



Center for  
**LifeLong  
Learning  
& Design**

University of Colorado at Boulder

**Wisdom is not the product of schooling  
but the lifelong attempt to acquire it.  
- Albert Einstein**

## **Learning Webs and Web 2.0**

**Gerhard Fischer and Hal Eden  
Spring Semester 2007, April 18, 2007**

**Ivan Illich:** Chapter 6: “Learning Webs” in “Deschooling Society” (1971):

<http://reactor-core.org/deschooling.html>

**and/or:**

**Tim O'Reilly:** “What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software”

<http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>

# Answers

- all people read the article by O'Reilly
  
- experience / interest in Web 2.0 Technologies:
  - **Yingdan**: Flickr = most interesting Web 2.0 system
  - **Brian**: upcoming.org
  - **Andy**: RSS feeds
  - **Tyler**: Twitter
  - **Praful**: delicious (consumer), Wikipedia (active participant)
  - **Michael**: Wiki expert: participatory level (meta-design), temporal level (perpetual beta)
  - **Jessica / Joe**: Ebay, BitTorrent
  - **Jason**: dig.com
  - **Corey**: forums = most important Web 2.0 technology (cars)
  - **Brian / John**: 3D Warehouse, SketchUp Forums

## Tim O-Reilly Blog: “NSF Looking for a Better Wiki”

[http://radar.oreilly.com/archives/2007/02/nsf\\_looking\\_for.html](http://radar.oreilly.com/archives/2007/02/nsf_looking_for.html)

- NSF award to the University of Colorado for “SGER: A New Generation Wiki for Supporting a Research Community in Creativity and IT”
- The proposed research will create environments that go beyond existing Wikis (being primarily focused on hypertext) to permit the integration (not just attachment) of other forms of media ranging from movies and animations, to sharing of datasets, to the creation and utilization of social network information to support community interaction, to conceptual mind-mapping media.
- It will be interesting to see what comes of it. The wiki idea of shared editing is clearly a huge idea. I'd be surprised if many of the innovations the grant is seeking don't come out of the commercial marketplace, but it would be great to see some additional sources of innovation, especially if the results are open sourced. There was no word on what the license terms will be for the resulting work.

# SGER: A New Generation Wiki – The Proposed Research

- examine how current wiki-like environments are limited in supporting the different ways in which creative people might represent and contribute to a body of knowledge and study what other types of objects, context and interfaces (beyond hyperlinked text) would be desirable, usable, and useful
- analyze and create specifically the following entities: mind maps, videos, anecdotes/stories and how these could be designed to allow them to be readily and rapidly developed and extended by participants
- explore different (potentially intertwined) "modes" interacting with such an environment (including: face-to-face activities, synchronous, and asynchronous activities)
- utilize new paradigms (such as the emerging Web 2.0 framework) for developing systems that are open and extensible, permitting the inclusion of new forms of information and representation within the community memory.

# Issues / Question Raised by Ivan Illich

<written in 1971 — 20 years before the WWW>

- to conceive a different style of learning (than learning in schools)
- people are learning many things outside of schools
- Illich's objectives:
  - we can depend on self-motivated learning instead of employing teachers'
  - to bribe or compel the student to find the time and the will to learn
  - we can provide the learner with new links to the world instead of continuing to funnel all educational programs through the teacher

# Criteria for a Good Educational System

- provide all who want to learn with access to available resources at any time in their lives
- empower all who want to share what they know to find those who want to learn it from them
- furnish all who want to present an issue with the opportunity to make their challenge known

# Four Approaches

- reference services to educational objects
- skill exchange
- peer-matching
- reference services to educators-at-large

# Distributed Cognition

- **between:**

- human beings
- humans and things (computational artifacts)

- **advantage of humans:**

- shared understanding
- background knowledge

- **advantage of things** (Illich, p 125):

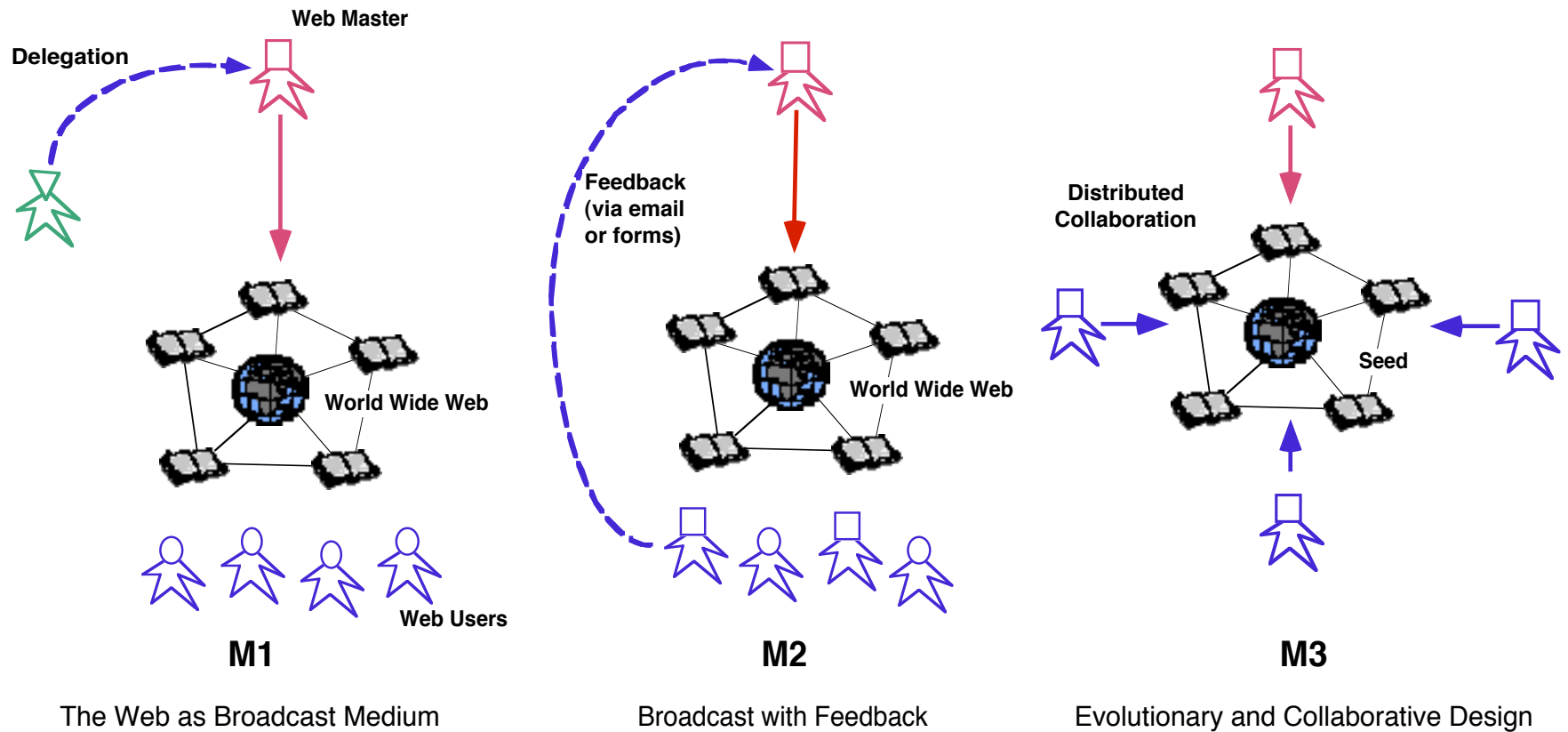
*“a thing is available at the bidding of the user - or could be - whereas persons formally become a skill resource only when they consent to do so, and they can also restrict time, place, and methods as they choose.”*

→ the “Nobel Prize Winner / Distant Learning” fallacy



# WWW: From Broadcast to Collaboration Medium

(1996: Fischer, Ambach, Ostwald, Repenning>



# Web 2.0: Social Production and Mass Collaboration

- **source:** Tim O'Reilly "*What is Web 2.0 – Design Patterns and Business Models for the Next Generation of Software*"  
<http://www.oreilynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>

## Web 1.0

Britannica Online

personal website

publishing

content management systems

scheduled software releases

individual contributions

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## Web 2.0

Wikipedia

blogging

participation

wikis

continuous improvements

collective intelligence

- **claim:** network effects from user contributions (= knowledge sharing, social knowledge construction) are the key to market dominance in the Web 2.0 era
- **hypothesis:** meta-design is a conceptual framework for Web 2.0

## An Example: 3D Warehouse

[http://sketchup.google.com/product\\_3dwh.html](http://sketchup.google.com/product_3dwh.html)

- 3D Warehouse: a feature of Google SketchUp that lets you search, share, and store 3D models
  
- The models in the 3D Warehouse include everything for your 3D world: buildings, houses, bridges, statues, sculptures, couches, cars, people, pets, and much more.
  - From within Google SketchUp or using a standard web browser you can launch a search of the thousands of models stored in the 3D Warehouse.
  - You can download the 3D models you like best to use in your SketchUp models.
  - If the model has a location on earth, for example, a building located in Boulder, Colorado, you can also download it and view it in Google Earth.
  - You can also share your favorite 3D models by uploading them from Google SketchUp into the 3D Warehouse.

# Web 2.0 — Putting Owners of Problems in Charge

- **Web 2.0**

- enables interactive social computing applications
- empowers everyone to become a designer / publisher

- **claims:**

- it no longer takes a team of programmers, graphic designers, and content authors to create a compelling web experience
- Web services and related technologies allow owners of problems (with some digital literacy) to create new services out of existing ones (mash-ups) with a reasonable effort

- **questions:**

- What are the cultural implications as more and more people publish?
- Is there a limit to how many people will publish?

## The “WE” in the Web



# Quality and Trust

- **open source software** versus commercial software
  - “if there are enough eye balls, all bugs are shallow”
- **Wikipedia** versus Encyclopedia Britannica
  - <http://www.nature.com/nature/journal/v438/n7070/full/438900a.html>
- South Korea's stem cell scandal → the results were published in **Science** and **Nature** (two of the most carefully reviewed journals)
- Popper's theory about **falsification**:
  - truth content of our theories cannot be verified, but can only be falsified
  - interplay between tentative theories (conjectures) and error elimination (refutation)