How will HE benefit from linked data?

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ALPSP workshop 1st July 2010
Semantic Technologies for learning and teaching

Welcome to the SemTech Survey

The SemTech Survey is a product of the SemTech project carried out by the Learning Technologies Laboratory at the University of Southampton.

The SemTech project is designed to provide a comprehensive overview of semantic technologies used in learning and teaching. This website allows you to see the landscape of semantic technologies relevant to the surveys and to make informed decisions about how they could be used in an educational context. You can view various technologies and their relationships with each other and the value that these technologies add to them. You can also view case studies of successful integration and services, frameworks, and methodologies.

To complete a semantic technology survey, visit the SemTech Survey (http://semtech.ecs.soton.ac.uk).
Linked Data Horizon Scan

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About
This Linked Data Horizon Scan was commissioned from Paul Miller of the Cloud Committee (JISC). The work was intended to provide an overview of current data to make a series of recommendations to JISC and the wider community.

The final report has been made available via JISCPress in order to facilitate the topics covered. The report is also available for download and printing as a PDF.

Funding
This work was commissioned, overseen and funded by the Joint Information Systems Committee (JISC).

Declaration of Interest
UK software company, Talsi, offers products to the education market that utilise the topics discussed in this report.

http://linkeddata.jiscpress.org/
The shape of this talk

1 – intro

2 – context(s) and findings

3 – some (affordance led) change (case study)

4 – future and conclusions?
The balance...

Hard semantics - pure
• Machine readable
• Rigorous modeling

Soft semantics - pragmatic
• Human readable
• Lightweight modeling
A case of mass exposure?

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Where the future lies…

“The people who will do cool stuff with your data… will not be you”

The data.gov model…

- Exposed data, good enough (“raw data now”)
- If possible using standards (like XCRI or RDFa…)
- Be a semantic squirrel
- Use the social web
  - Crowd sourcing
  - Shared development
  - Social communities

‘let computers do the tedious stuff’

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We want to climb over the walls…

Adapted from one used by tbl, originally from the economist I think

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Common data -> exposed -> shared -> RDF

- Public and private capital
- Across departments and institutions
- Enable workflows and collaboration
- Reporting, research returns
- Disseminate, share and reuse findings
- Attract funding
- Integrate knowledge capital
- Facilitate interdisciplinary initiatives
- Remove/reduce overheads (time to publication)

- Public and private capital
- Across departments and institutions
- Enable workflows and collaboration
- Report retention and progression
- Student recruitment
- Admission tariffs and course requirements
- Publish module specifications
- Publish accreditation data
- Dynamic data exchange between departments

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How do you model complexity?

Explore web site
Book open day
Investigate current admissions tariff
Compare five potential UCAS choices
Review league table performance
Change mind about study options at last minute
Examine HERO institutional profile
Find out who teaches in a department
Check out the dates of the next academic year
Consult the regulations regarding academic integrity
Download timetable
Make appointment with mentoring service
Reserve a library book
Find journal articles and put into collection
Book a meeting room
Select options
Review transcript
Construct learning portfolio
Create online CV
Submit a mitigating circumstances request
Review current marks profile
Identify tutor for failing student
Check marks profile of potential project student
Review institutional software portfolio
Let's rework Shotton's concept of semantic publication into the educational context.

**Semantic Publication**
- Include anything that enhances the meaning of a published information
- Facilitates its automated discovery
- Enables its linking to semantically related information
- Provides access to associated data in actionable form
- Facilitates the integration of associated data

Educationally we are talking about situated learning and rich learning environments.

This has to be done automatically.
Report findings

- Most of the identified HE challenges can be addressed by querying across institutional repositories (databases, web pages, VLEs)

- Significant learning and teaching challenges can be addressed by accessing resources across departments, schools, institutions

- The emergence of linked data fields across related repositories will enable new applications relevant to identified HE challenges

- The initial value of semantic technology will be in scale rather than reasoning

- Adopt a bottom-up approach starting from linked data which can be related to (layers of) ontologies later in the context of specific applications.
Report findings

- Semantic tools and services that map linked data to application specific ontologies will:
  - increase the value and impact of linked data
  - Motivate and drive community agreed ontologies alongside application specific ontologies which will empower semantic applications
  - emerge enable pedagogically aware applications through expressive semantics

- Students can use authentic (semantic/linked data enabled) tools and resources in real contexts for real tasks (digital literacies). This is particularly powerful for exploratory/informal/independent learning

- Some specialist teaching outcomes may be possible e.g. Argumentation and critical thinking skills could be developed through advanced reasoning over large volume of resources
Learning and teaching

Classroom administration
- Assisting course creation
  - Aggregate course and module information
  - Visible data -> dynamic analysis and feedback
  - Aggregate relevant resources and workflow
  - Streamline accreditation and quality processes

Learning activities
- Critical thinking and argumentation support
- Efficient personal and group knowledge construction
- Authentic learning
- Group formation
- Assessment, certification, countering/detecting plagiarism
- Learning in the wild
- Informal learning
- Self-actuated learning
- Aggregation, personalisation, customisation

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Tim Berners-Lee and Group of Boston Web Gurus Leading New MIT Class to Get Linked Data to Market
Erin Kutz 6/16/10

The usual sequence for high-tech entrepreneurs is to study, get a degree, get a job, then start a company and build a product. But a star-studded team of instructors for Linked Data Ventures, a graduate-level class premiering at MIT this fall, hopes to mix that up a bit. They envision the course as a direct launching pad for commercial efforts around linked data, a technology that World Wide Web inventor and course instructor Tim Berners-Lee is hoping will transform the way we glean meaning from the Web.

"It's not about theory," says Krasnow Waterman, another member of the Linked Data Ventures teaching team. She says the class is designed to really force students to get practical—and commercial—in a hurry. "We are just really excited to see people get out on the forefront and lead the way."

Linked data is the idea of assigning Web addresses to individual chunks of information, rather than just to documents, so that these chunks can interlink and lend meaning to one another. (Wade wrote about one example, True Engineering's "truenumbers," last summer.) It's an offshoot of the effort to build the semantic Web, which
Learning in the wild?

Real data
Real skills


1st July 2010
AFFORDANCE LED CHANGE
We use RDF – it saves time!

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Interests: e-learning, electronic lab notebooks, learning, research led learning, running, running/teaching, technology enhanced learning, virtual research environments

The group secretary for the Learning Societies Lab is Lauren J. Dampier

Biography
Su White – short CV April 2008

Su White is a Senior Lecturer in The Electronics and Computer Science at the University of Southampton. She is based in the Learning Societies Lab. Her research interests relate to the impact of technology on University Education from both an educational and organizational perspective.

Special interests include emergent technologies and pedagogies, disciplinary differences, assessment methodologies and the relationship between teaching and research. Su also works collaboratively with colleagues across the school to introduce and sustain educational innovations. Su has been PI or a major contributor on a large number of projects in the area of technology enhanced learning.

Su works collaboratively with colleagues across the school and university to bring about enhancements in the quality of our education. In 2005 Su was one of the recipients of the University of Southampton’s Vice Chancellor’s Teaching Awards for work developing approaches research-led learning in Computer Science. In 2003 Su established the ECS wide JumpStart induction programme for new undergraduates.
Dr Su A White: RDF

Resource Description Framework (RDF) is a family of World Wide Web Consortium (W3C) specifications originally designed as a metadata model using XML but which has come to be used as a general method of modelling knowledge, through a variety of syntax formats (XML and non-XML).

More Information about ECS RDF

Person URI: http://id.ecs.soton.ac.uk/person/95 (browse)
Role URI: http://id.ecs.soton.ac.uk/role/95 (browse)

Person RDF: http://ref.ecs.soton.ac.uk/person/95
Role RDF: http://ref.ecs.soton.ac.uk/role/95

Internal Person RDF: http://intra.rdf.ecs.soton.ac.uk/person/95
Internal Role RDF: http://intra.rdf.ecs.soton.ac.uk/role/95

Links through 1st July 2010

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COMP1002: Computer Systems and Applications (2009-2010)

Contents

- 1 COMP1002: Computer Systems and Applications
  - 1.1 Announcements
  - 1.2 Lectures
  - 1.3 Coursework
  - 1.4 Syllabus
  - 1.5 Contact Information
  - 1.6 Directed Reading
    - 1.6.1 What is expected...
    - 1.6.2 Networking and Operating Systems
    - 1.6.3 Languages and Coding
    - 1.6.4 Security

COMP1002: Computer Systems and Applications

Announcements

- 30.10.09: For the directed reading see the section at the end of this page.
Add some student generated content

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Tie in with the wild web...

Delicious Bookmarks for "INFO2009"

Note: These are taken unfiltered from Delicious, and may have been provided by anyone, not just the module teachers.

View all Bookmarks

Latest

Defra, UK - Adaptation in the Climate Change Act - Adapting to climate change

The Climate Change Act 2008 makes the UK the first country in the world to have a legally binding long-term framework to cut carbon emissions. It also creates a framework for building the UK’s ability to adapt to climate change. The Climate Change Bill finished its passage through parliament on 18th November 2008, and was enacted by Royal Assent on 20th November. (By skul) 2008-11-15T18:59:19Z

The A to Z of green IT - Management - Breaking Business and Technology News at silicon.com

A comprehensive article summarising issues associate with the EU WEEE directive and the UK Climate Change Bill. A is for Aircool, B is for Blades, C is for Carbon footprint, D is for Data centres, E is for Energy sources, F is for Freecycle, G is for Government, H is for Homeworiking, J is for Ice caps, J is for Jobs (Savings), K is for Kilo Watts, L is for Landfill, M is for Mercury, N is for Nanogeneration, O is for Offsetting, P is for Peerless office, Q is for Queen, R is for Recycling, S is for SmartPlanet.com, T is for Travelling, U is for Upgrade, V is for Virtualisation, W is for WEEE, X is for Xmas, Y is for You, Z is for Zero emissions. (By susu4) 2009-9-17T11:23:57Z

UK web e snooping plans: Full steam ahead - Public Sector - Breaking Business and Technology News at silicon.com

UK web e snooping plans: Full steam ahead News in brief: Government plans on with Interception Modernisation Programme (IMP), instant messaging, facebook, internet modernisation programme, web monitoring plans by silicon.com staff. Published: 11 November 2009 11:29 GMT The UK government has confirmed it intends to push ahead with plans to monitor the UK’s communications. Under the Interception Modernisation Programme (IMP), the government wants communications, (By susu4) 2009-11-12T16:52:15Z

2009 academic-integrity aem advice analysing analysis and annotated apple article bbc bcs bibliography book botnets businesslink careers case-study cd censorship citation citations climatechange computer computer-misuse-act computing convention copyright criticality culture cybercrime data-breaches data-protection dataprotection democracy denial-of-service dilemmas download dpa ecdl economics employability environment

Overview of the ECS School Ethics Committee

Describes the function and purpose of the ECS School Ethics Committee. (By susu4) 2009-11-12T11:22:15Z

Preparing an Annotated Bibliographies and overview of the Data Protection Act

Slides used in lecture, explaining coursework and providing an Introduction to the Data Protection Act. Students should use these resources as guidance for the forthcoming coursework (annotated bibliography). Like all materials you can expect slides to address issues which come up future assessment activities. (By susu4) 2009-11-27T22:57:57Z
Add some structure


Online Notes
Search notes and wiki:

- Notes Wiki
- Notes Directory
  - coursework1.pdf - 157K
  - Lecture-Schedule.pdf - 88K
  - friendface.txt - 32Mb

Core Resources
- Module resources, including directed reading, will be maintained on the module web site and the Wiki.

Delicious Bookmarks for "COMP6037"
Note: These are taken unfiltered from Delicious, and may have been provided by anyone, not just the module teachers.

View all Bookmarks

Latest
Networks, Crowds, and Markets: A Book by David Easley and Jon Kleinberg
@lascarr 2009-10-30T12:49:21Z

Jermigan and Mithme
@lascarr 2009-10-26T13:18:19Z

10 ways the Web has changed your life

Add some structure

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http://www.ecs.soton.ac.uk/~saw
Edshare web science

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http://www.ecs.soton.ac.uk/~saw
WHAT NEXT?

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http://www.ecs.soton.ac.uk/~saw
Southampton Learning Environment

Making it Rich and Personal: meeting institutional challenges from next generation learning environments
http://eprints.ecs.soton.ac.uk/21327/
Thank You 😊

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Selected references

- Tim Berners Lee - Design Issues: Linked Data
  http://www.w3.org/DesignIssues/LinkedData/
- Tim Berners Lee on the Next Web
  http://www.ted.com/talks/tim_berners_lee_on_the_next_web.html/
- Paul Miller (2010) Linked Data Horizon Scan – JISC report
  http://linkeddata.jiscpress.org/
- The Semantic Squirrel
  http://semantic-squirrel.org/
  http://www.ploscompbiol.org/doi/pcbi.1000361
  http://semtech.ecs.soton.ac.uk/
  http://eprints.ecs.soton.ac.uk/21327/
- XCRI
  http://www.xcri.org/Welcome.html/
Reframing the web…

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