Semantic and Social Media in a world 'upgrading' to Web 3.0

Research in the Learning Societies Lab

Thanassis Tiropanis - tt2@ecs.soton.ac.uk





topics

- · learning societies lab: research themes and activities
- Web 2.0 promises for learning communities
- Web 3.0 expectations
- what Web 3.0?



and Computer Science developing nations e-assessment

Digital cipraries, m-learning, and Learning Objects and Repositories.

Interaction with knowledge and semantics



Initiatives such as the Semantic Web are promoting the idea that knowledge can be described and exchanged, but the descriptions that machines use are far more formal and focused than those used by people exchanging ideas and recording their everyday lives. It is therefore important to try and bridge the gap between how people and machines express information, for example by using tagging, annotation, concept mapping, semantic hypertexts, folksonomies and narratives.

Virtual communities and social systems



A new generation of social applications is changing the way in which people are organising themselves and interacting with each other. LSL is researching collaborative systems, tools for group formation, virtual environments, games and social networking.

Accessible technologies



Technology offers new possibilities for supporting accessibility. LSL is investigating how speech recognition can be used to caption multimedia to make learning more inclusive, interactive, flexible, productive and engaging, and is exploring the e-learning experiences of disabled learners including accessible e-learning, compatible assistive technologies and effective learning support.

Innovation in science, engineering and technology education



Science, Engineering and Technology have been identified amongst the strategic and vulnerable areas in UK Higher Education. LSL is looking to identify, investigate, develop and evaluate educational innovations which can impact directly and enhance the student experience.

learning

nmerce ehealth elearning lici html hypertext im instant messaging javascript knowledge management knowledge representation learning linked data machine learning mcommerce mhealth mobile computing mobile phone mobile web multimedia music mysql narrative ontologies open

hypermedia pervasive

computing php recommender systems running running/jogging sailing Security semantic annotation

semantic

applications semantic web services semantic wiki semantic wikis sensor serious games service-oriented architectures service oriented computing maring simulation in e-learning soa social

hypertext SOCIAL

networking social networks

social semantic technology social business, agile methods, agile it, computer supported learning, education quality and standards, software engineering speech recognition squash tagging technology technology enhanced learning technology-enhanced learning telemedicine twitter ubiquitous computing ubuntu uml usability user interface design user modeling video games video gaming virtual communities virtual research imenos virtual worlds vie web

2.0 semantics mased information web design web science web services web2.0 we___0 accessibility w___3.0

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LSL themes

- Technology enhanced learning
- Interaction with knowledge and semantics
- Virtual communities and social systems
- Accessible technologies
- · Innovation in science, engineering and technology education

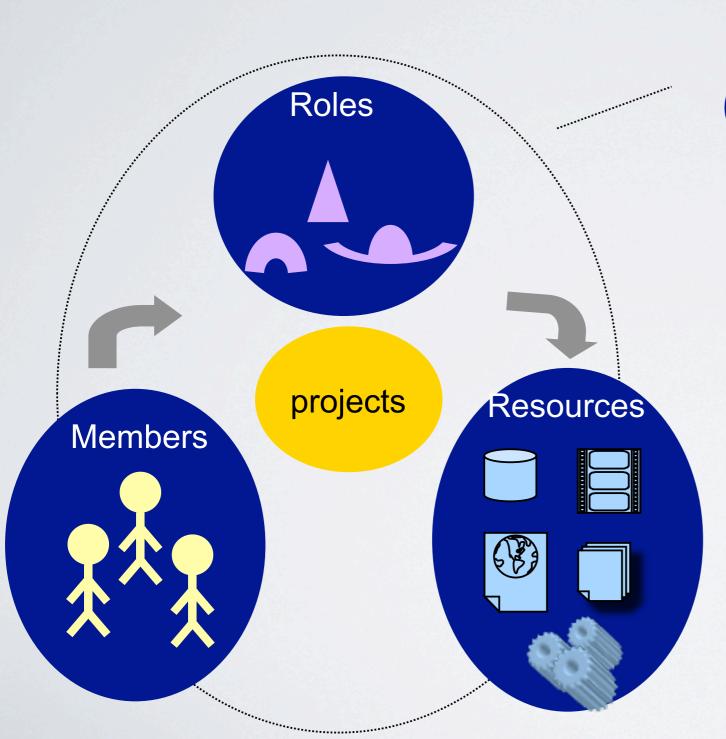


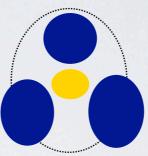
everyone is learning & School of Electron and Computer Stand Compu

- · engaging in formal or informal learning
- · interacting with co-learners, colleagues, friends
- fulfilling their roles as members of communities or social groups
- having different accessibility requirements depending on abilities, preferences, modi operandi
- wishing to learn more using tools with innovative interaction, pedagogy, knowledge organisation

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concepts in learning communities



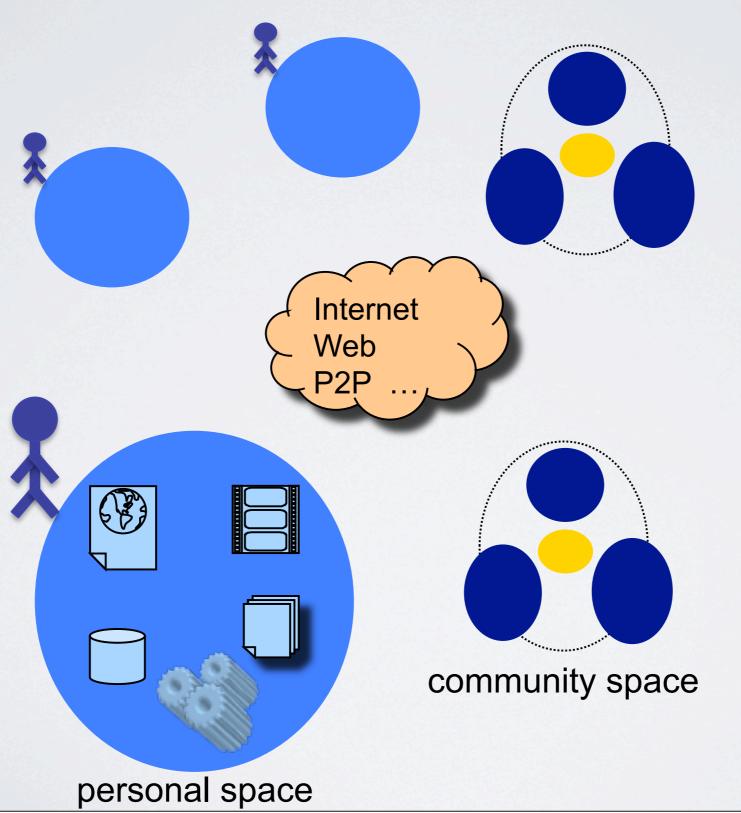


- formal and informal learning processes
- collaboration
- accessibility
- content management
- infrastructure



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learning community infrastructure



Web 2.0 potential for sell learning communities

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- Web pages as interactive applications
- The Web as a knowledge repository
- The Web as a platform for collaboration
- The Web as a platform for social networking
- The Web as middleware

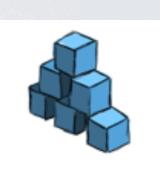


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- Organise, share, collaborate in Education
- Visibility of contributed resources on different levels
- Description and tagging of resources









- Supporting the Deposit Once model
- Working with VLEs and HE institutional repositories
 - Deposit once in a VLE propagate to Edu repositories
- A cloud-computing architecture, where communityrepositories are application views on the institutional repositories that have been integrated with a VLE

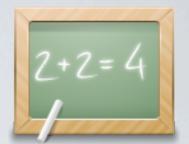




Web2Access.org.uk



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- There are so many Web 2.0 services out their that we cannot find what is really relevant
- Can we know what each toolkit does? What modes of collaboration are supported?
- Web2Access evaluated a number of Web 2.0 toolkits based on their support for accessibility an their teaching and learning potential



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Semantics in a web 2.0 world?

- TAGS, TAG CLOUDS, HIERARCHIES in BLOGS, WIKIS, REPOSITORIES
- Soft semantics
 - Meaning in formats that humans can process
 - Lightweight knowledge modelling in Web 2.0 applications
- Hard semantics
 - Meaning in formats that machines can process
 - Processing is independent of domain specific schemas

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Web 3.0 expectations

- Transition from soft Web 2.0 semantics to hard machine processable semantics
- Meaningful and accessible discovery and interaction with people and resources on a large scale
- Collaboration and learning across disciplines
- Intelligent content organisation and management
- Pedagogy aware applications, bringing together learners and resources in formal or informal contexts

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Two visions on Web 3.0

- Top-down approach
 - We design an ontology
 - We expect the rest of the world to adopt it and use it
- Bottom-up approach
 - We expose our data in interoperable linked data formats
 - Others may map linked data to ontologies for specific applications

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which Web 3.0? :-)

- The Semantic Web / Web of Data / Linked Data
- Mobile Web
- Super High Broadband
- Virtual Worlds?
- Other?





SemTech

- · A survey of semantic technologies for higher education
- · A roadmap of semantic technology adoption in the future
- Examining the potential of a linked data infrastructure in this domain

SemTech

- Distinction between hard and soft semantic technologies
- Transition for soft semantics from Web 2.0 applications to hard semantics in Web 3.0 formats

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surveyed semantic technologies

semtech-survey.ecs.soton.ac.uk

Collaborative
Authoring and
Annotation

Searching and Matching

Repositories, VLEs and Authoring tools

Infrastructural
Technologies for
Linked Data and
Semantic Enrichment

Southampton a roadmap of sem tech adoption recience

STAGE 2: Ontology-based applications

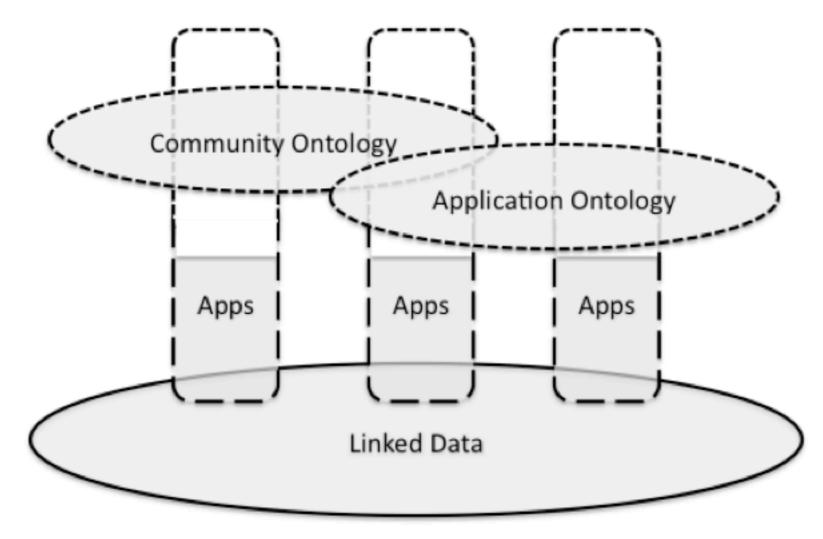
(Ontology building, mapping linked data, applications)

ArnetMiner

STAGE 3: Pedagogy-aware reasoning

(Collaborative ontology building, pedagogy in reasoning)

Compendium, Debategraph



STAGE 1: Linked Data Field

(Triple stores, SPARQL endpoints, RDF)

RDFisers, TALIS, Virtuoso, Collibra, dbpedia.org, freebase.com



Thank you!

http://lsl.ecs.soton.ac.uk



