



2005

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eLearning eTraining eKnowledge

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# Standards, what standards?



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# Online Learning: Reflections on the Evidence

e-portfolios:

Using Personal Learning Spaces  
for Reflection & Evidence of Achievement

# eAgenda Scope

- e-Learning
- e-Training
- e-Knowledge
- e-Research
- e-Education
- e-Skilling

+ ICT Standards



Interoperable e-Infrastructure

# Key Context

- Convergence of e-infrastructure
  - e-learning
  - knowledge management
  - performance support
  - and more ...
- The *services* mantra
- The *open* mantra
- Increasing complexity

# Evidence

## April 2005: IBM Joins Educational Open-source Sakai Project

"Embracing Sakai fits with IBM's overall business model, which is focused on *open architecture*, *open standards* and *open source* as the keys to faster innovation in all industries."

Patrick Carey, IBM

<http://www.umich.edu/news/?Releases/2005/Apr05/r042605a>

# Venues for Learning

- Individual
  - home, workplace, leisure, ... socially
- Community of Practice
  - Co-located
  - Geographically distributed, networked, virtual
  - As narrative & discourse
- Organization
  - Physical environment
  - Abstract environment
    - » Strategic
    - » Operational
  - Virtually, in cyberspace



*Lifelong learning for All!*

# Visions



“Convenient, effective, affordable, and profitable learning available to every learner and teacher worldwide.”



“Provide access to the highest quality education and training, tailored to individual needs, delivered cost-effectively, anywhere and at any time.”



“(LTSC) is chartered ... to develop accredited technical standards, recommended practices, and guides for learning technology.”



**SC36**

“the pre-eminent international forum for standards development in information technology for learning, education, and training.”

# Visions

“The Global Knowledge Economics Council (GKEC) is an organization formed to discuss and select macro-, meso-, micro-, and firm-level plans, policies, and metrics to measure and increase efficiency of knowledge markets and the quality of knowledge at all levels.”





# Evidence

“Consider, if you will, **Me++**.

I consist of a biological core surrounded by extended, constructed systems of boundaries and networks. These boundary and network structures are topological and functional duals of each other. The boundaries define a space of containers and places ... while the networks establish a space of links and flows. Walls, fences, and skins divide; paths, pipes, and wires connect.”

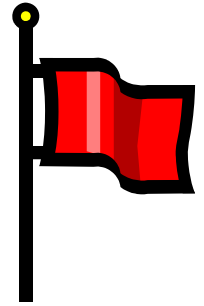
William Mitchell (2003). *Me++ : The Cyborg Self and the Networked City*, Cambridge, MA: MIT Press

# Key Question

*What standards are needed in order to build sustainable and supportive infrastructures for learning, education, training, research, and KM?*



# What Standards?

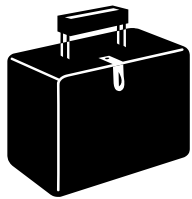


Three broad kinds:

- Standards **specifically purposed** to support learning, education, training, research, and KM
- Standards not specifically purposed to support learning, education, training, research and KM but are still **essential in enabling** it
- More widely deployed standards that **may be useful** for learning, education, training, research, and KM

# Dualities

## Boundaries



- Packets
- Components
- Content Packages
- Containers
- Collections
- Repositories
- LMS/MLE

## Networks

- Connections
- Relationships
- Systems
- Processes



Defined  Porous

Open  Closed

# Standards ...

- Utilize and define **boundaries & interfaces**
- Enable **networks**
- Facilitate development of **systems**
- Stimulate & capitalize on **innovation**
- Promote **interoperability**

# Conceptual Challenges

- **What is content?**
  - new data-types & object-types constantly appearing
- **Movable boundaries**
  - Content, context, & learning activities
  - Objects, collections, repositories, ... & federations
  - Data, information, & knowledge
- **Modeling knowledge & learning**
  - Complex Adaptive Systems



*Content is in the eye of the beholder*



*Learning Technology & Knowledge  
Systems must evolve into supporting  
complex processes*

**A metaphor?**



Content = Wine

Container = Bottle

Metadata = Label

*...but all made of different stuff!*



# Modeling the Problem Space

- Key Concepts
- Processes & Functions
- User Requirements & Use Cases!
- What Technology can Do Now
- What we want Technology to Do

**Components – Services – Frameworks**

# ELF – The E-Learning Framework (JISC-DEST++)



<http://www.e-framework.org/>

# e-portfolios

- What standards are needed?



- Identity & Access management
- Portable, validated student records
- Competency classification & validation
- Multiple repository/device interfaces
- Content management
- ... (User Control!)

**Trust  
Infrastructure**

- Who will be the trusted service providers?

- Universities unlikely to be sufficient in long term
- IT vendors do not have a lot of "trust equity"

# Summary Questions?

- Has the eAgenda been adequately scoped?
- What is there to say about eKnowledge?
- What standards are needed in order to build sustainable and supportive infrastructures for learning, education, training, research, and KM?
- Have (new) orthodoxies already formed?
- Who can you trust?
- How do we take these conversations forward?

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