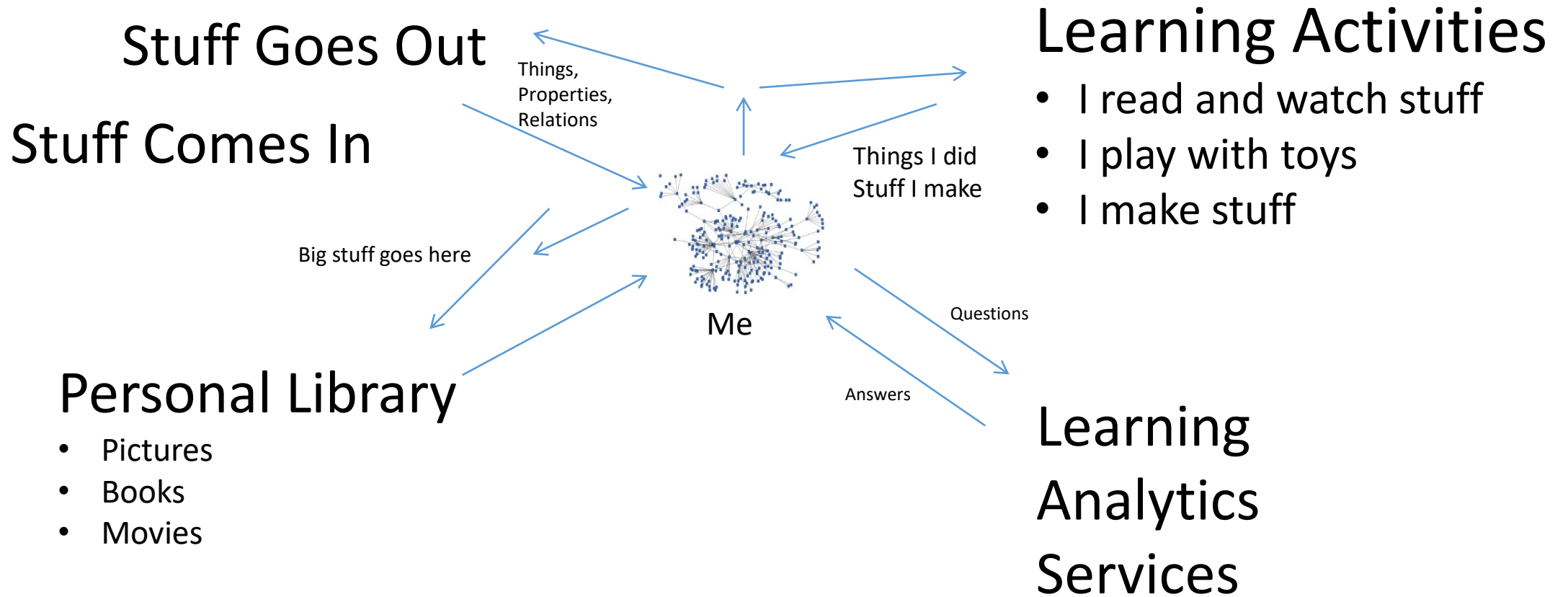


A range of different resources and services

gRSShopper



Built Around the Personal Learning Record



Roles and Tasks Workshop

What Tasks Will Users Perform?

- Roles... what *role or function* will the PLE serve?
 - What are the *metrics* that will measure this role
- One you have found measurable roles, list them
- Then ask: what *tasks* must the PLE perform to fulfill this role

What Role Does a PLE Fulfil?

As many roles as you want

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

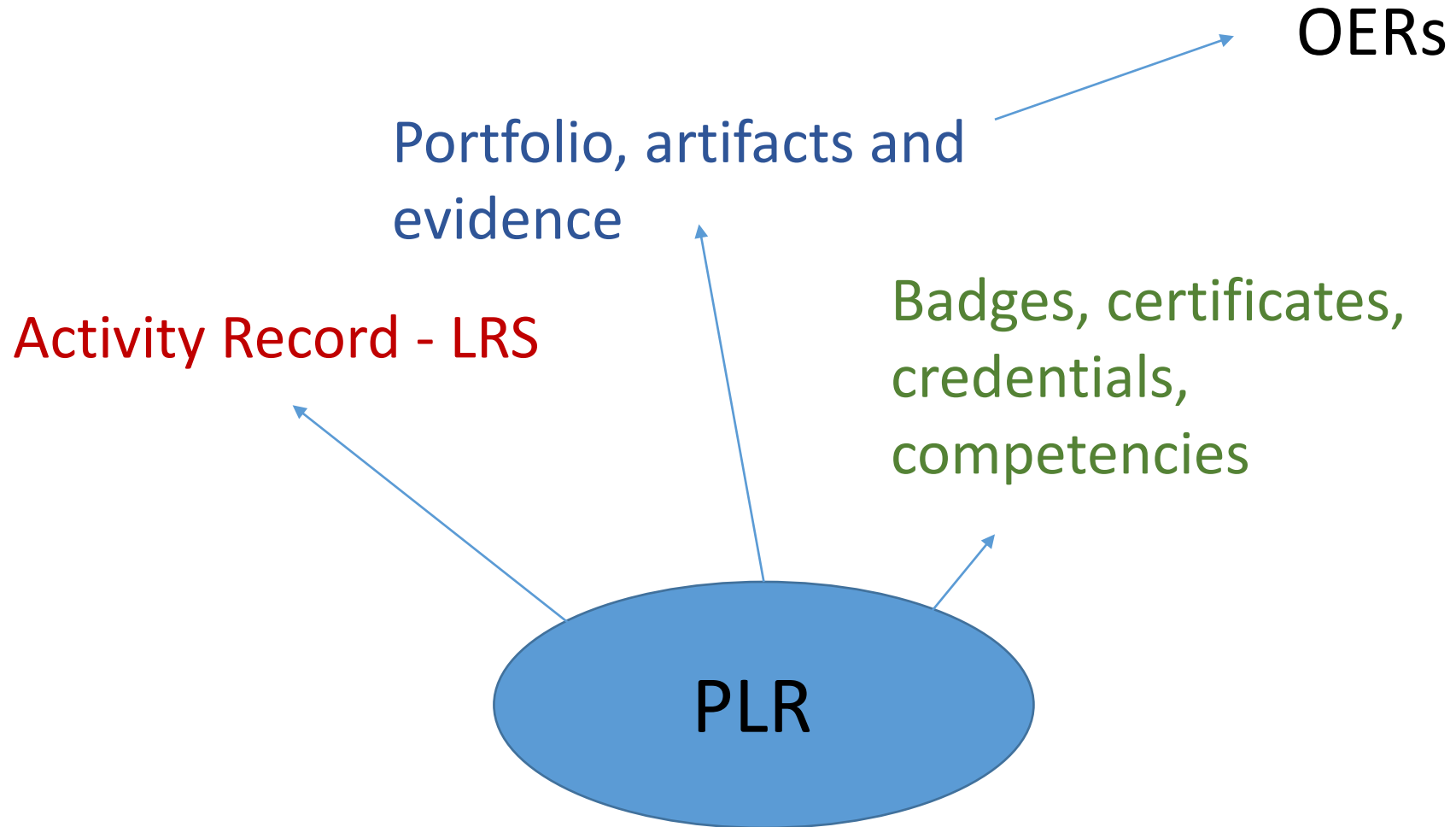
What Tasks Will Users Perform?

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

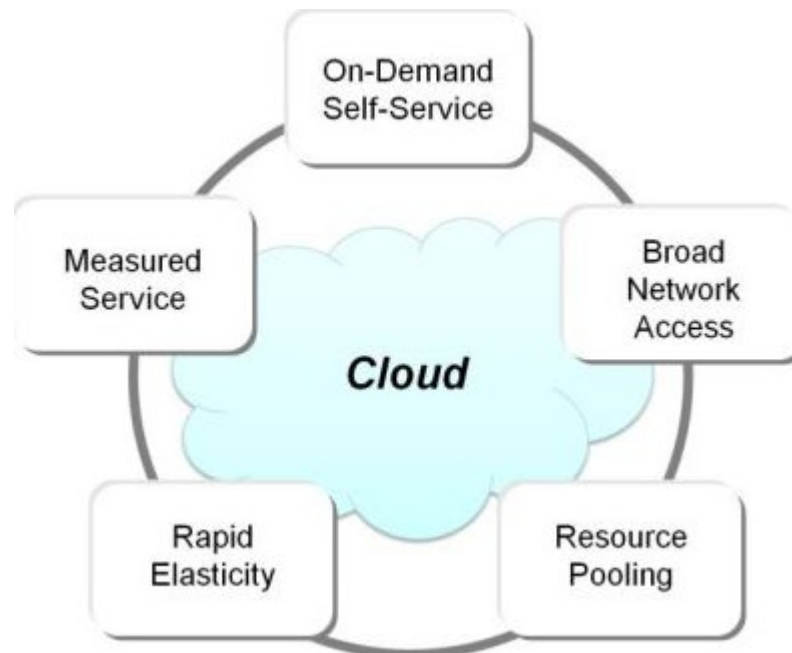
Underlying Technologies

Personal Learning Record

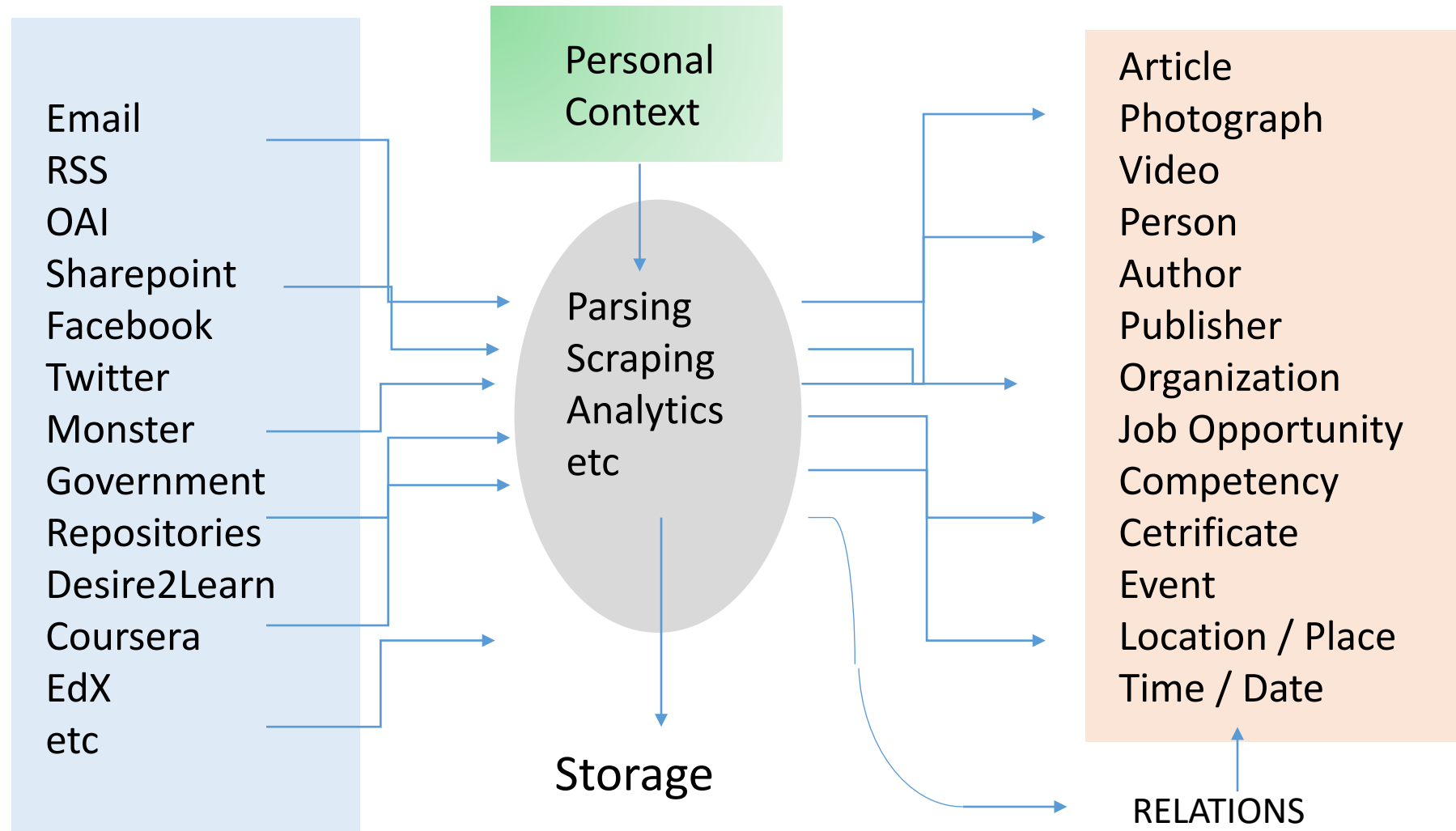


Core interaction elements in cloud technologies

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

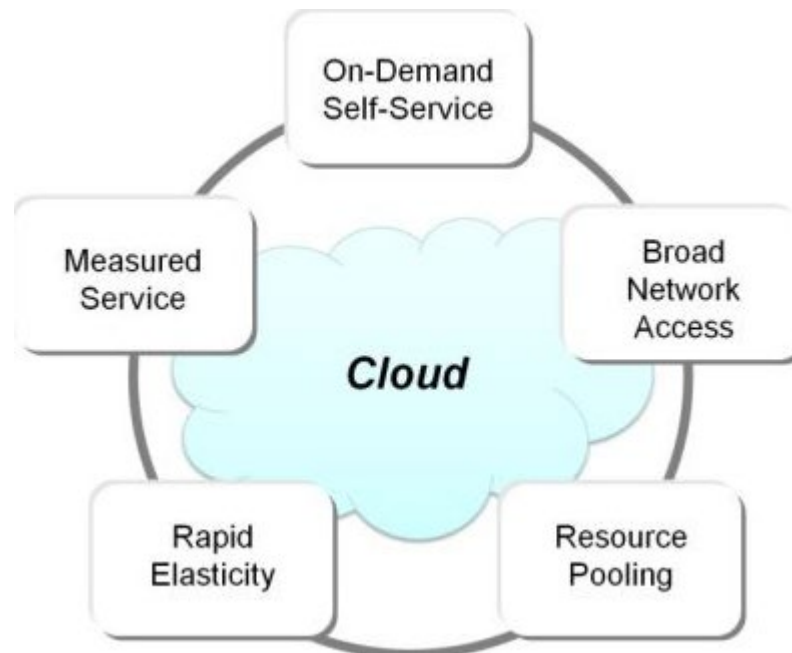


RRN Aggregation and Storage

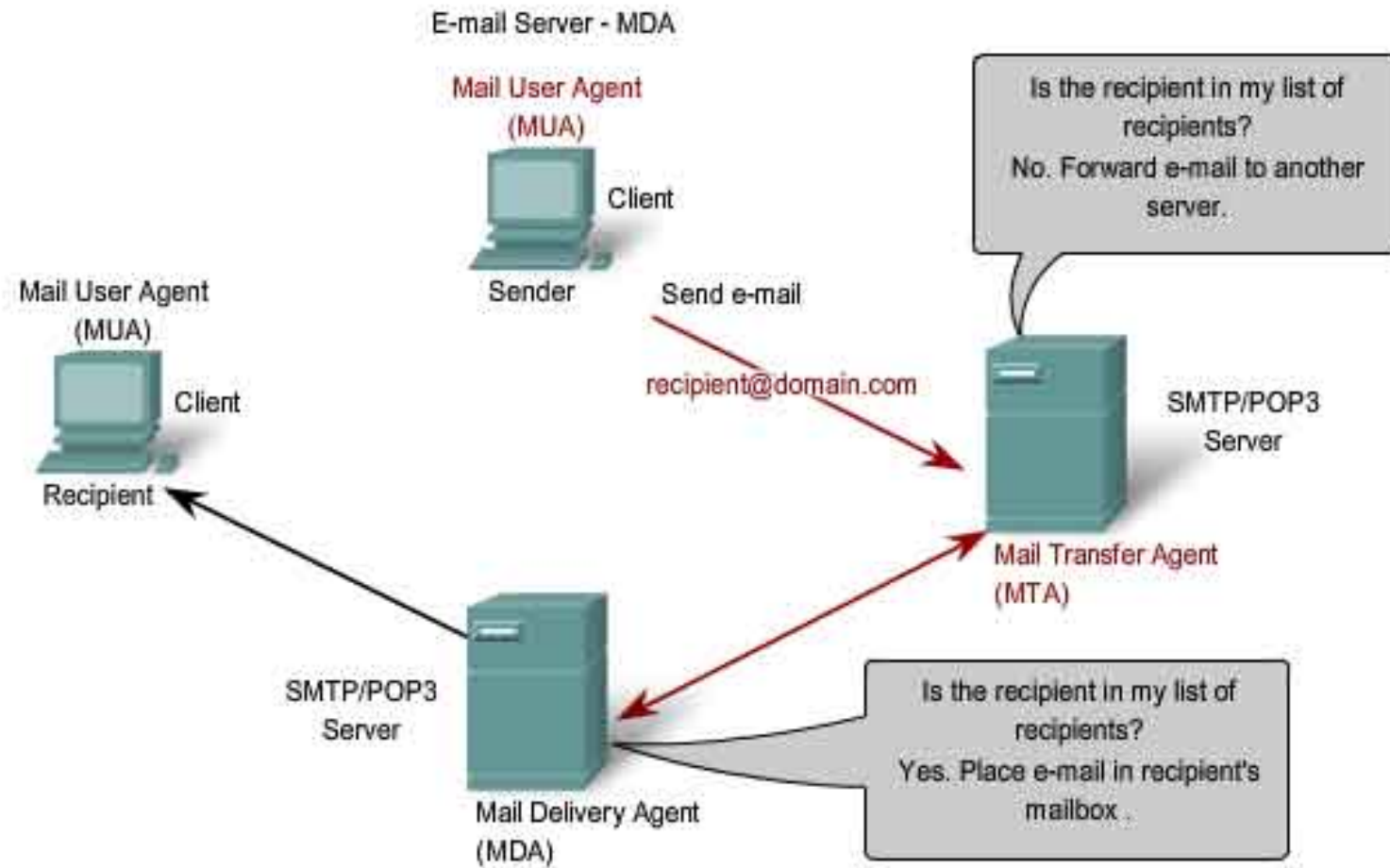


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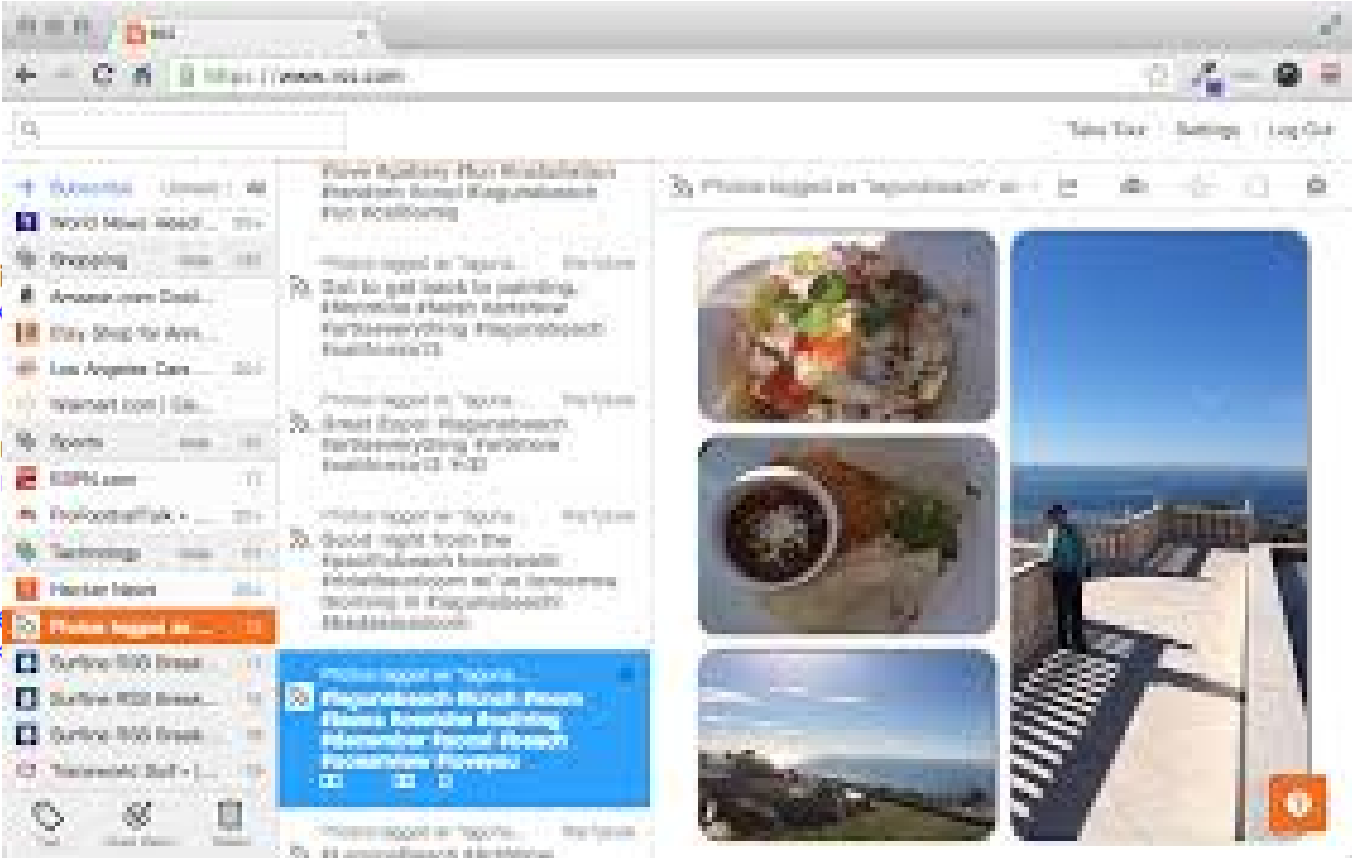


Email – POP, IMAP, SMTP



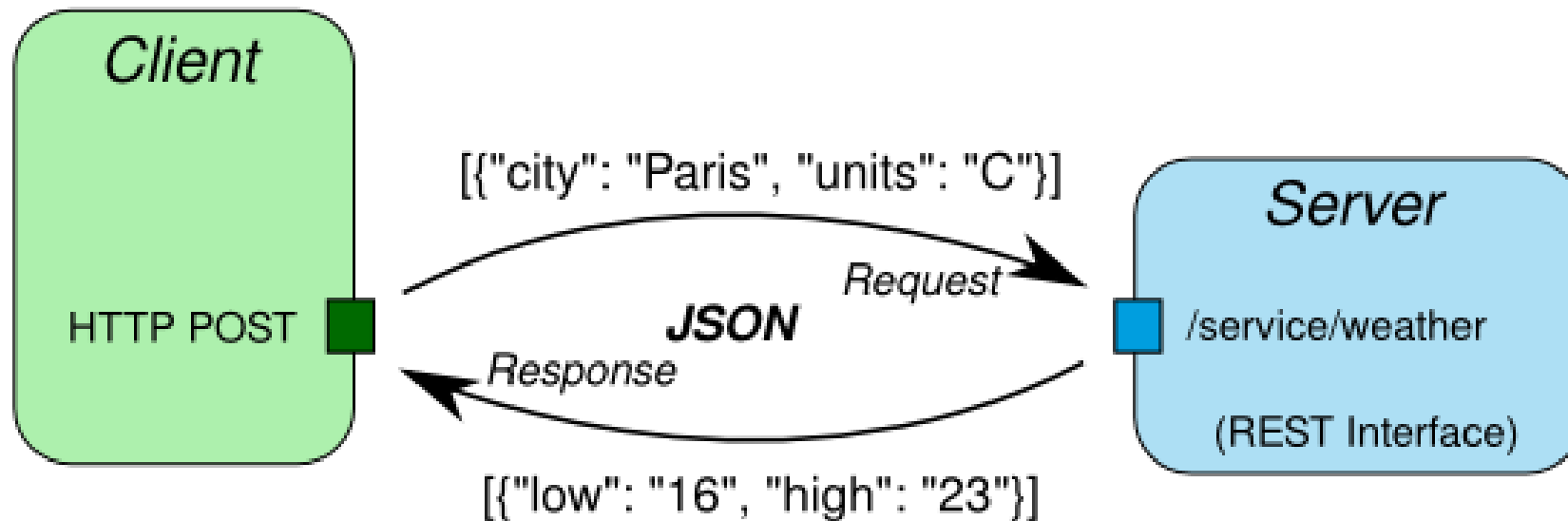
RSS

```
<?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>
```

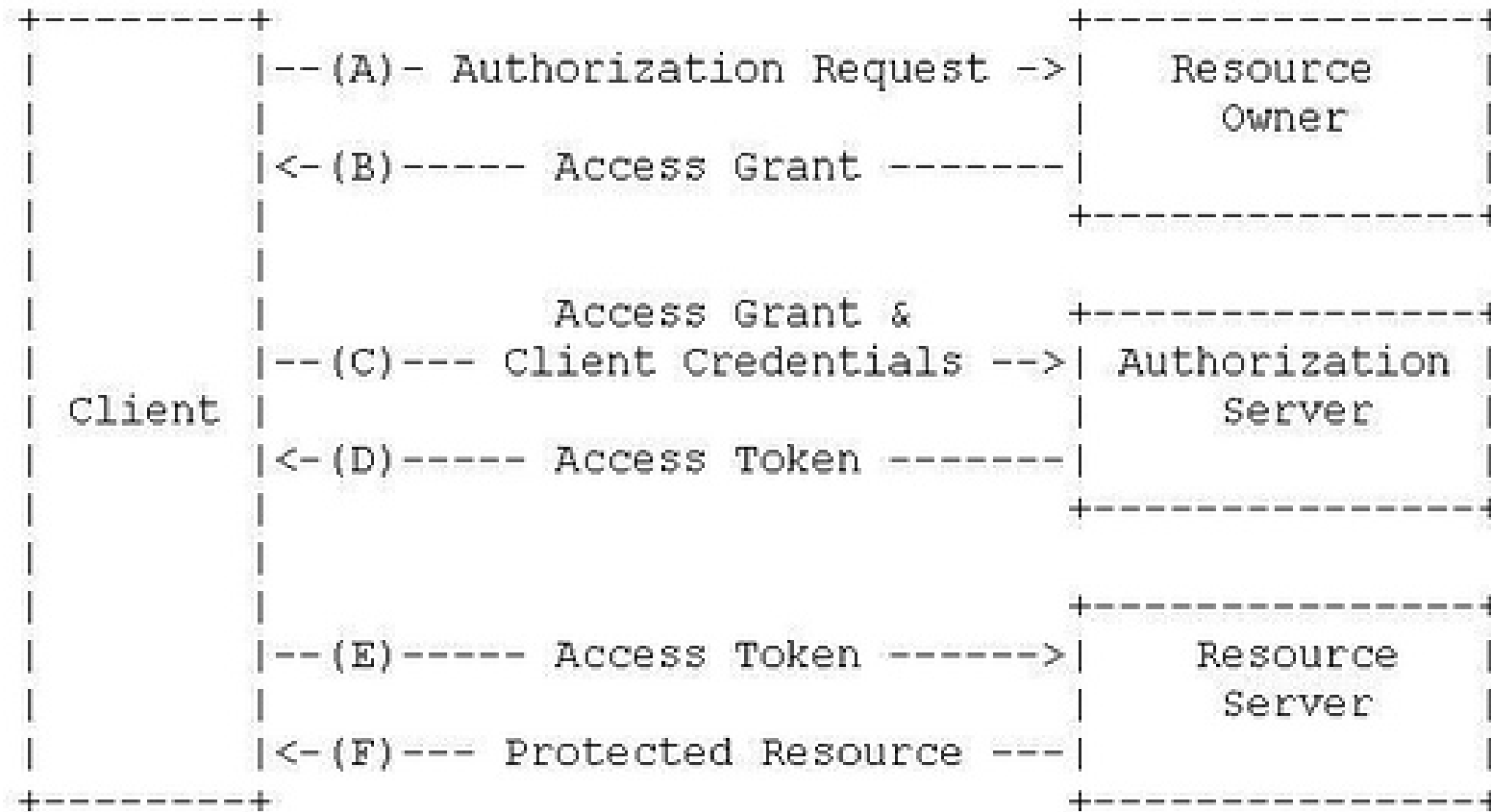


API / REST / JSON

JSON / REST / HTTP

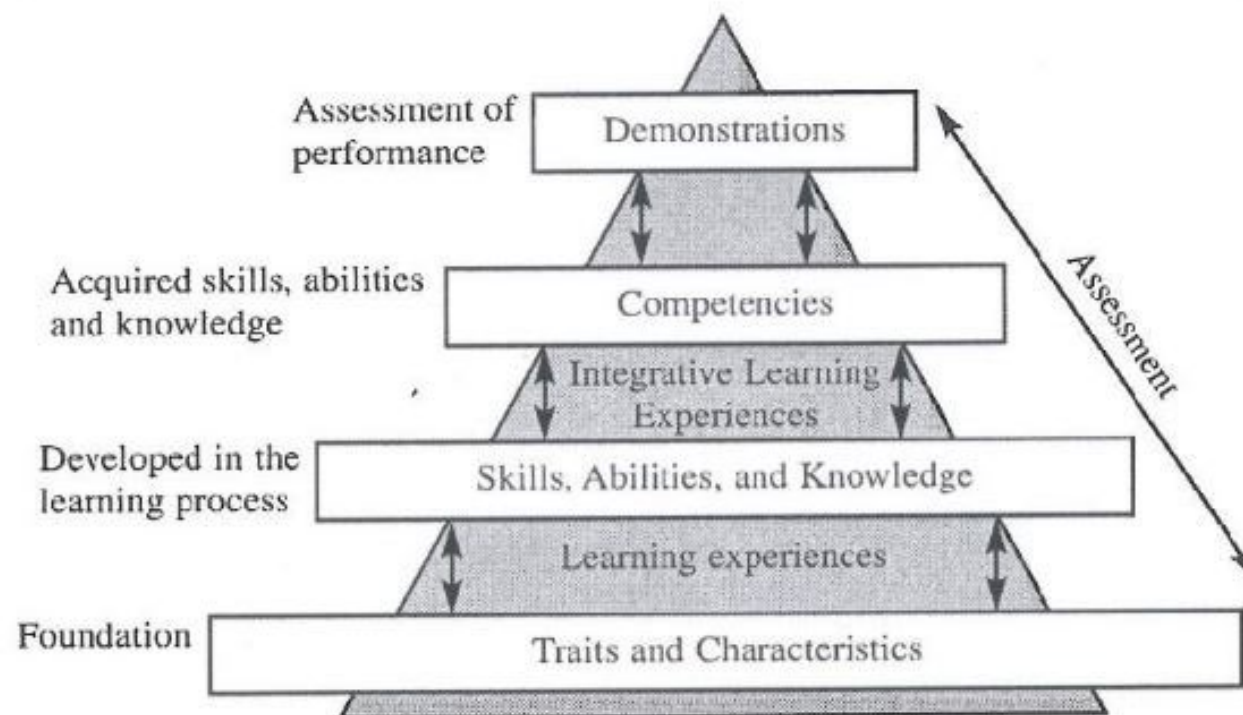


OAuth



Underlying common e-learning technologies

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



Learning Resources – LOM, Packaging

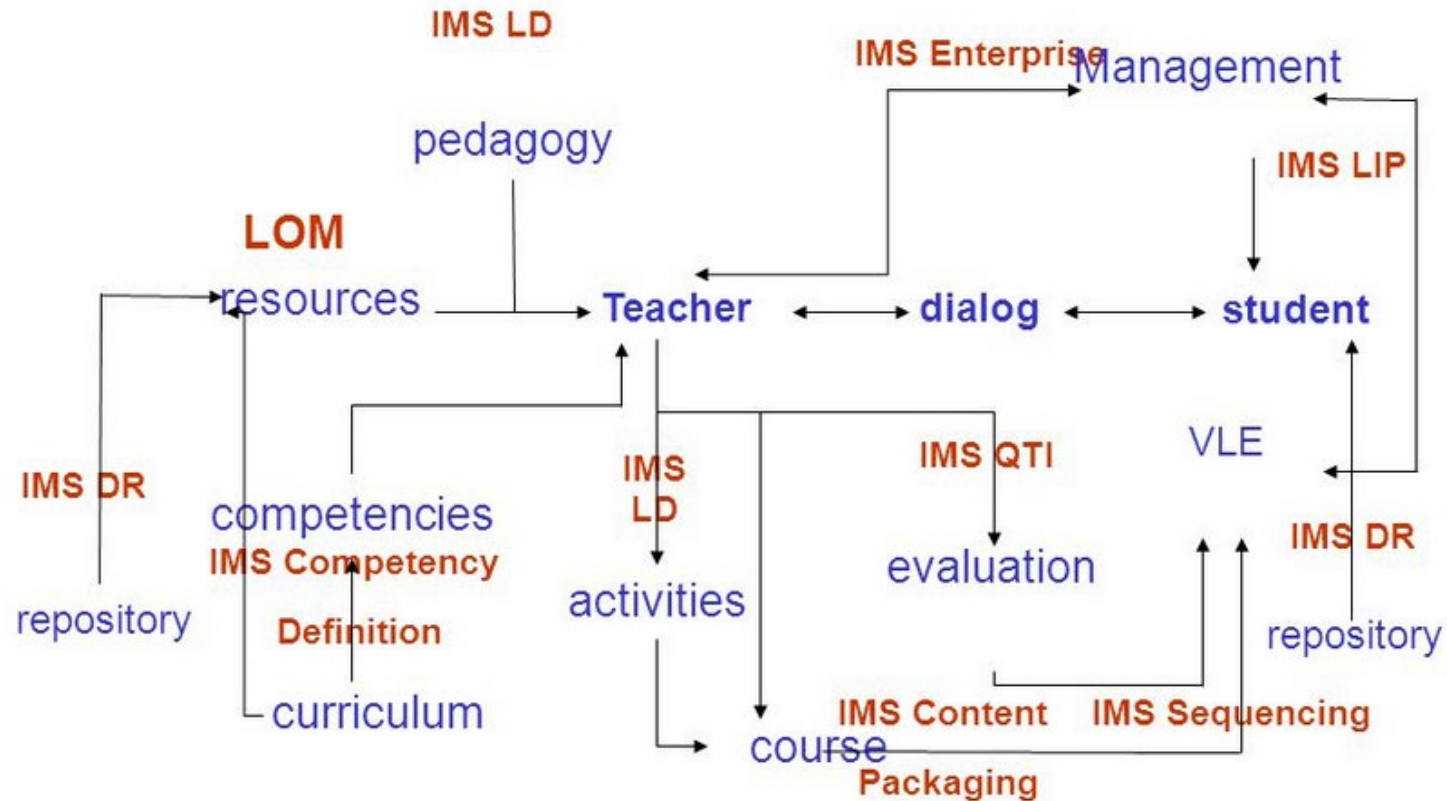
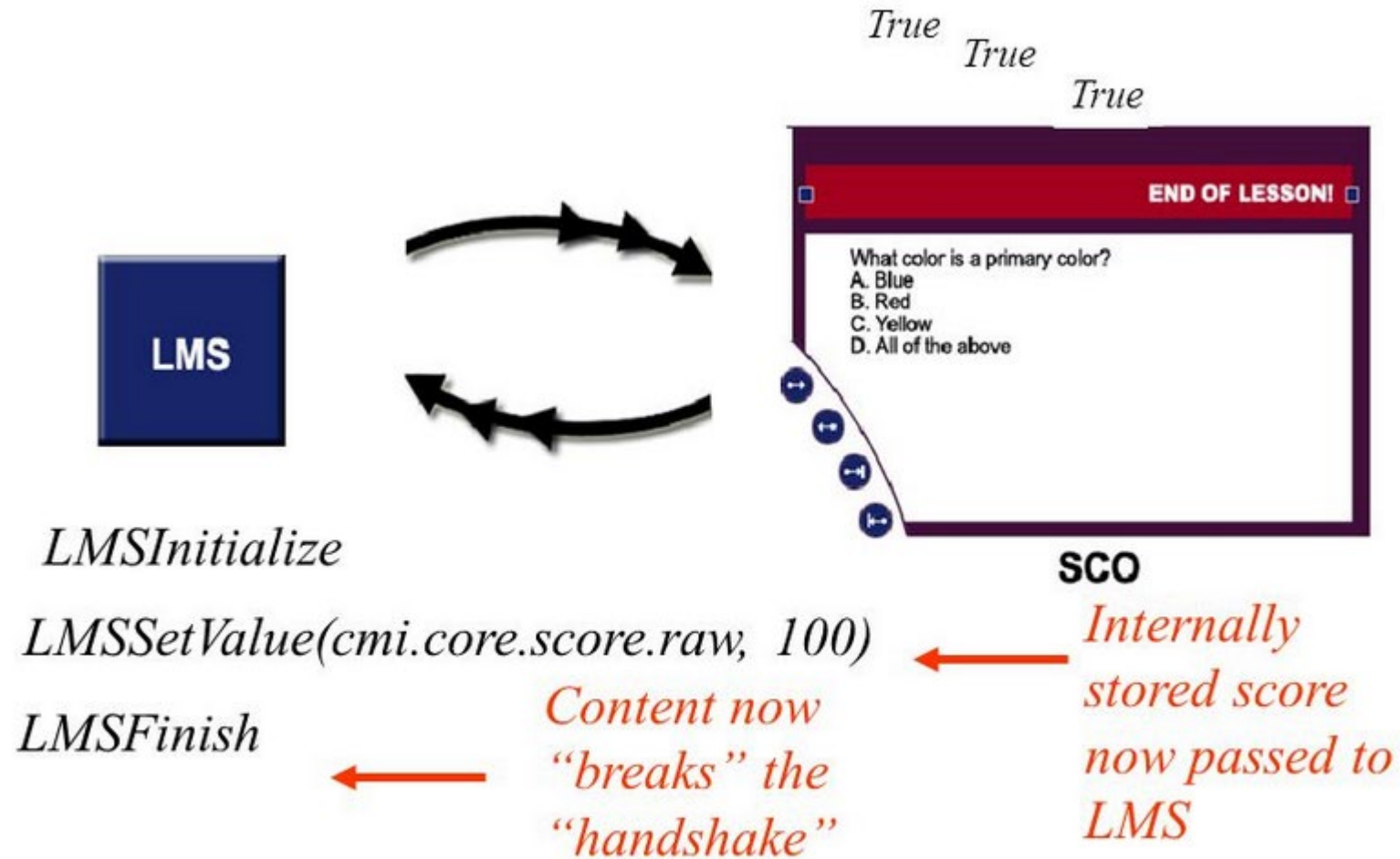
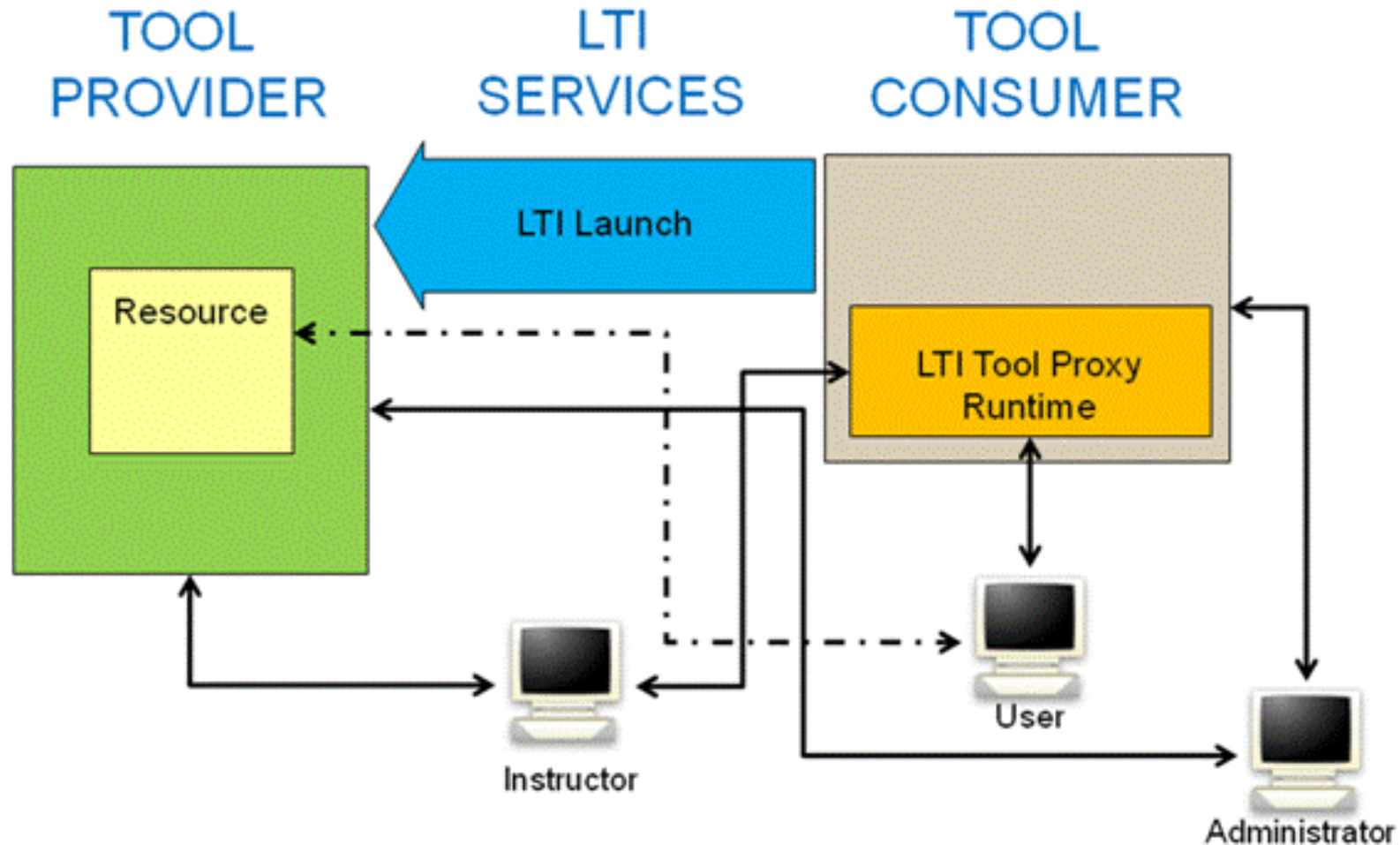


Diagrama original de C. Duncan

Resources – SCORM Run Time Environment



IMS Learning Tools Interoperability (LTI)



<https://www.imsglobal.org/specs/litv1p1/implementation-guide>

The eXperience API

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

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

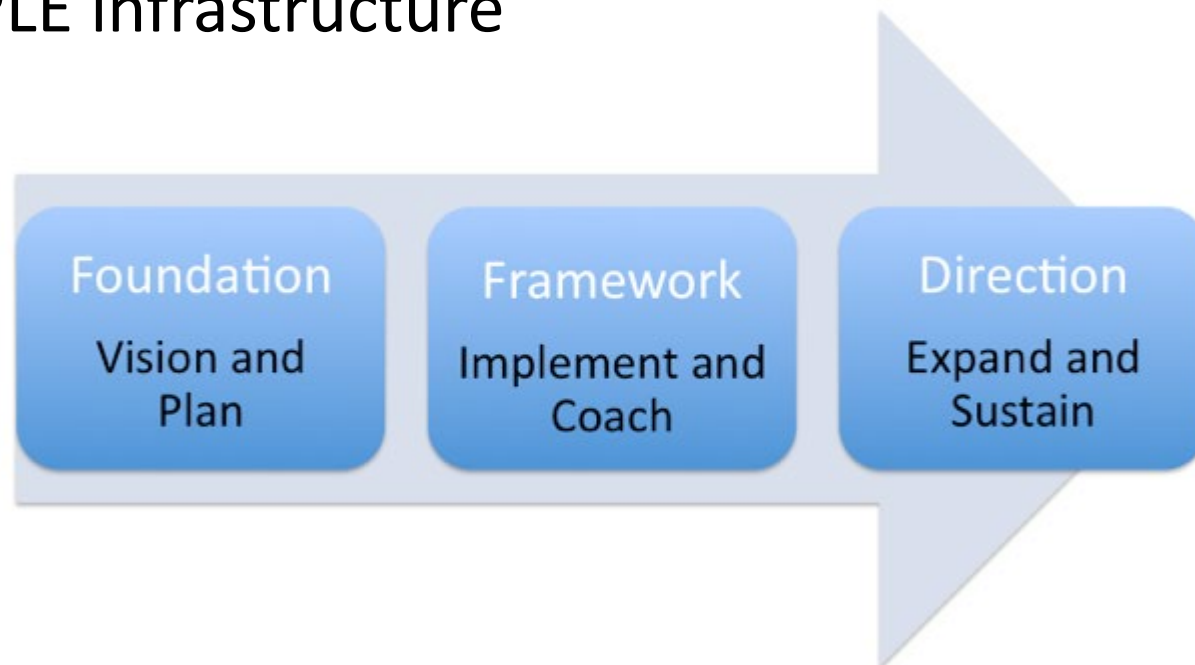
Task Prioritization Exercise

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

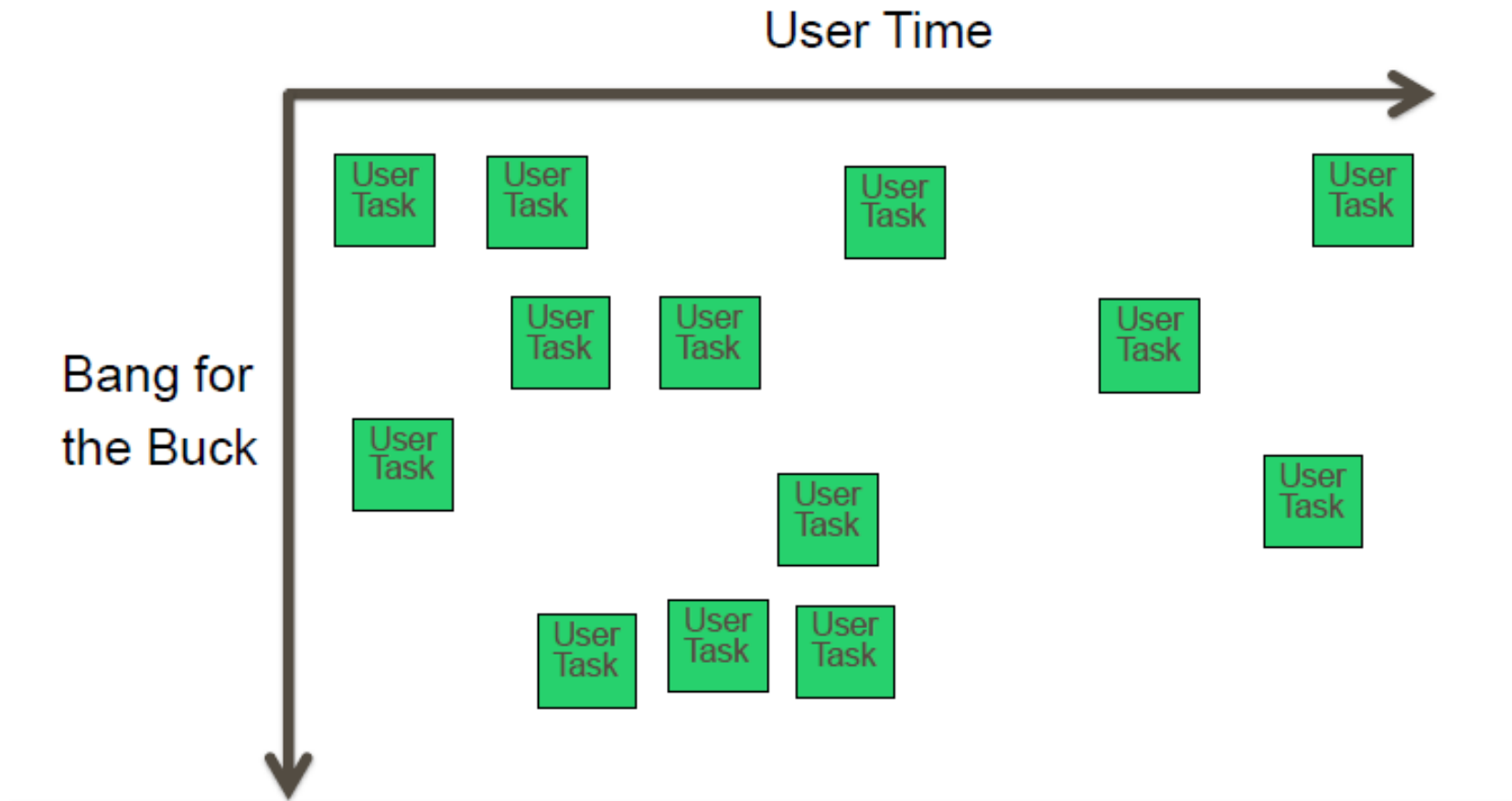
Building the PLE environment

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



Building the PLE environment

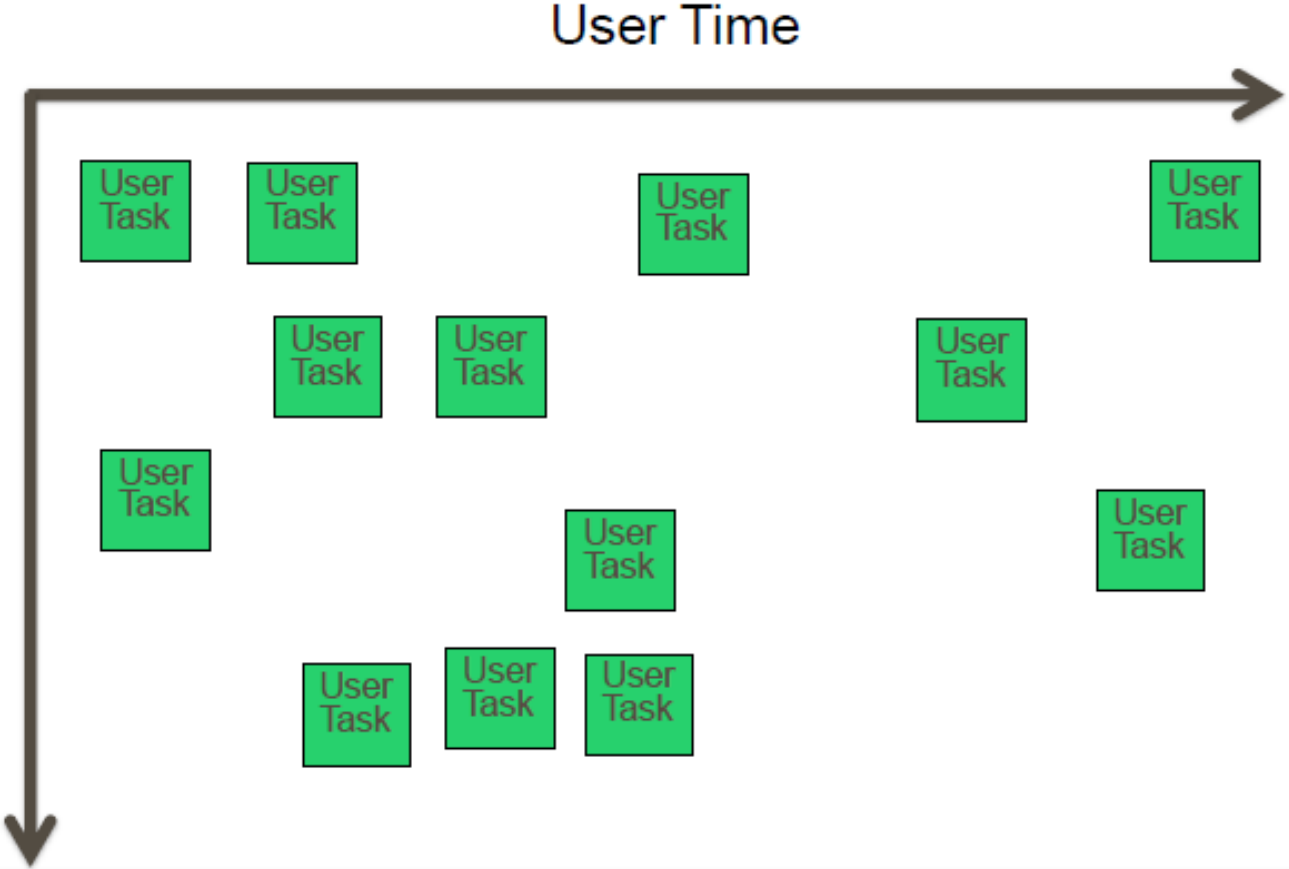
Exercise: Plot Tasks



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, Bang for the Buck and produce high value to the user



Results



Stephen Downes

<http://www.downes.ca>