Connectivism:
A Theory of Personal Learning

Stephen Downes

December 3, 2008

What Carleton Means To Me

What is my personal learning environment?
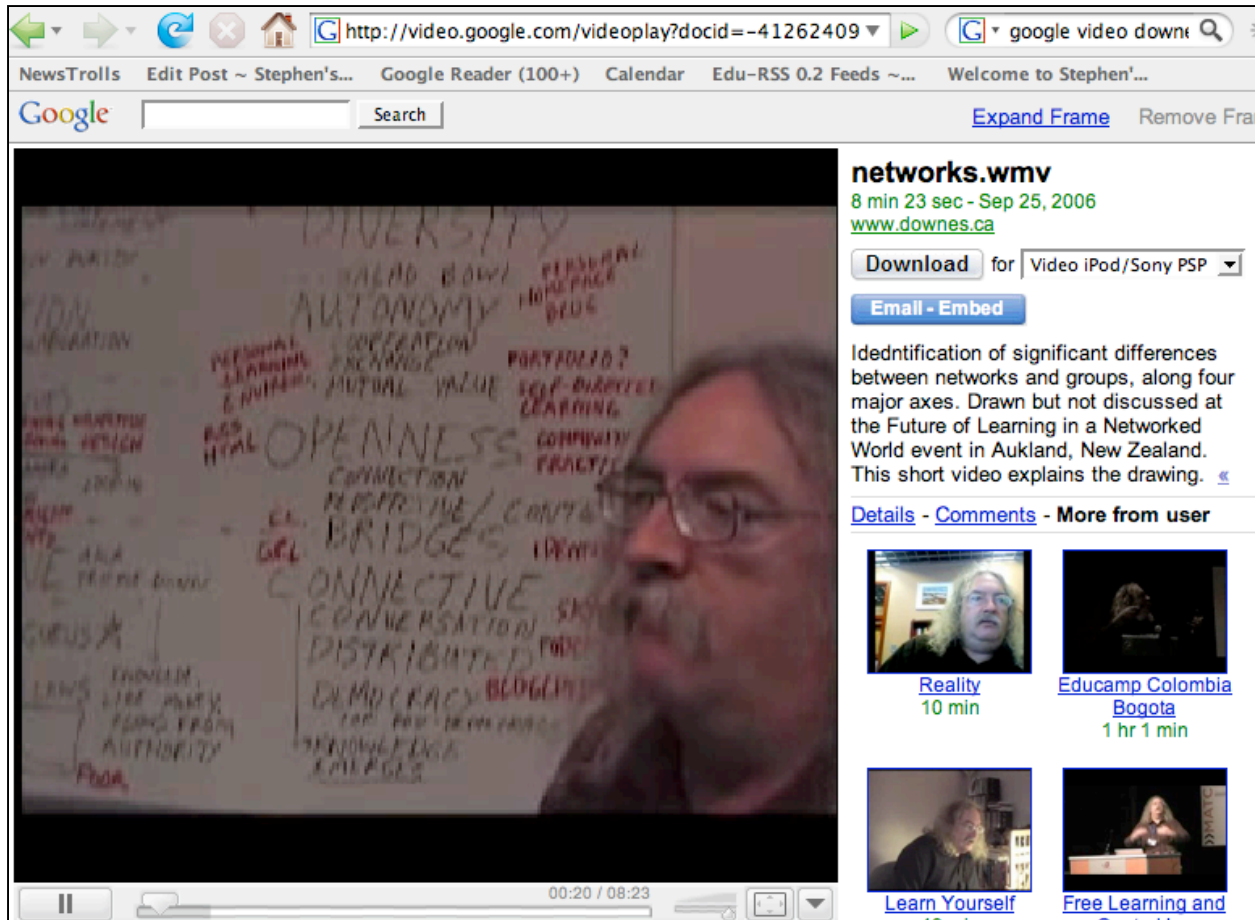
- A place to store (and share) my photos

http://www.flickr.com

- A place to store (and share) my videos

http://video.google.com/videoplay?docid=-4126240905912531540

- A place to write an essay with my colleague in Montreal

http://docs.google.com

- # A way to stay up to date - *right up to date*

http://www.google.com/reader
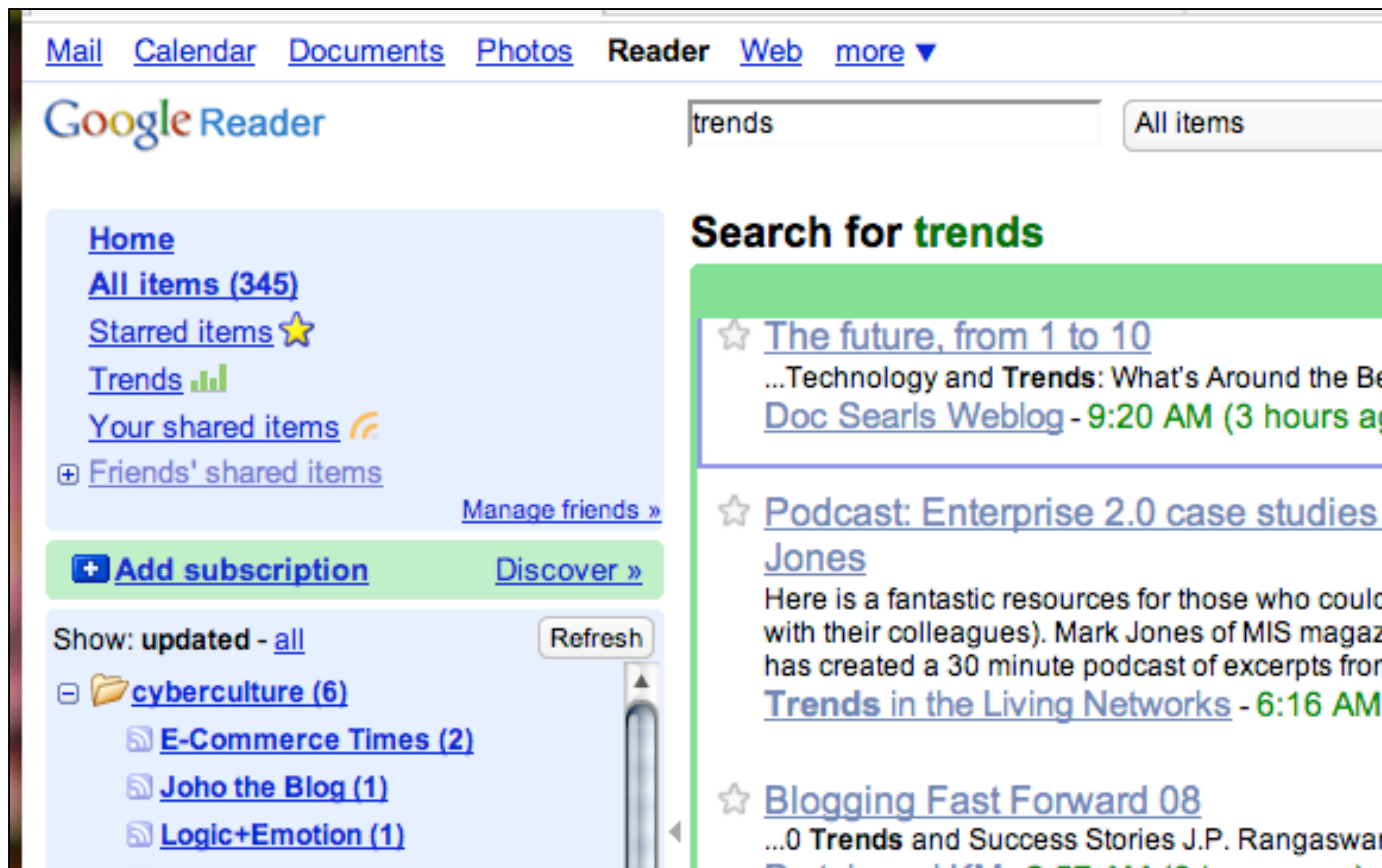
- A way to save on phone calls

http://www.skype.com
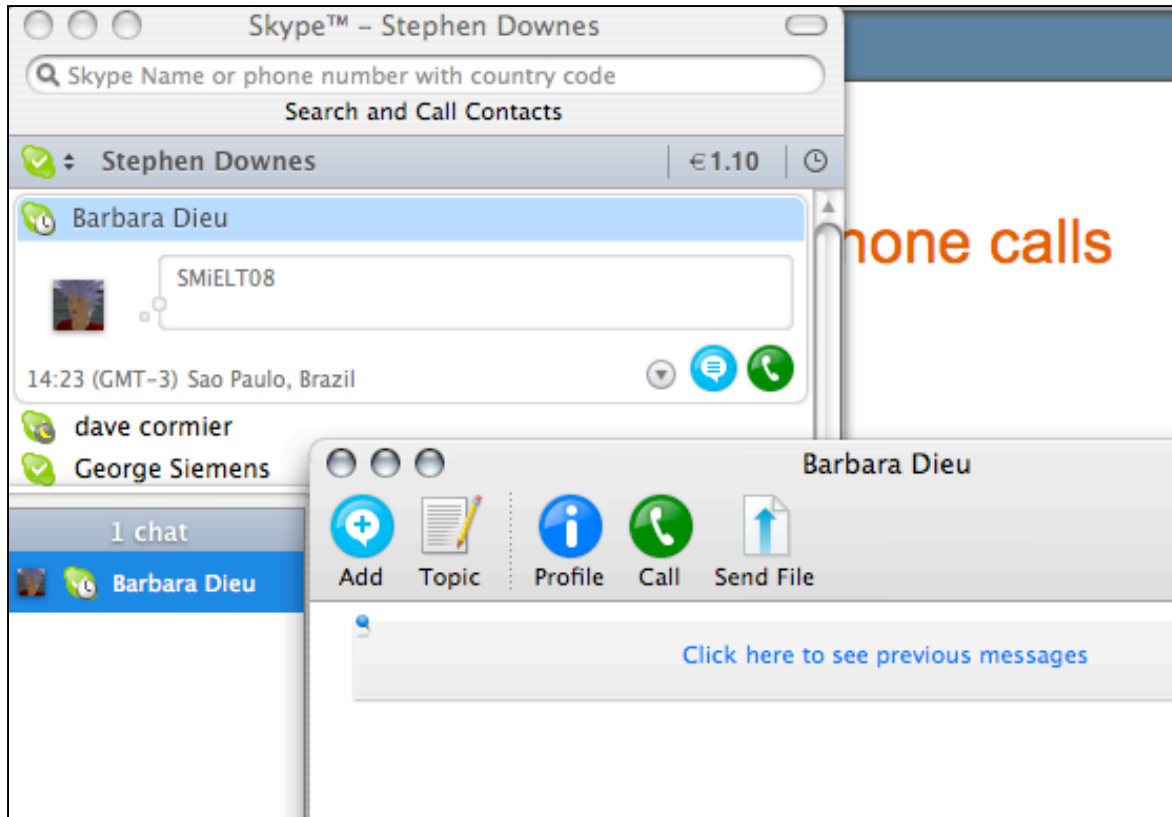
- Knowing where I'm staying before I get there

http://maps.google.com
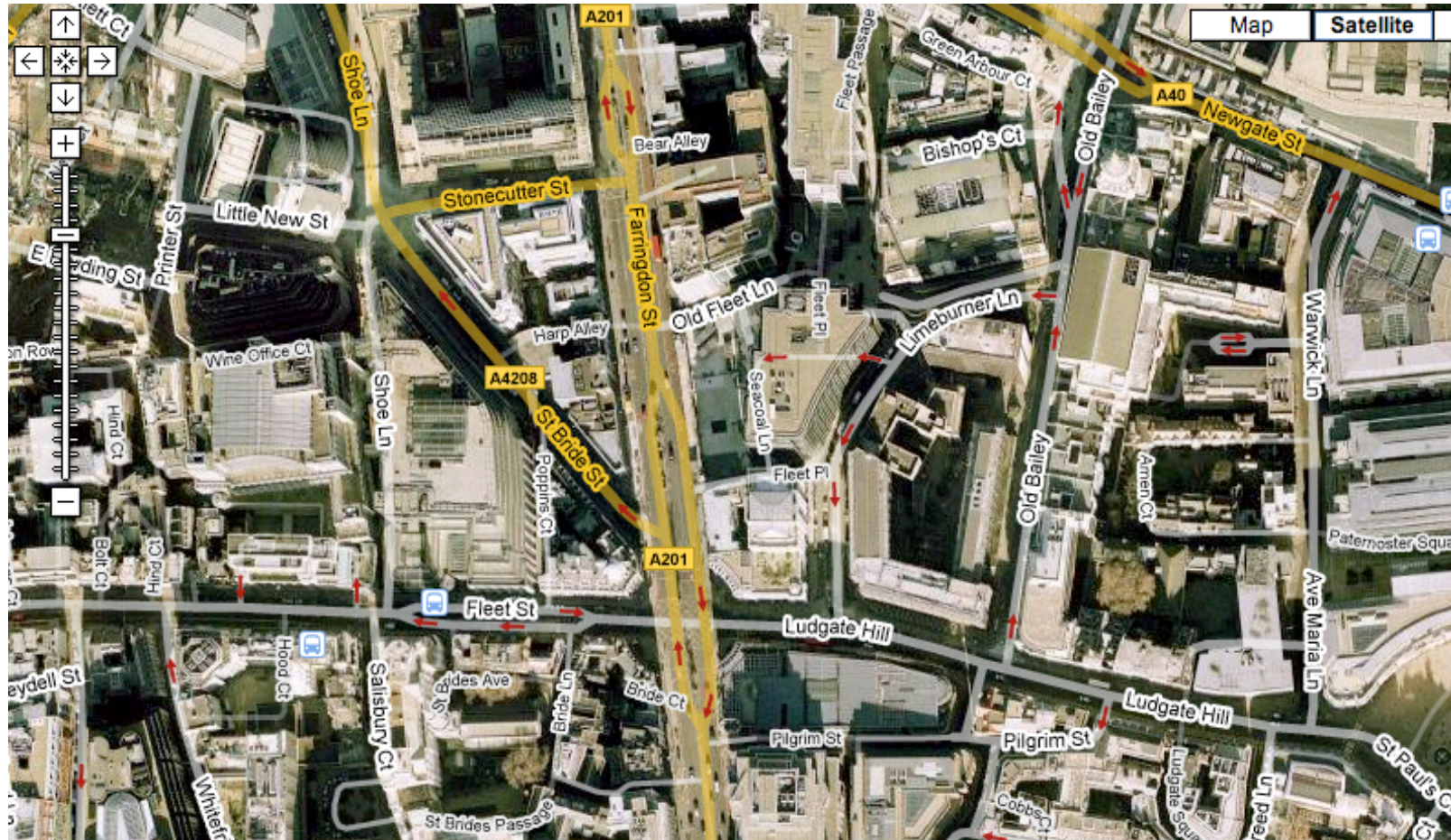
- ## An Easy Way To Draw Pictures

http://www.gliffy.com
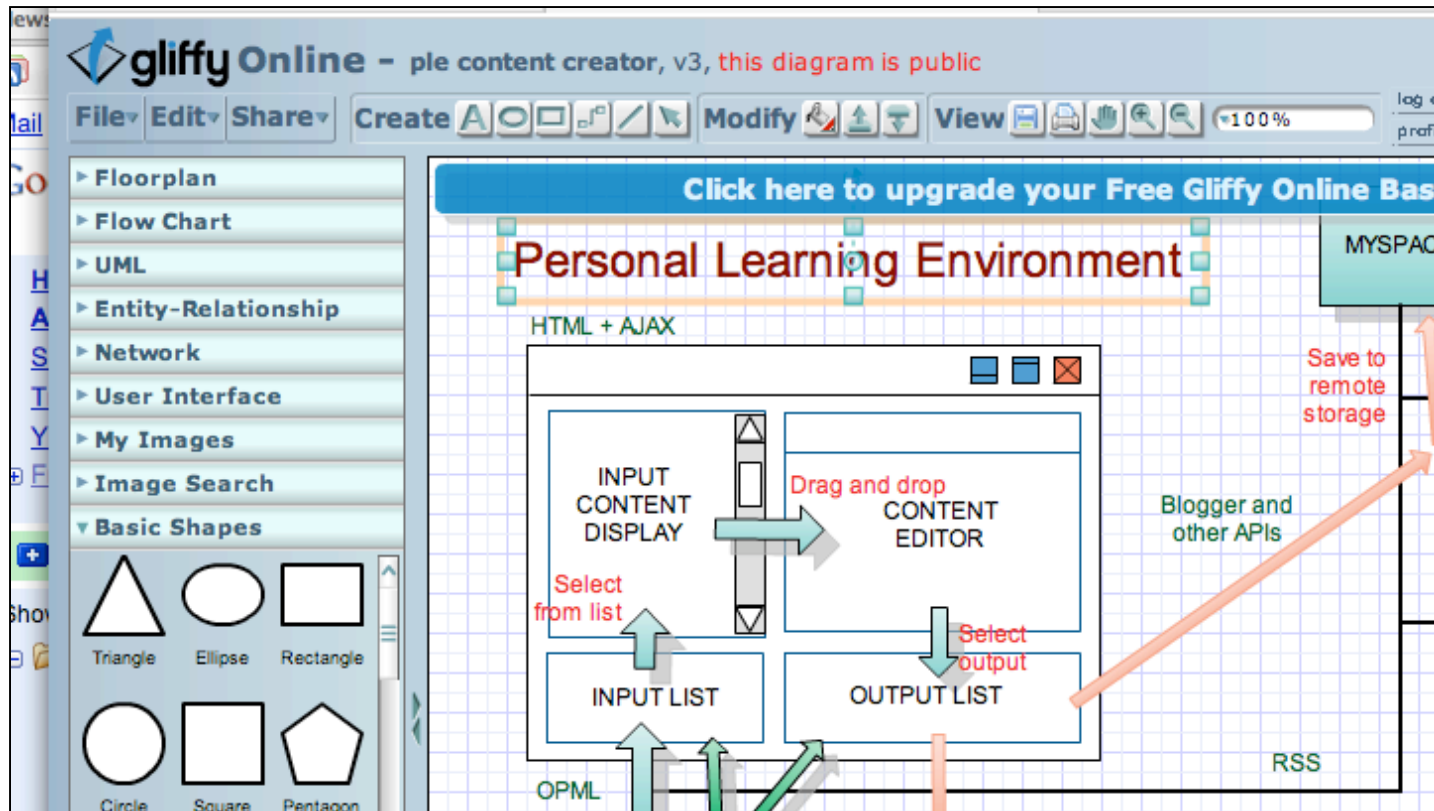
What does personal learning mean for learners?

"We learn how to do things by doing the things we are learning to do."

— Aristotle
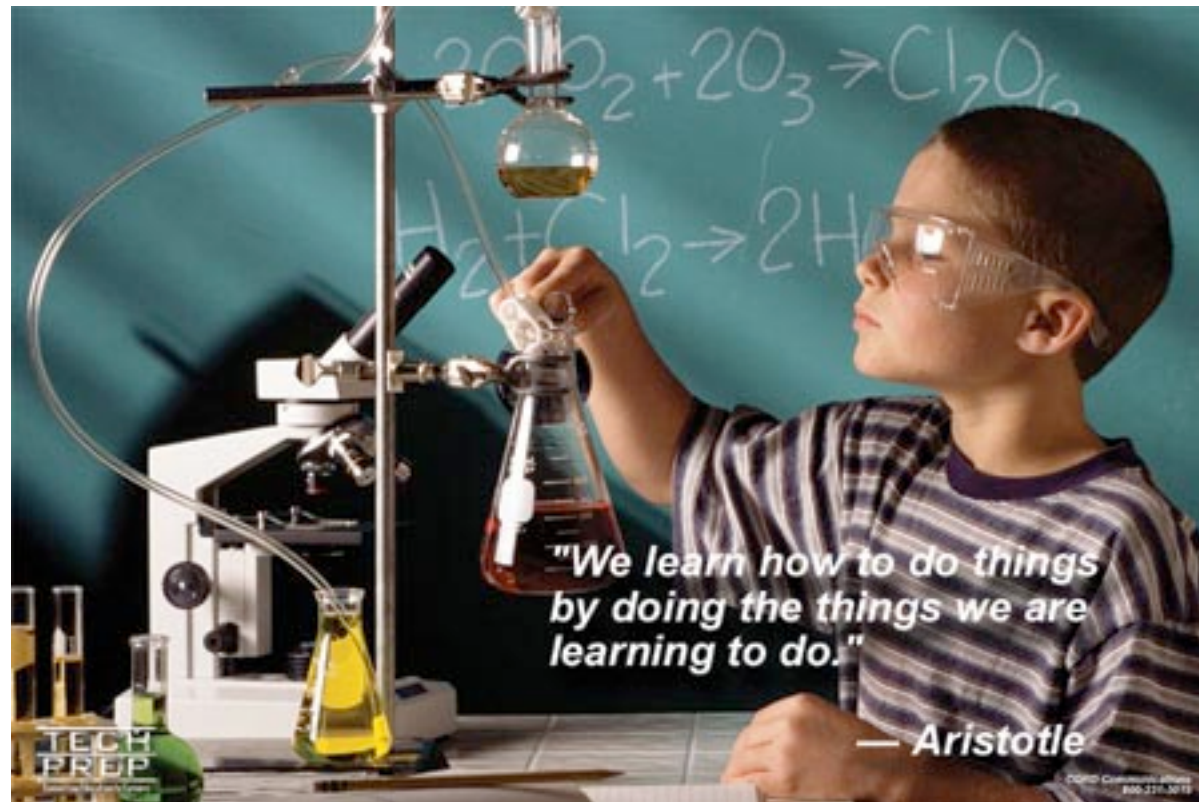
- A world of free learning resources…

Don't like the word 'free'? Deal with it…

Three Views of Learning Resources:

1. Learning Resources as a *thing*
- Book, content object, etc

2. Learning Resources as *events*
– *Class, lecture, seminar, meeting*

- The first two models are *information-theoretic* and *medium-based* models
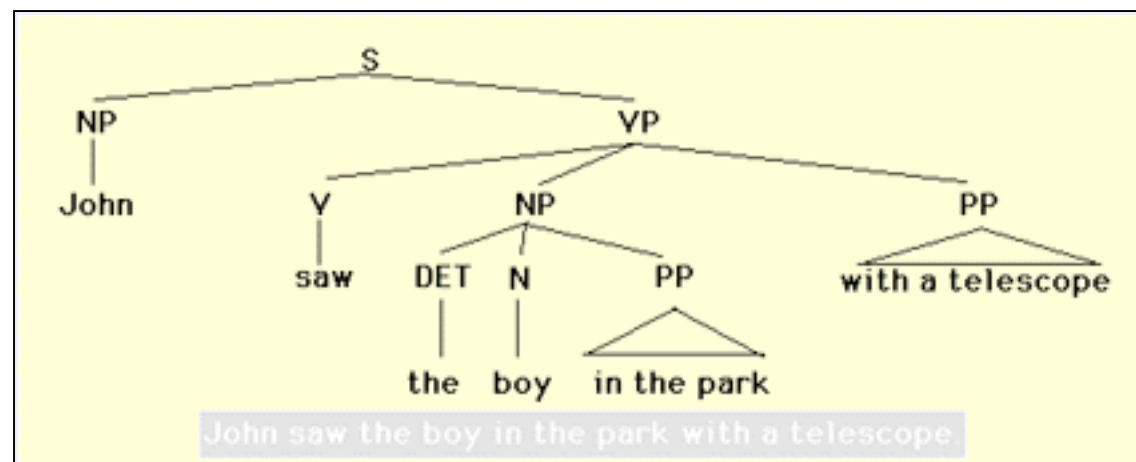 - They stress *content*
  - They stress *rules*

John saw the boy in the park with a telescope

3. Learning Resources as *flow*

- Stresses experience
- Stresses pattern recognition

What does personal learning look like?

- User generated Content
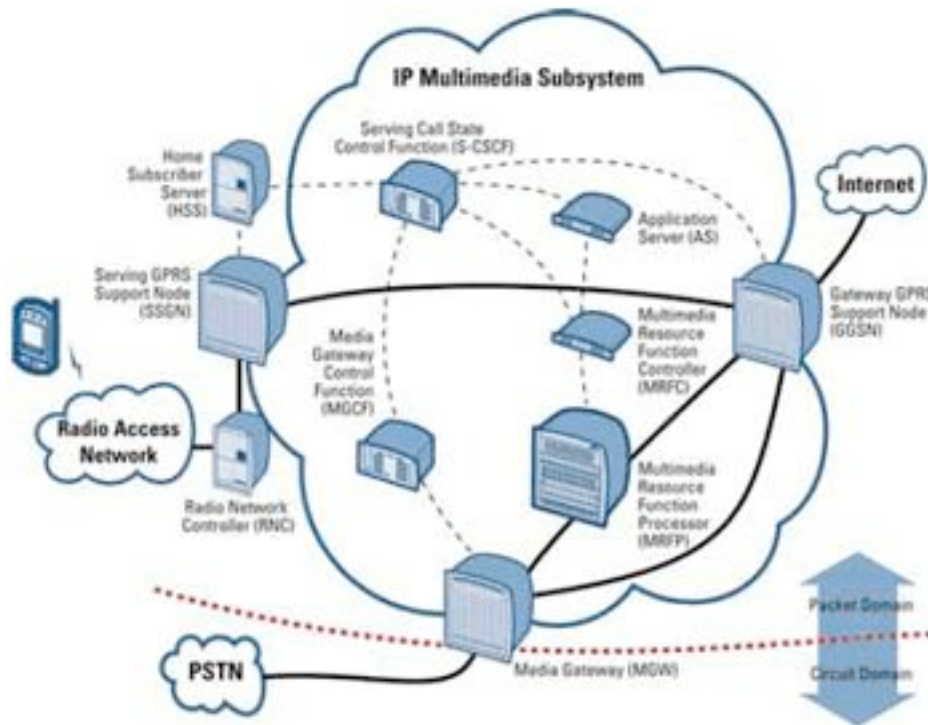 - Personal, opinionated

• Network of interactions

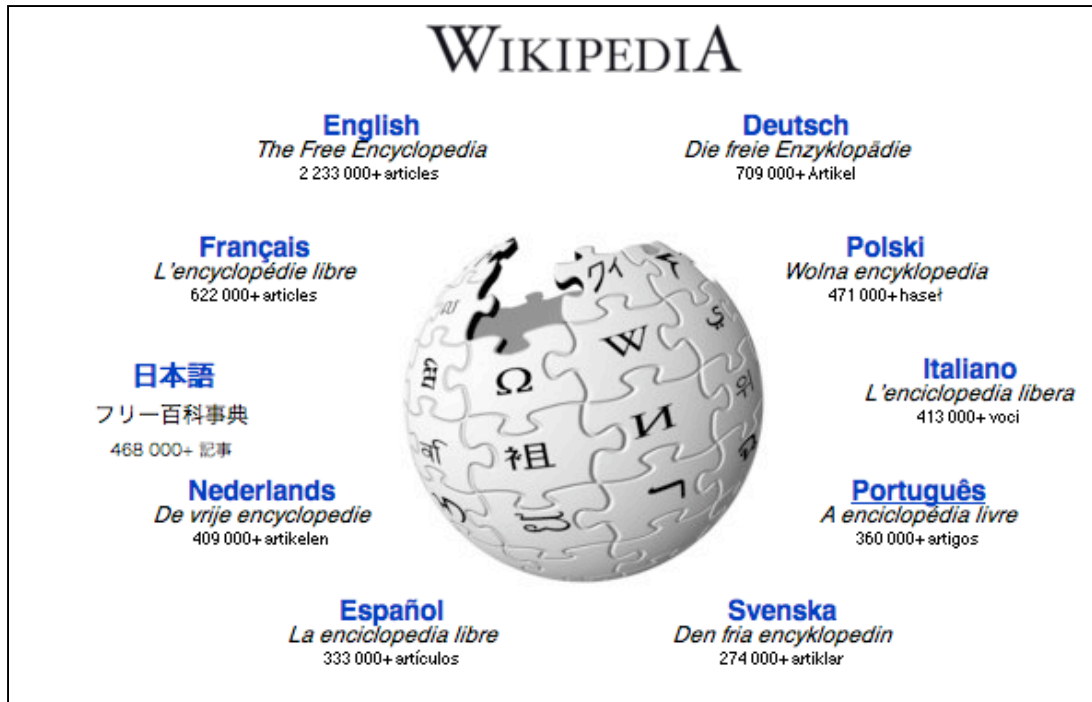Figure 1: IP Multimedia Subsystem (IMS).

- Immersive Learning

- New Roles
  - For students - as creators of learning
  - For teachers - as coaches and mentors
  - For the rest of us - as teachers

- Web of user-generated content (eg. Wikipedia)…

http://www.wikipedia.org

Learning as a network phenomenon…

Issues:

- Too much information, filtering info
- Too many sources to scan, new sources
- Localization, personalization, relevance
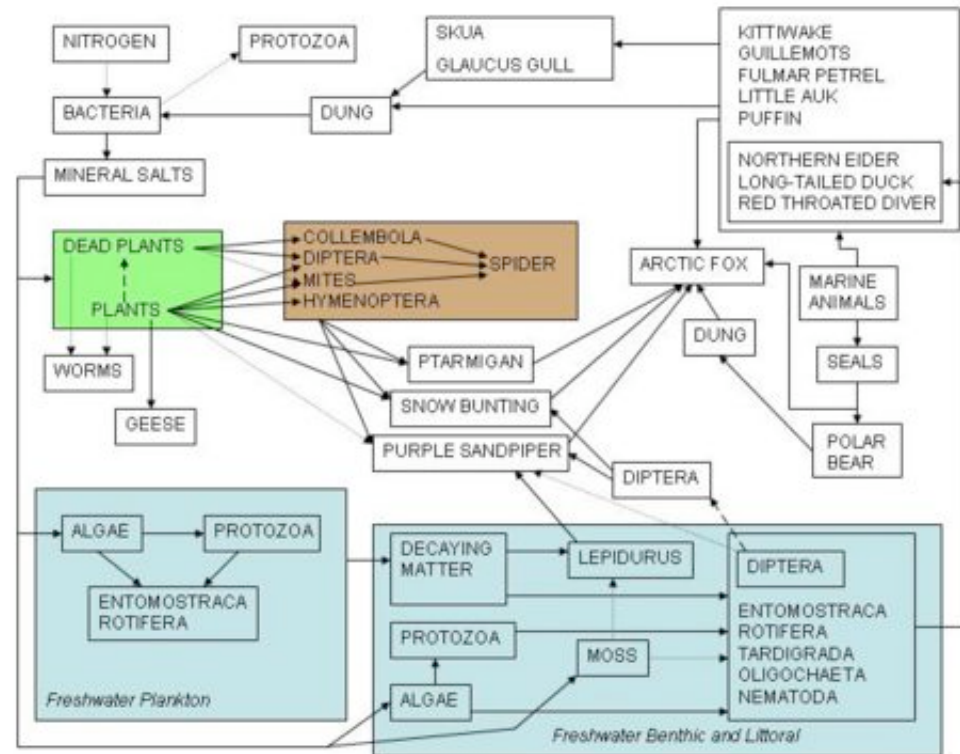
Response: Network Semantics

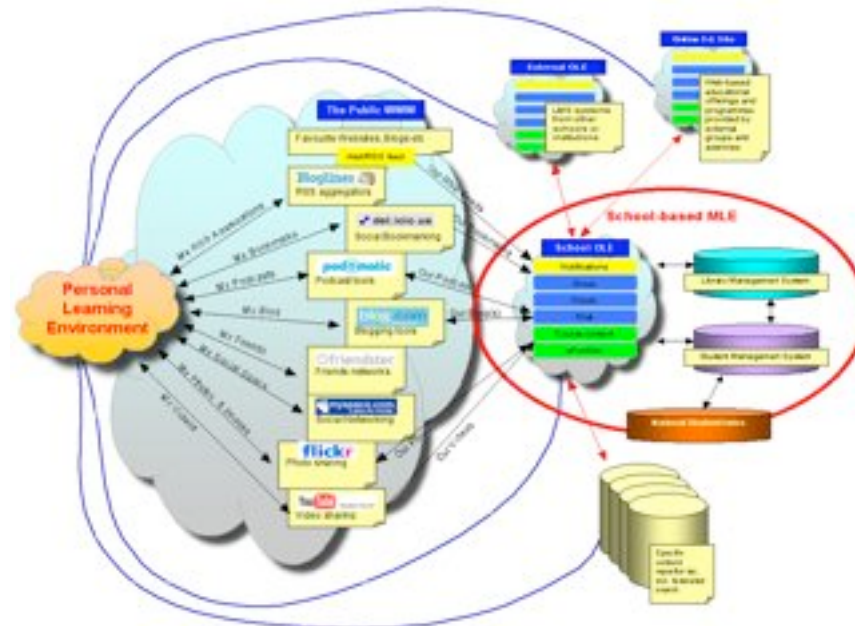- Social networks and communities (entails a genuinely portable (and *owned*) identity

http://www.facebook.com

- Networks of interactions (aggregate, remix, repurpose, feed forward) – syndication

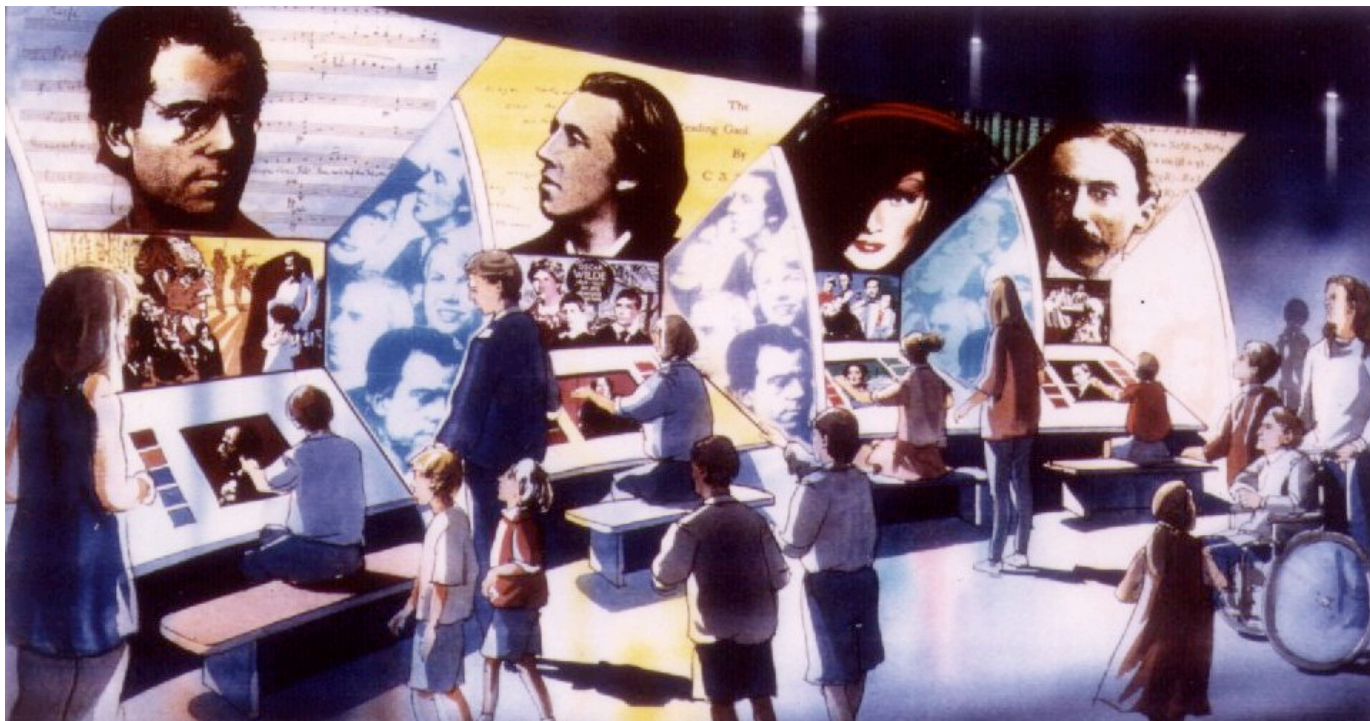
An ecology…

- The *personal* learning centre

Autonomy

- The Network is Diverse – multiple views, multiple technologies
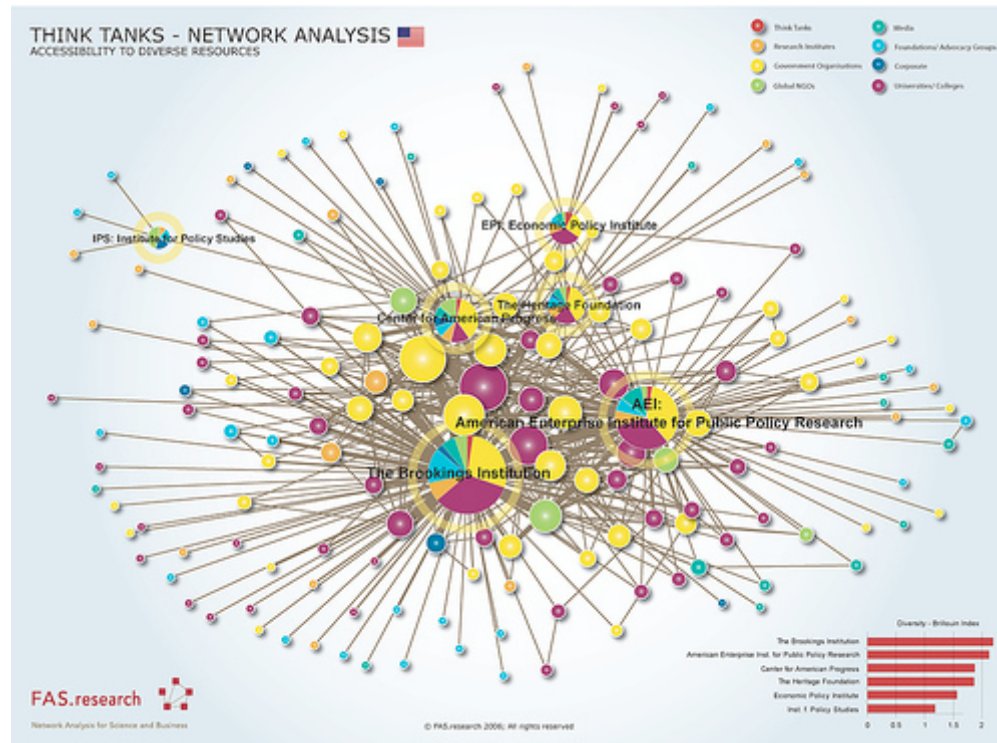
- The Network is connected and interactive (*not* 'integrated') – small pieces, loosely joined

http://www.biography.org.uk/real.htm

- ## The Network is *open*
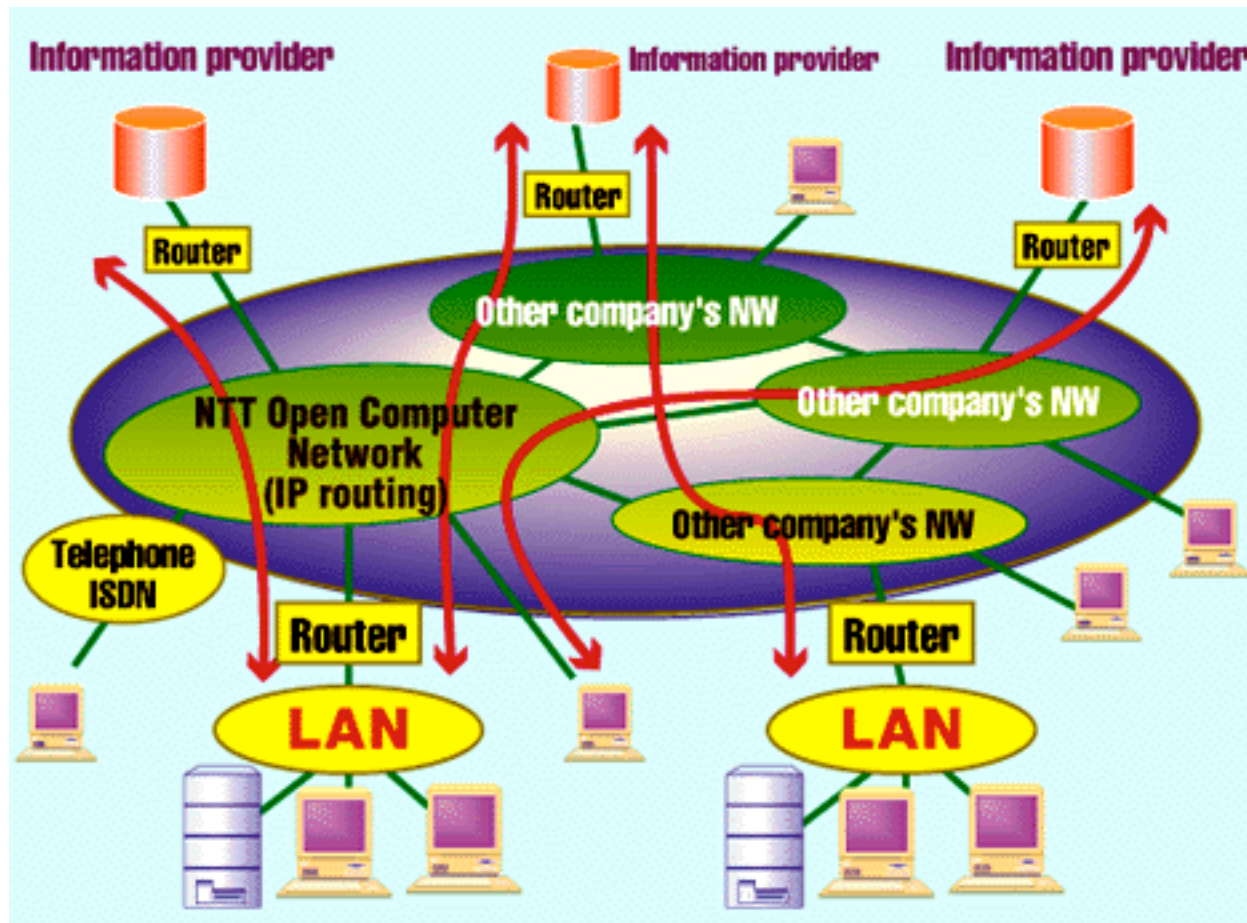
http://park.org/Japan/NTT/DM/html_f4/F4_10600_e.html

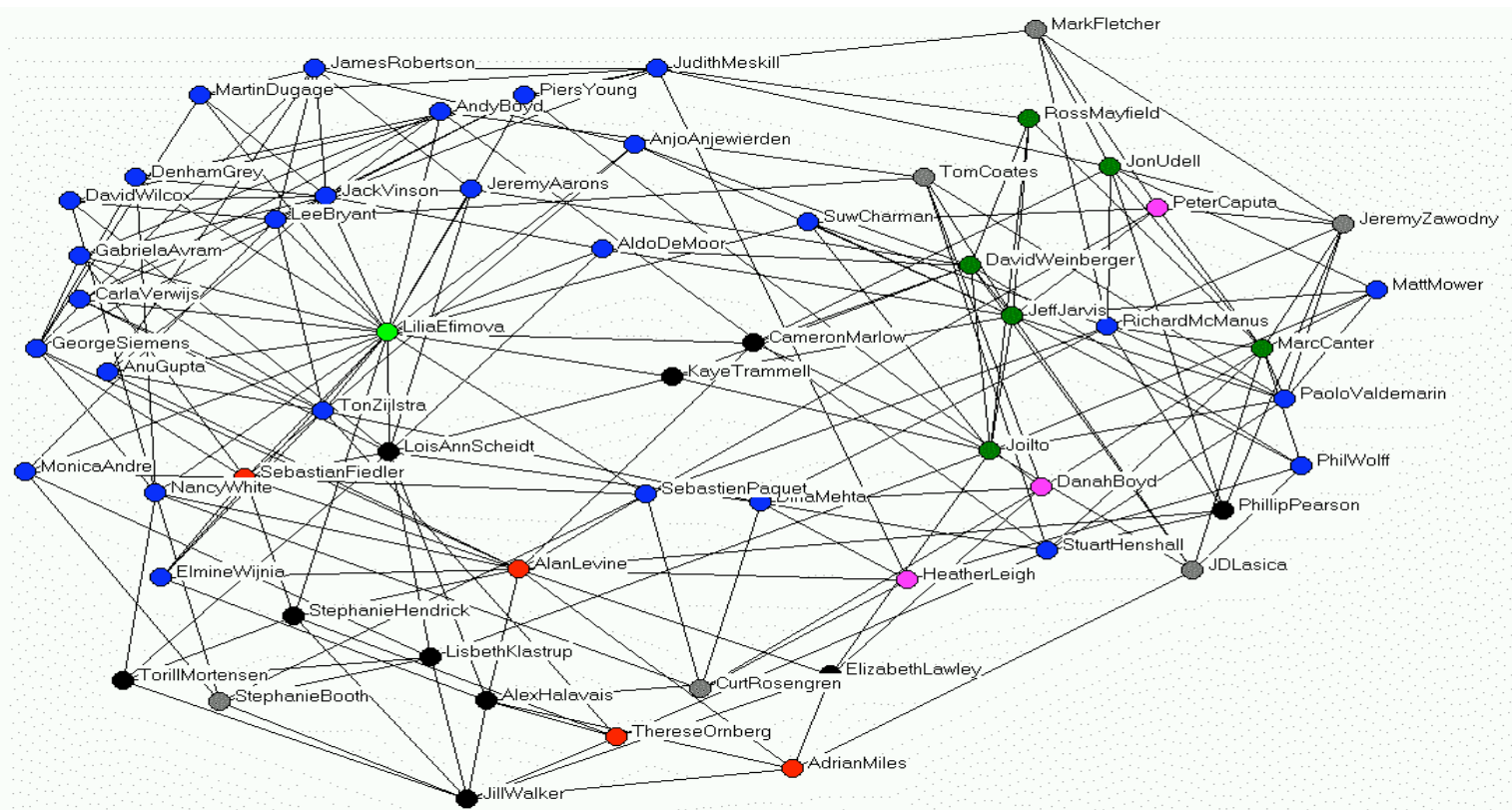# What are the key technologies?

http://www.bclir.org/Egypt.htm

Web 2.0 - Core Technologies

Tools for worldmaking…

Social Networking

http://staffdev.henrico.k12.va.us/parents/socnetwork.htm

Tagging

Tagging

trepreneurship publishing technology design medium
ironment games wireframe sitemap user experience
ocess flow tagging card sort iasummit07 design
gn the box information architecture swimlanes rapid f
UX methods digital ethnography analytics alignment m
interaction design kano analysis tagging experience
aceted browse page description diagram facets links
iscellaneous web 2.0 movies adoption emergence m

UX METHODS TRADING CARDS   13

Asynchronous Javascript and XML (AJAX)

Jesse James Garrett in February 2005.

https://bpcatalog.dev.java.net/ajax/textfield-jsf/design.html
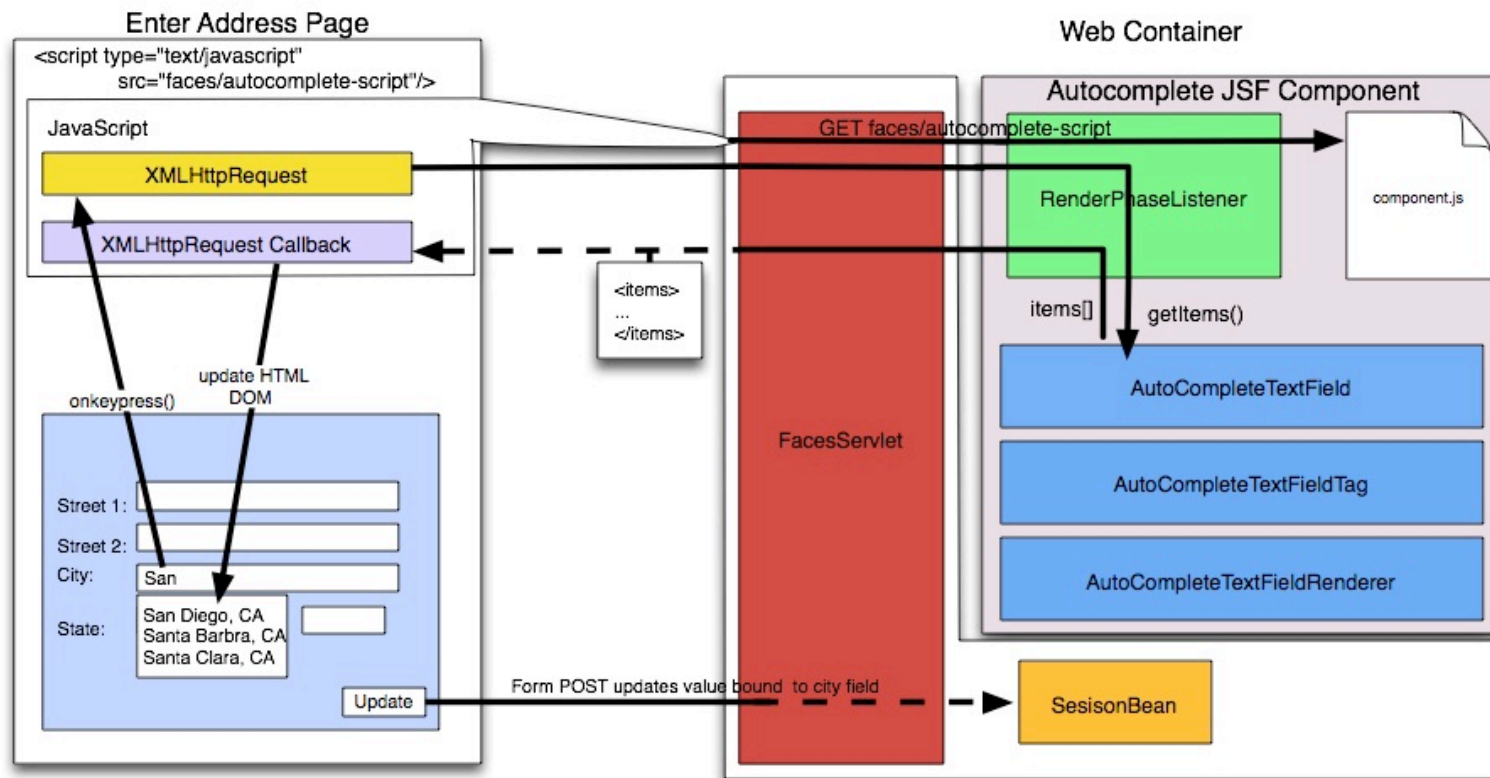
Representational State Transfer (REST)
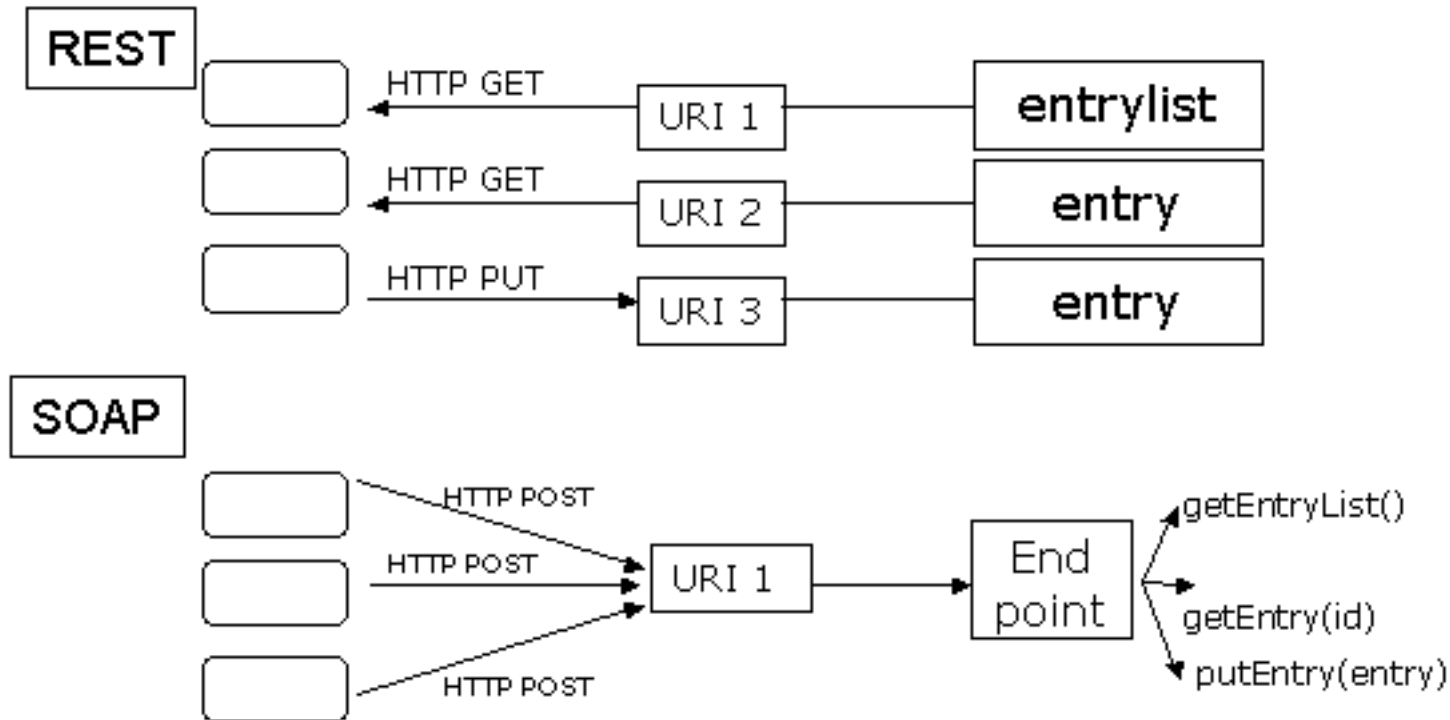
- principles that outline how resources are defined and addressed
- looser sense: domain-specific data over HTTP

http://en.wikipedia.org/wiki/Representational_State_Transfer
http://itpro.nikkeibp.co.jp/article/Watcher/20060315/232492/

Application Program Interface (API) and Mash-Ups
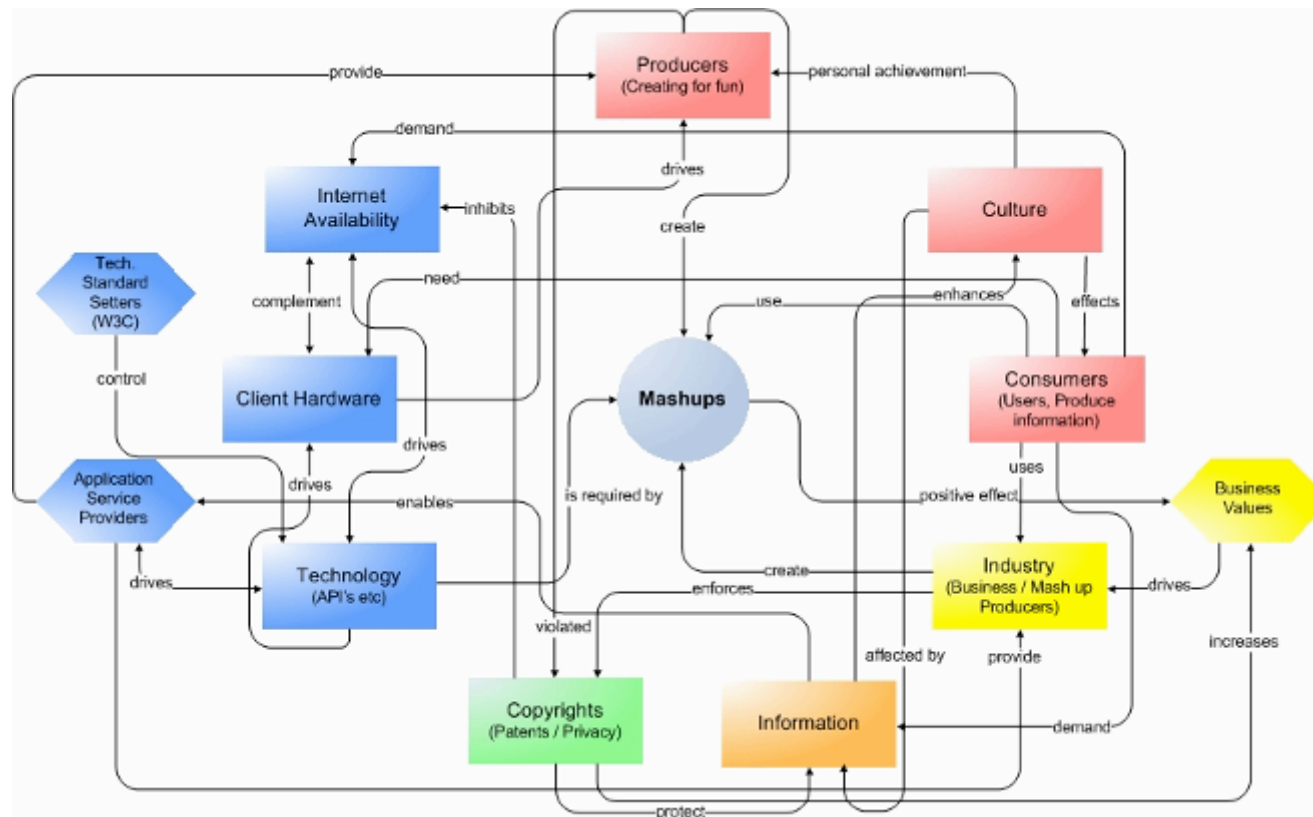
Javascript Object Notation (JSON)
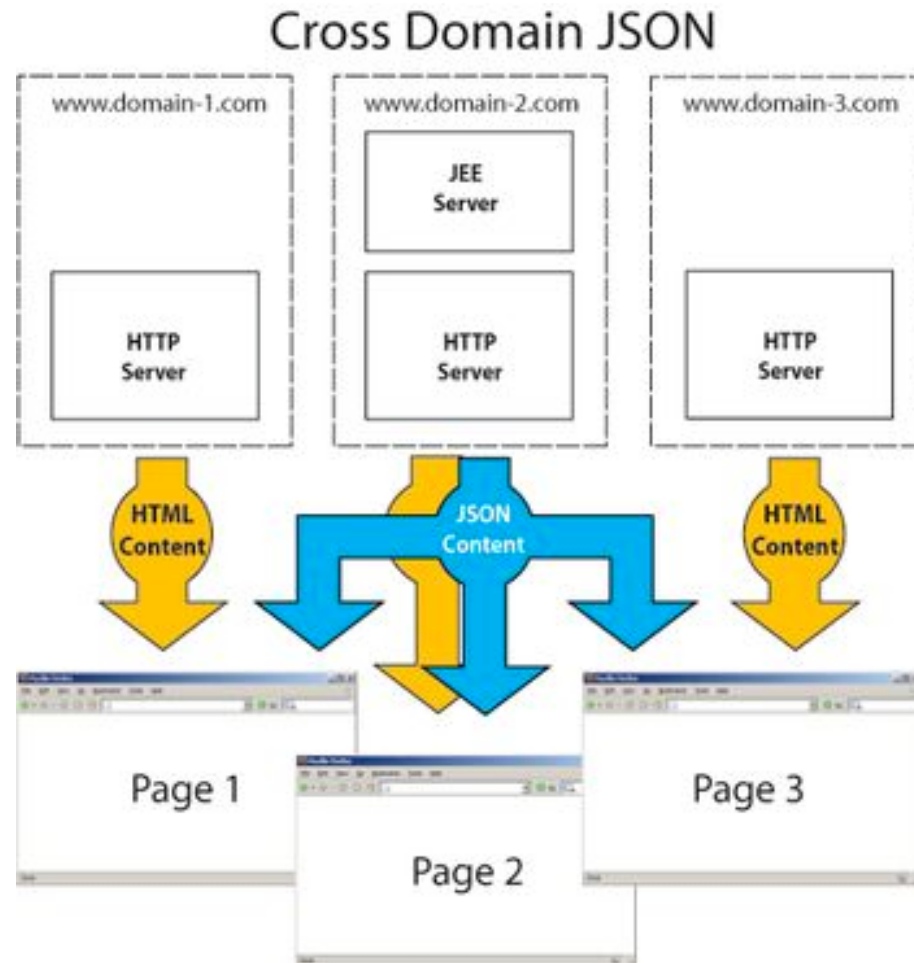
OpenID
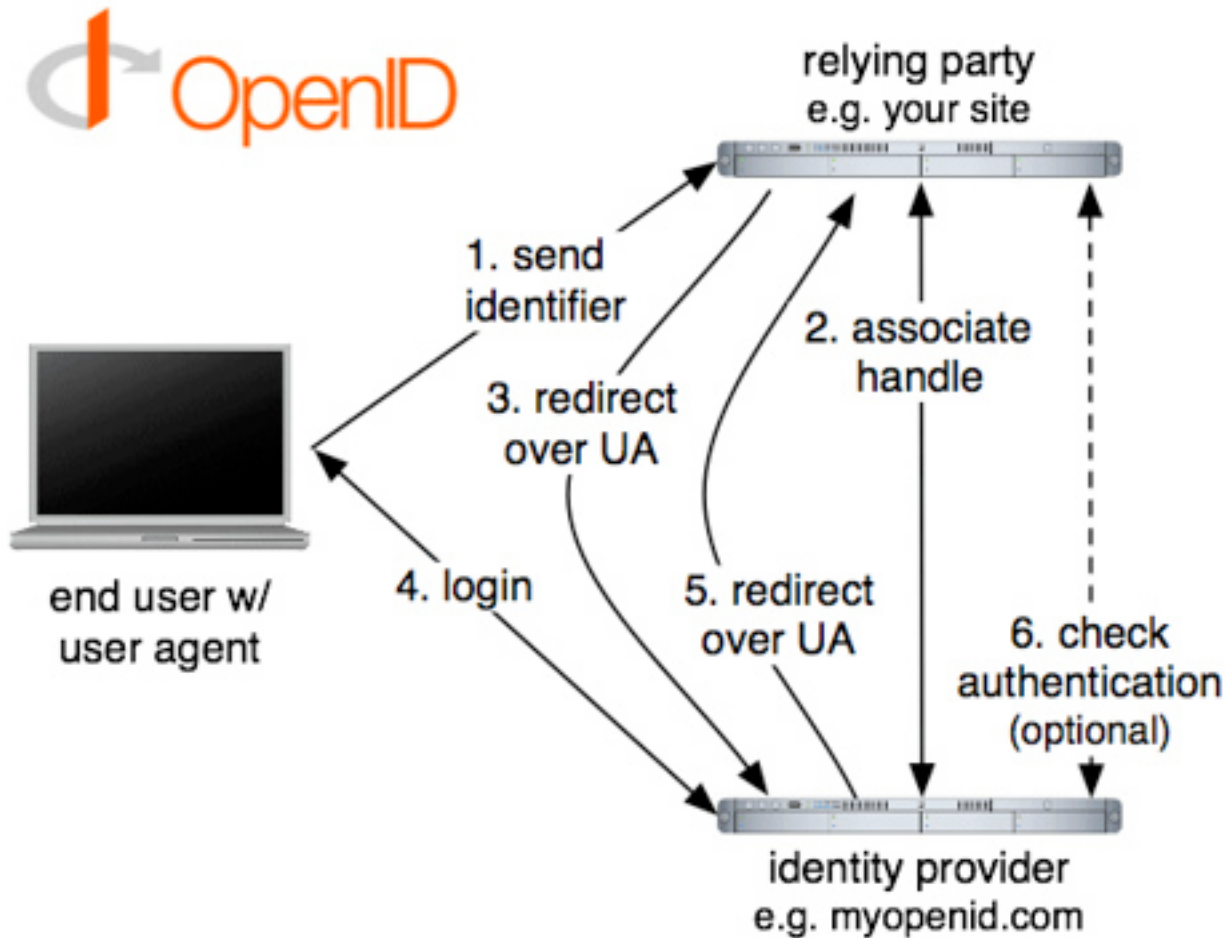
Connectivism & Connective Knowledge

The Best Example…

- 12 week course, readings, activities…
- The course on connectivism is probably the best (early) example of what we mean
  - We began with the course itself – what we wanted to cover
  - We then added communications tools
  - And then the students took over…

Overview…

- George Siemens and I are ushering roughly 2200 students through a 12 week online course
- Some of these paid tuition and are getting credit, but most of them are attended the 'open' course

The Course

- Offered through the University of Manitoba
  - 12 weeks long
  - credit in Certificate in Adult and Continuing Education and Certificate in Emerging Technologies for Learning
  - Explored the concepts of connectivism and connective knowledge

Connectivism

"At its heart, connectivism is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks."

What Connectivism Is

Course Components

- The Wiki…

http://ltc.umanitoba.ca/wiki/Connectivism

Course Components (2)

- Open Enrollment

24 Final Project

Please enter your email address here if you'd like to be involved (either for free participation or to enroll for credit).

Course blog is available here

Connectivism Research

Course Details

Delivered in partnership with: Extended Education and Learning Technologies Centre, University of Manitol

Course Code: 98813- 08-01

- The course was advertised in both of our blogs…

Course Components

- Readings….

Week 1: What is Connectivism? (September 8-14)   [ed

Presentations & Papers

George Siemens presentation on Defining Connectivism and Comparing Connectivism

Stephen Downes presentation: A quick introduction to connectivism (ustream)

Readings

Little Boxes, Glocalization and Networked Individualism (.pdf)

What is the Unique Idea in Connectivism?

What connectivism is

Learning Theory or Pastime of the Self-Amused? (.doc)

Bill Kerr - Critique of connectivism

Activities:

Mon: Recorded presentations and readings will be posted to the email list

Wed: Elluminate discussion 11 am CST: See time zone conversions

Friday: Discussion via USTREAM 11 am CST: See time zone conversion

Assignments:

Course Components (3)

- The Blog

http://ltc.umanitoba.ca/connectivism/

Course Components

- Course Moodle Forum

http://ltc.umanitoba.ca/moodle/course/view.php?id=20

Course Components

- ## Pageflakes Site

Course Components

- Elluminate Discussions (Wednesdays)

Course Components

- Ustream

http://www.ustream.tv/recorded/688902
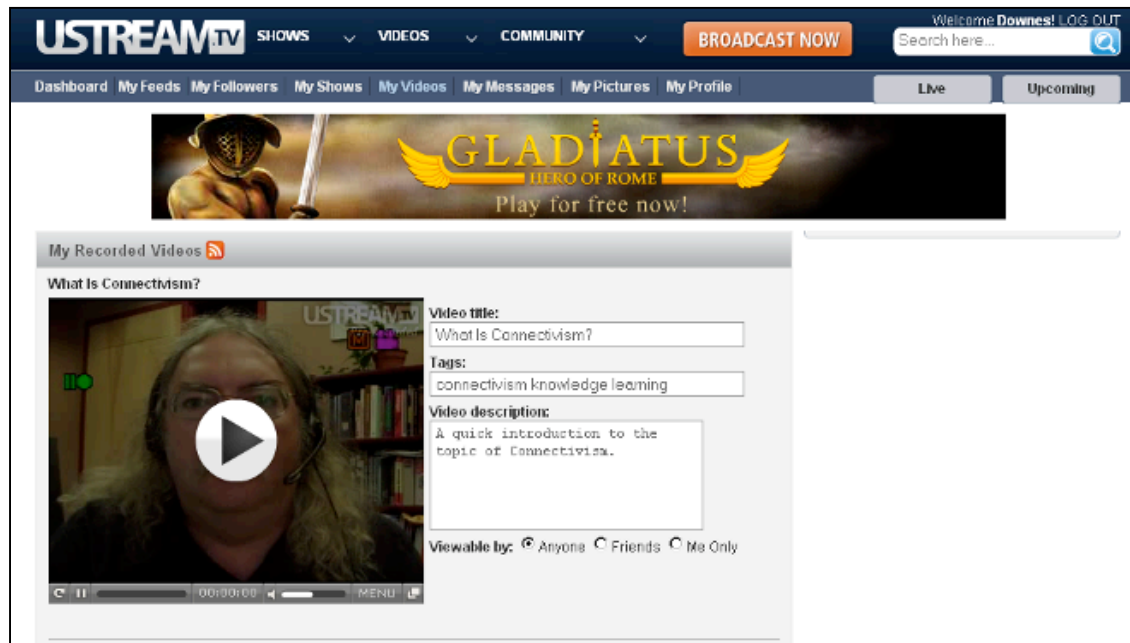
Course Components

- Twitter…

http://twitter.com/cck08

Course Components

- gRSShopper…

The Main Idea
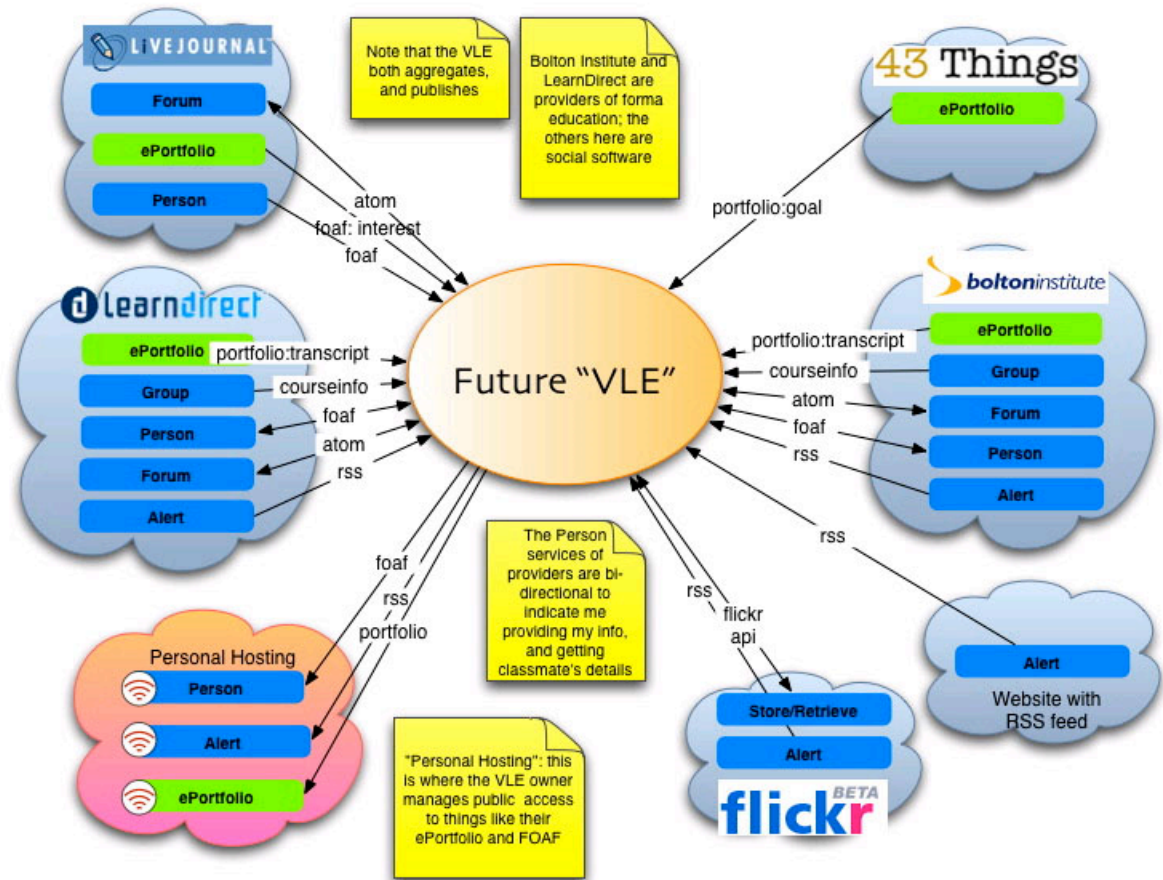
The web of the future isn't about visiting sites, it's about connecting resources.

Architecture
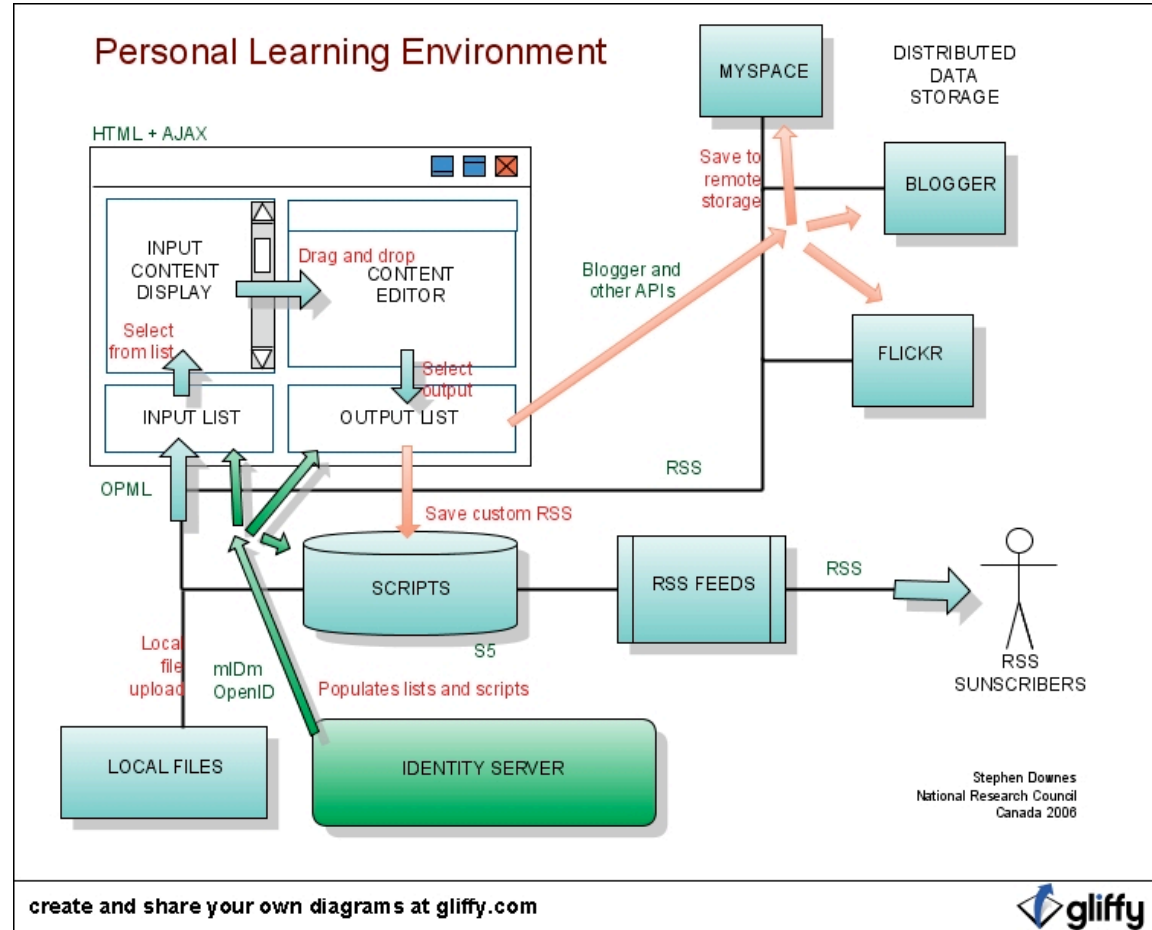
The application provides mechanisms to input, process, and distribute content.

Login

gRSShopper instances are *personal* sites intended to support single users or small groups (though visitors can sign in).

Subscriptions

Visitors have a one-click way to subscribe to site newsletters (or they can sign up for RSS).

Custom Pages
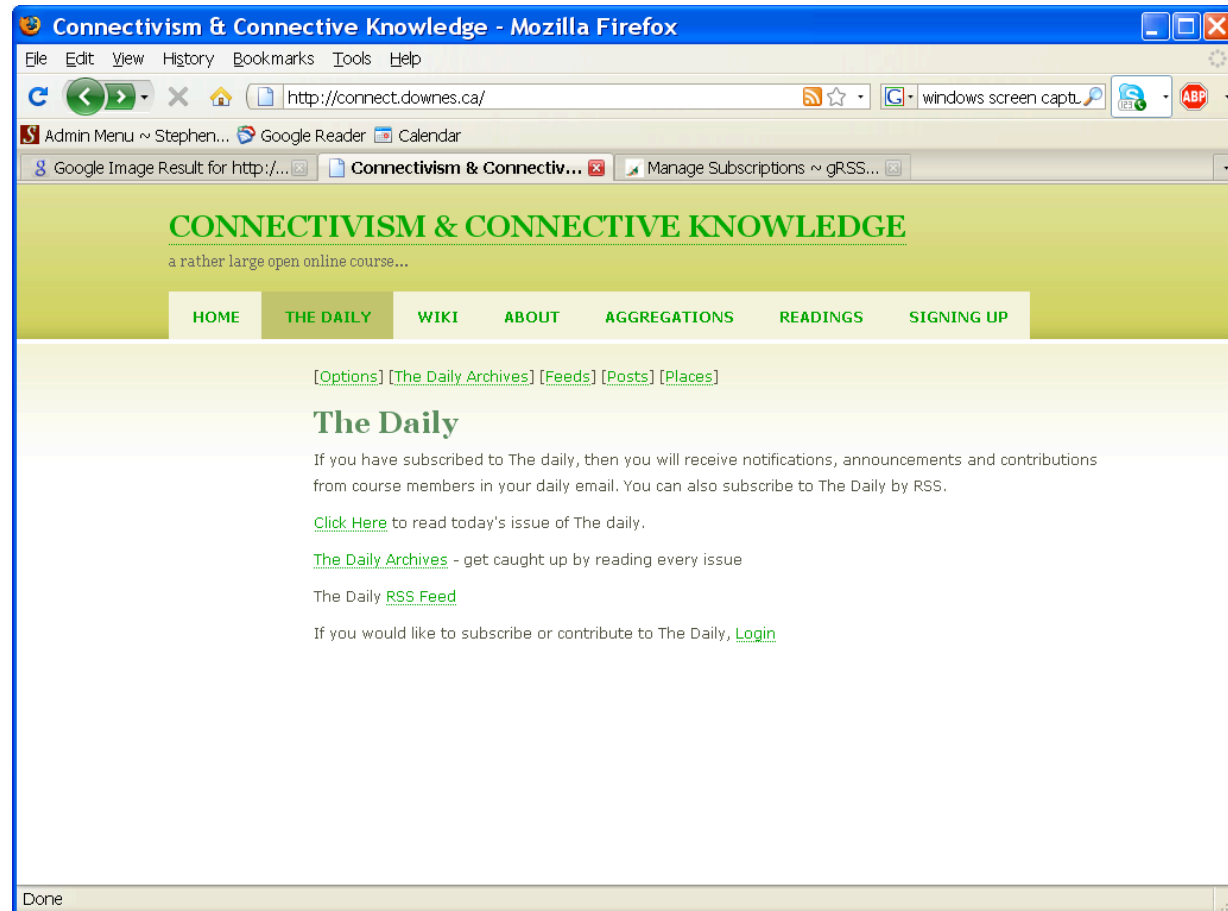
Content is organized into pages

Archive

Pages auto-archive

Custom Pages

Multiple pages can be created; each page can be a newsletter (or not; you decide)

Page Creation

Pages are created automatically from a database of content types

Feed Management
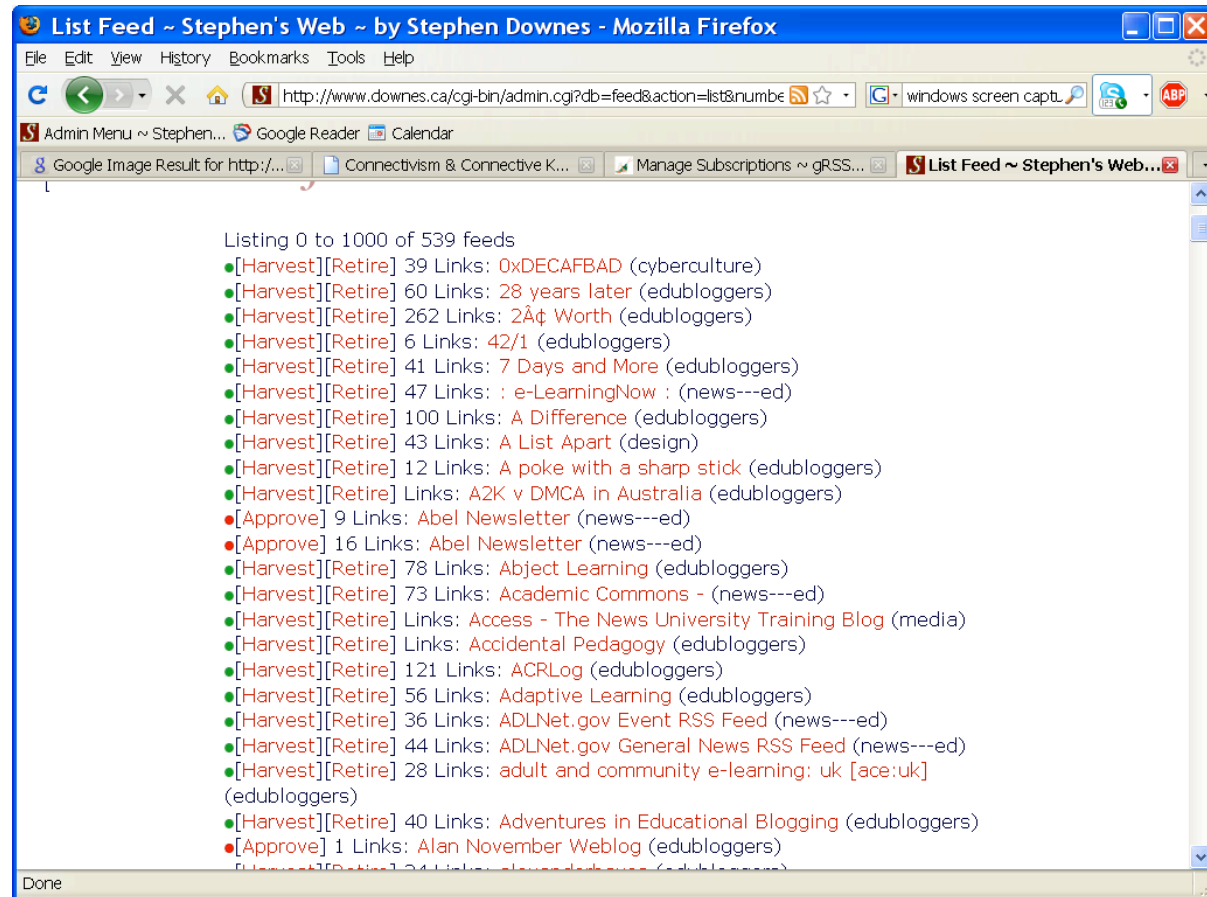
Content input comes from RSS feeds harvested by gRSShopper

Harvester
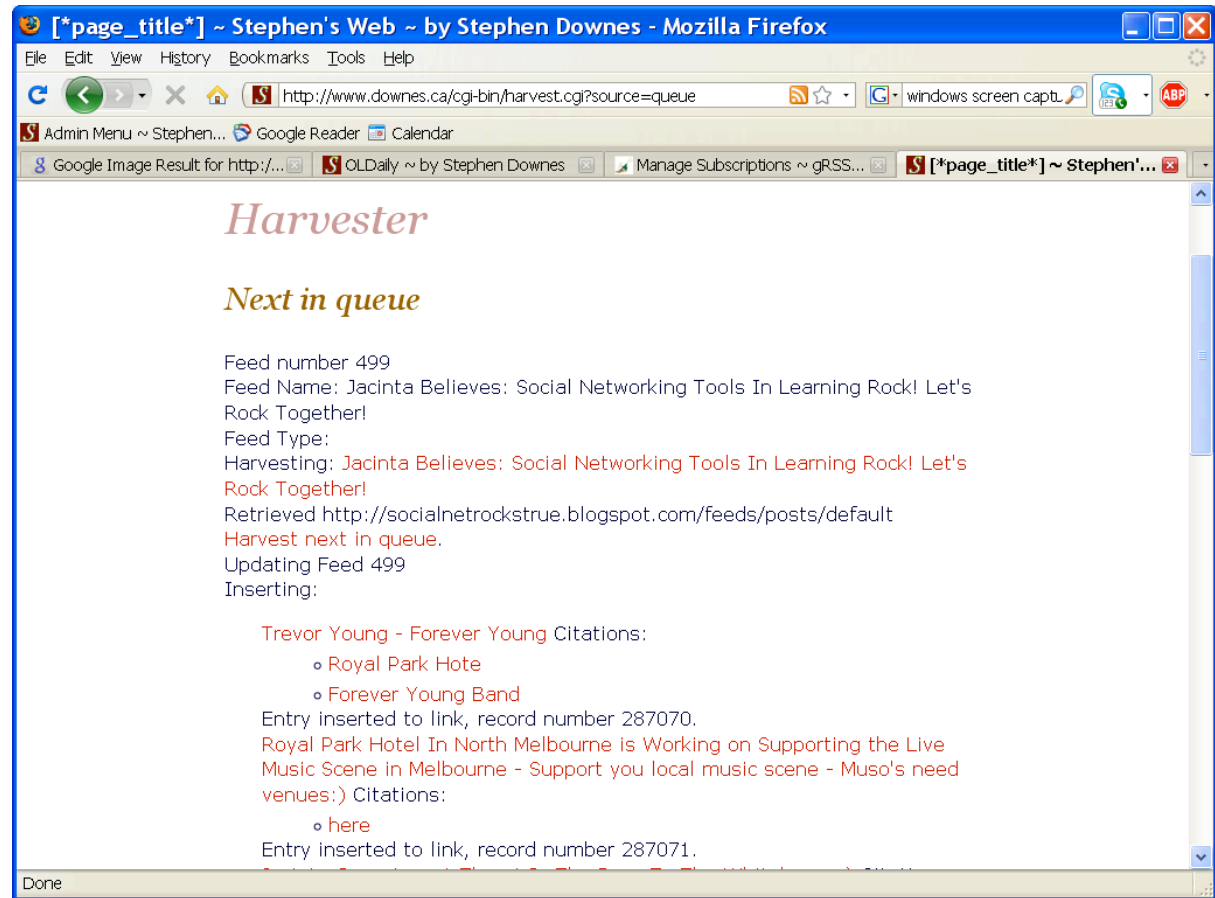
Harvester captures and analyzes incoming data (by topic, links, etc)

Mapping

Incoming content can be mapped to any of a variety of data types

Viewing Harvested Content

Harvested contents may easily be scanned in a viewer

Post Editor

Work with aggregated content to create new content

Open Source

gRSShopper code is available as an open source download

![gRSShopper logo]

More

http://www.downes.ca
http://grsshopper.downes.ca

Course Components

- The Daily

http://connect.downes.ca/

Course Components

- Managing Content

Course Components

- Feed Harvesting

Course Components

- OPML…

```
- <opml version="1.1">
  - <head>
      <title>Connectivism and Connective Knowledge OPML</title>
      <dateCreated>Tue, 9 Sep 2008 16:19:04 -0400</dateCreated>
      <dateModified>Tue, 9 Sep 2008 16:19:04 -0400</dateModified>
      <ownerName>Stephen Downes</ownerName>
      <ownerEmail>CCK08 <stephen@downes.ca></ownerEmail>
      <expansionState/>
      <vertScrollState/>
      <windowTop/>
      <windowLeft/>
      <windowBottom/>
      <windowRight/>
    </head>
  - <body>
      <outline description="A rather large open online course..." htmlUrl="http://ltc.umanitoba.ca/connectivism" text="Cd
Knowledge" title="Connectivism & Connective Knowledge" type="RSS 2.0" version="RSS 2.0"
xmlUrl="http://ltc.umanitoba.ca/connectivism/?feed=rss2"/>
      <outline description="" htmlUrl="tst" text="Test" title="Test" type="RSS 2.0" version="RSS 2.0" xmlUrl="tst"/>
      <outline description="" htmlUrl="tst" text="Test" title="Test" type="RSS 2.0" version="RSS 2.0" xmlUrl="tst"/>
      <outline description="" htmlUrl="tst" text="Test" title="Test" type="RSS 2.0" version="RSS 2.0" xmlUrl="tst"/>
      <outline description="" htmlUrl="tst" text="Test" title="Test" type="RSS 2.0" version="RSS 2.0" xmlUrl="tst"/>
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      <outline description="" htmlUrl="tst" text="Test" title="Test" type="RSS 2.0" version="RSS 2.0" xmlUrl="tst"/>
```

Course Components

- Intro…

The Students

- The Course Map…

http://x28newblog.blog.uni-heidelberg.de/2008/09/06/cck08-first-impressions/
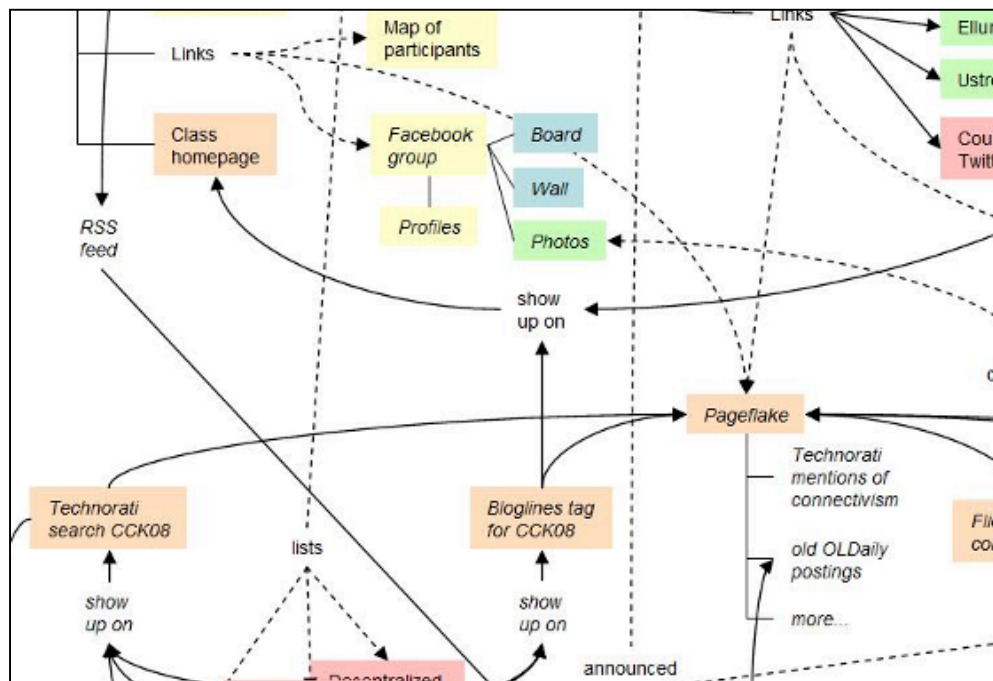
The Students

- The *Other* Course Map…

http://tinyurl.com/cck08map

The Students

- Add to the Map - Video

http://thecleversheep.blogspot.com/2008/09/cck08-is-truly-global.html

The Students
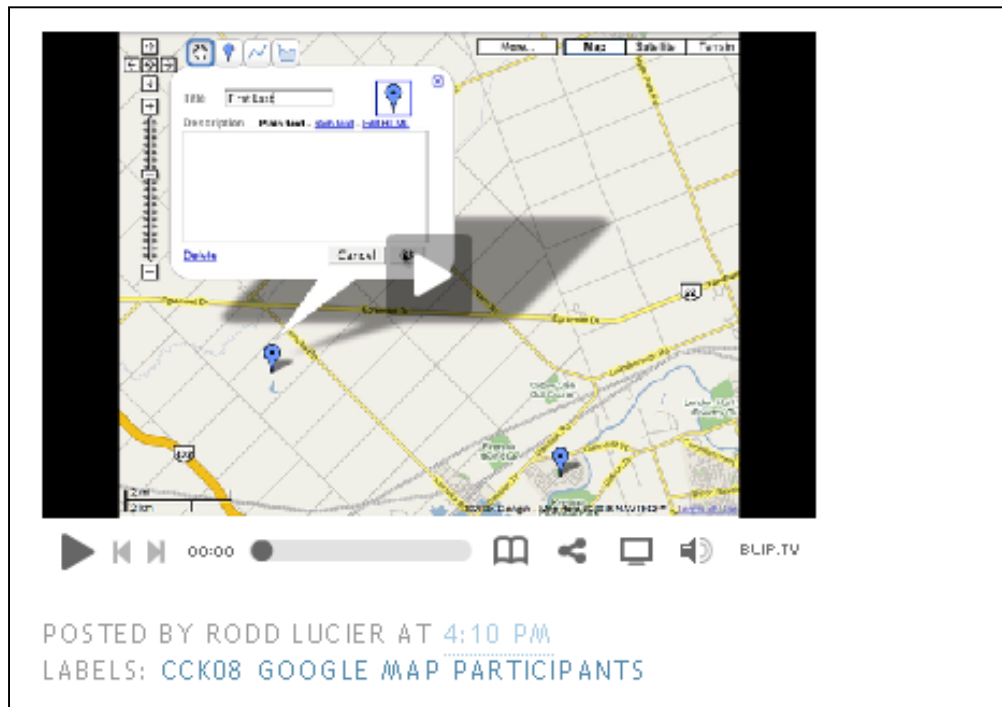
- Wordle… 1

The Students

- Wordle… 2

The Students

- Wordle… 3

The Students

- Word of Mouth

The Students

- Google Groups

http://groups.google.com/group/connectivism

The Students

- Translations…

http://ltc.umanitoba.ca/wiki/Conectivismo_-_Curso_online

The Students

- Dekita…

http://dekita.org/orchard/CCK08_/

The Students

- Second Life…
- Diigo…
- de.l.icio.us
- WordPress…

WORDPRESS.COM

Blogs about: Ccko8

Learning Approach

Strategy	Method	Technology
Learn from Collocation	**Experience based Learning** Learning Labs, Classroom, Mentoring, Role Playing, Coaching, Case Studies, Expert Presentations,...	Face-to-Face
Learn from Collaboration	**Collaborative Learning** Live Virtual Classroom, e-Labs, Collaborative Sessions, Real-time Awareness, Live Conferences, Teaming	Collaborative
Learn from Interaction	**Interactive Learning, Simulations and Gaming** CBT/WBT Modules, Self-Directed Learning Objects, Interactive Games, Coaching & Simulations	Multimedia
Learn from Information	**Performance Support and Reference Materials** Web Lectures, Web Books, Web Conferences, Web Pages, Videos...	Internet

- http://apsblog.com/site/learning-architecture/learning-approaches

Co-Location

Coaching
Mentoring
Interaction
Play
Creation

Physical spaces will become work and creativity spaces, not presentation spaces. New technology includes: ambient internet, multimedia, robotics, capture tools, more… Eg. MIT Media Lab

Collaboration

Conferencing
Meeting
Conversation
Co-creation
Teaming
Networks

Online collaboration becoming more immersive, more multimedia. Eg. Second Life, Adobe Connect, Elluminate; capture tools more prevalent. Collaboration more mobile as well – don't forget recording and capture.

Interaction

Games
Simulations
Training
Learning Objects

Game-based learning becoming widely accepted; games and simulations becoming more realistic; new tools and mod kits to help people program their

Information

Lectures
Books
Conferences
Pages
Video

Information becomes free and ubiquitous; easily found via personalized semantic social networks; data becomes embedded into learning resources.

The Principles

1. Diversity

We want to encourage students to
engage in diverse readings, diverse
environments, diverse discussions

The Principles

2. Autonomy

We want students to chart their own course, to select their own software, to pursue their own learning

The Principles

3. Interaction / Connectedness

The knowledge in this course emerges as a result of the connections among the students and staff – and is not some 'content' shoveled from experts to recipients

The Principles

4. Openness

We don't draw barriers between 'in' and 'out' – which means we can accommodate the full engaged, the partially engaged, and the rest – creating strong ties and weak ties

Thanks!

http://www.downes.ca