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How will HE benefit from linked data?

Su White
saw@ecs.soton.ac.uk
http://www.ecs.soton.ac.uk/~saw/
ALPSP workshop 1st July 2010

Semantic Technologies for learning and teaching

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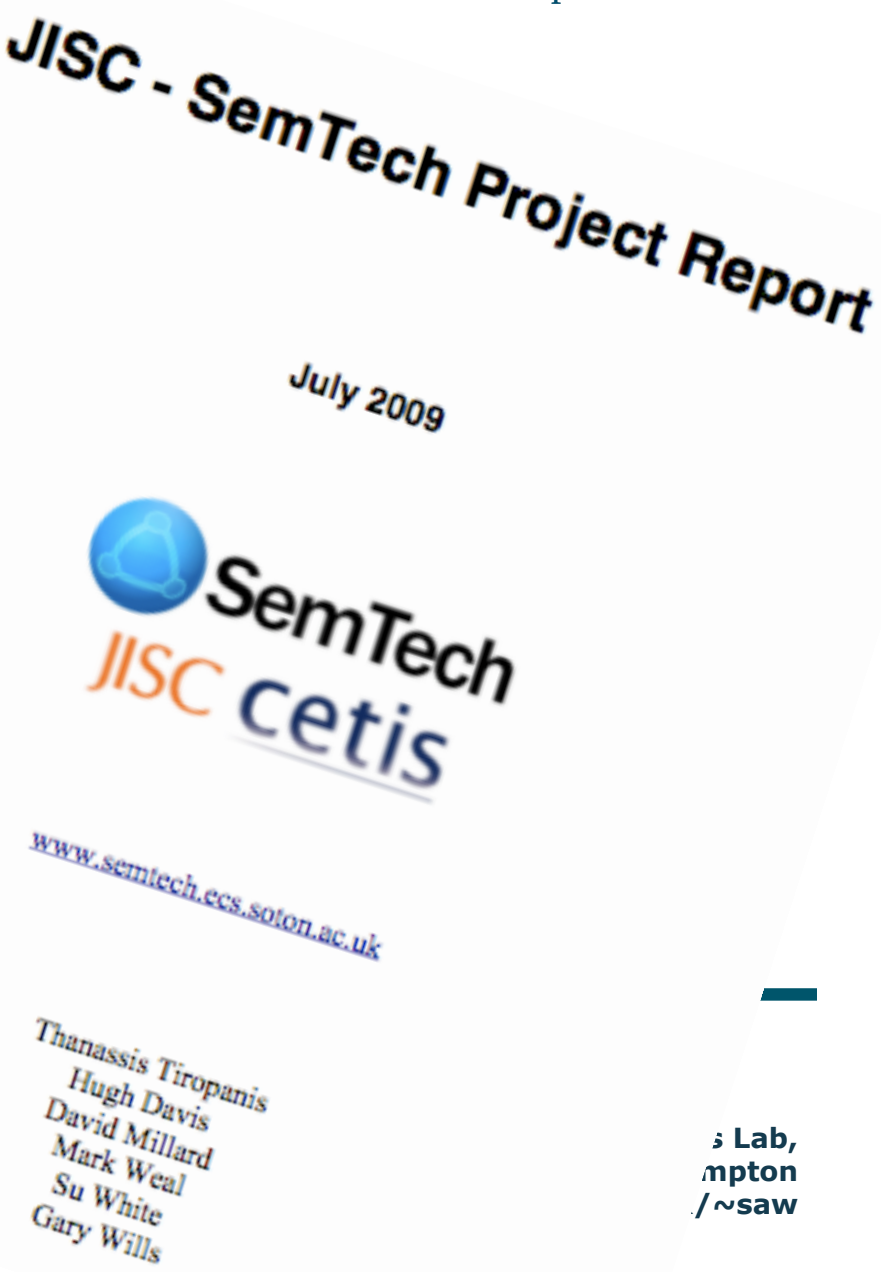

1st July 2010

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

s Lab,
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/~saw

acknowledge

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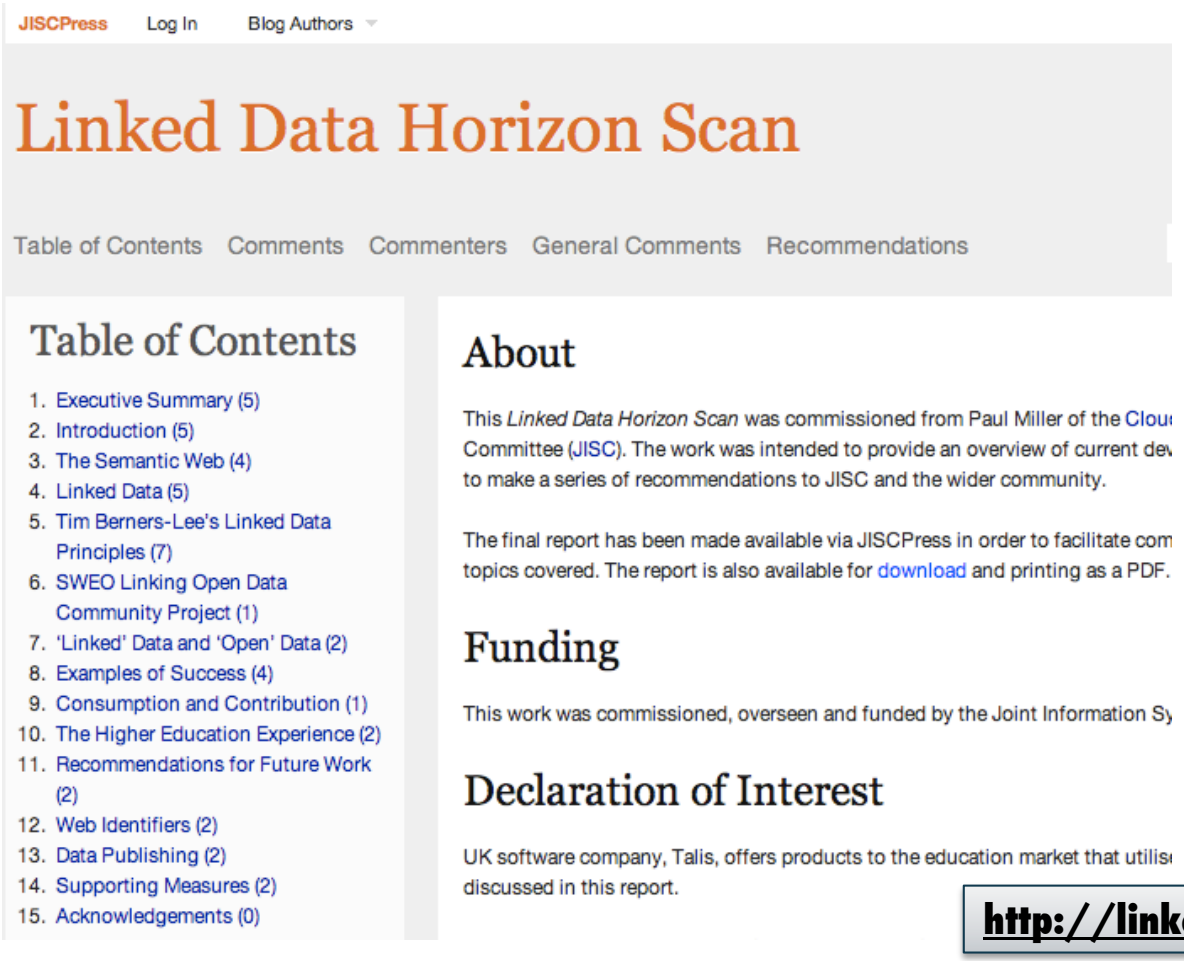

http://linkeddata.jiscpress.org/

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The shape of this talk

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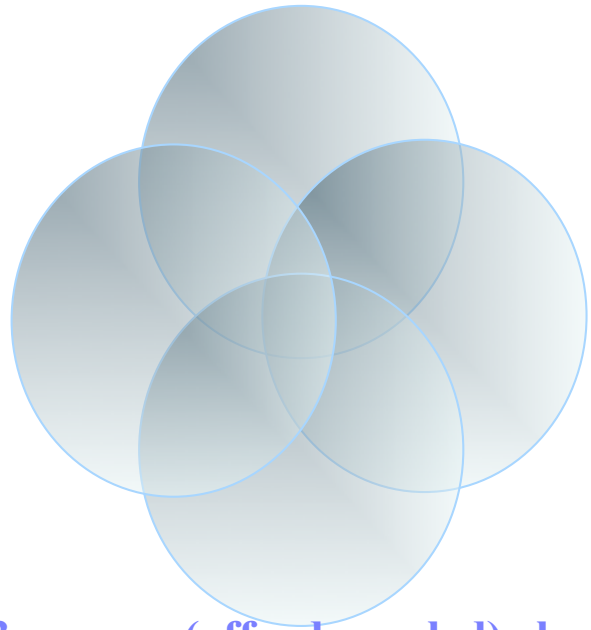
1 – intro



4 –future and conclusions?

2 – context(s) and findings

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

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The balance…

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Hard semantics - pure

- **Machine readable**
- **Rigorous modeling**

Soft semantics - pragmatic

- **Human readable**
- **Lightweight modeling**

A case of mass exposure?

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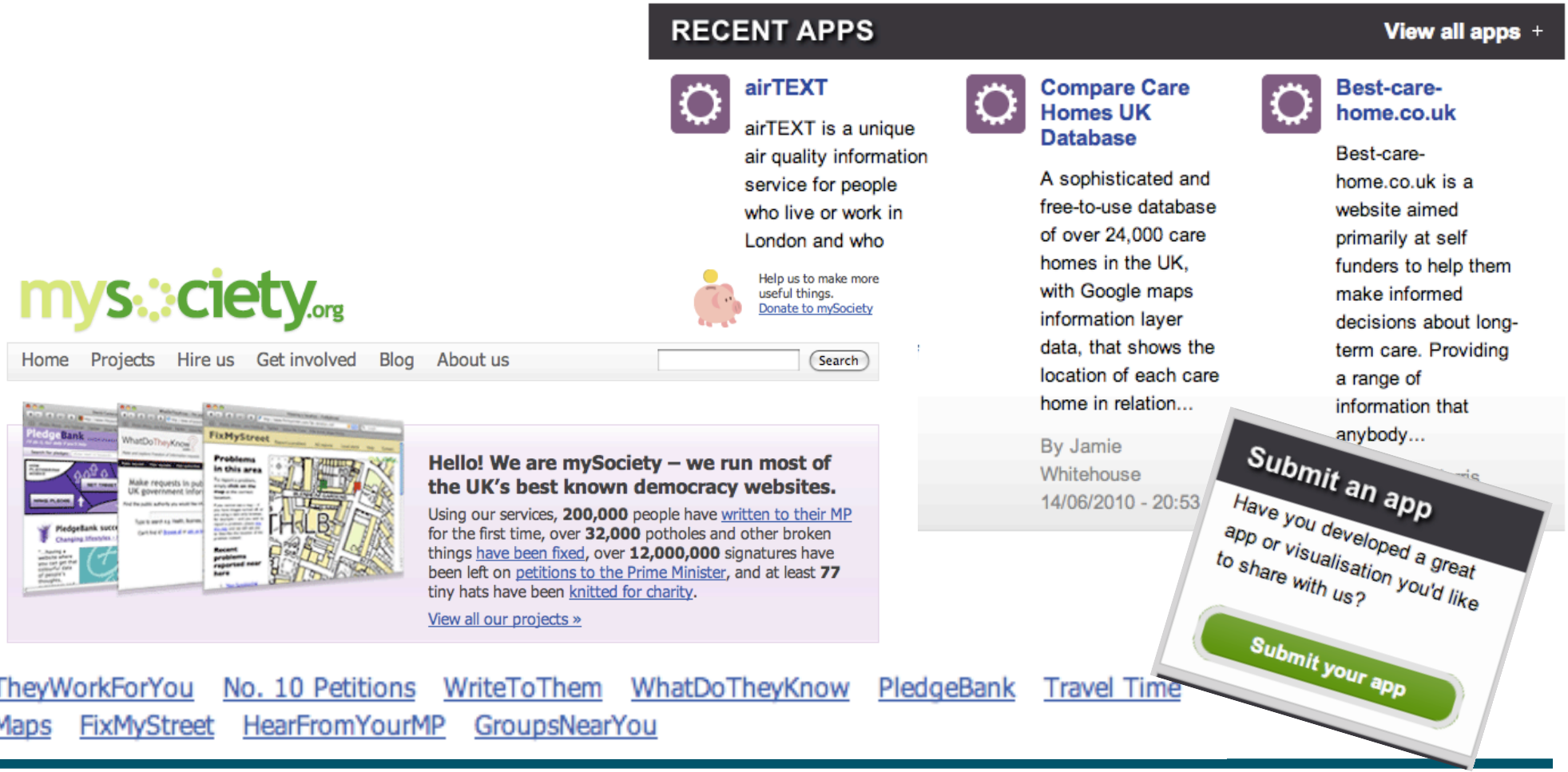

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Where the future lies…

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"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

http://semantic-squirrel.org/

- Use the social web
  - **Crowd sourcing**
  - **Shared development**
  - **Social communities**

'let computers do the tedious stuff'

We want to climb over the walls…

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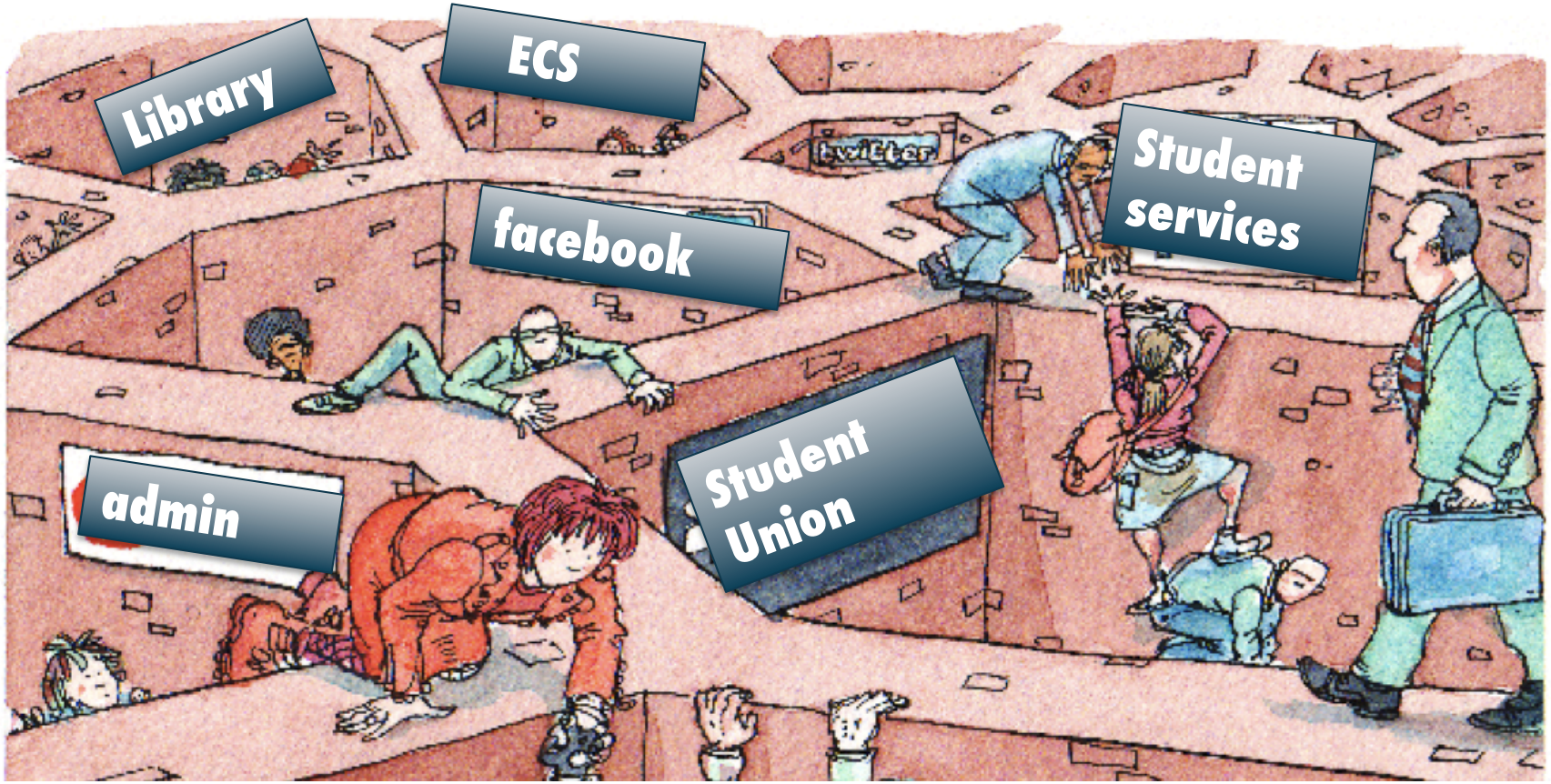

Adapted from one used by tbl, originally from the economist I think

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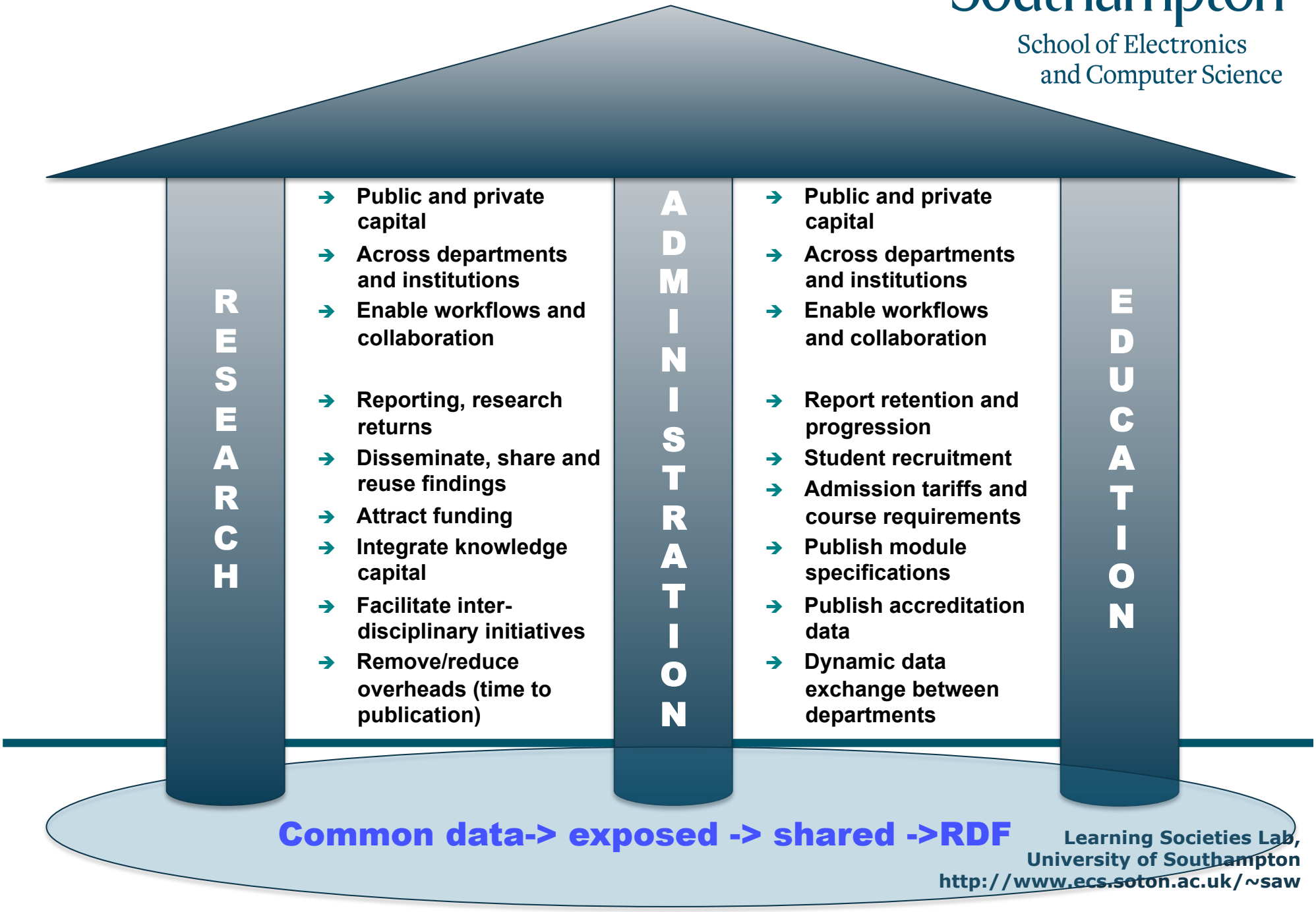

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How do you model complexity?

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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 minut
Examine HERO institutional profile
Find out who teaches in a department
Ch… …xt academic yea
Co… …academic integrity
…ble
…entoring service
…rangements

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN"
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<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:foaf="http://xmlns.com/foaf/0.1/"
    xmlns:dc="http://purl.org/dc/elements/1.1/"
    version="XHTML+RDFa 1.0" xml:lang="en">
  <head>
    <title>John's Home Page</title>
    <base href="http://example.org/john-d/" />
    <meta property="dc:creator" content="Jonathan Doe" />
  </head>
  <body>
    <h1>John's Home Page</h1>
    <p>My name is <span property="foaf:nick">John D</span> and I like
      <a href="http://www.neubauten.org/" rel="foaf:interest"
        xml:lang="de">Einstürzende Neubauten</a>.
    </p>
    <p>
      My <span rel="foaf:interest" resource="urn:ISBN:0752820907">favorite
      book is the inspiring <span about="urn:ISBN:0752820907"><cite
      property="dc:title">Weaving the Web</cite> by
        <span property="dc:creator">Tim Berners-Lee</span></span>
      </span>
    </p>
  </body>
</html>
```
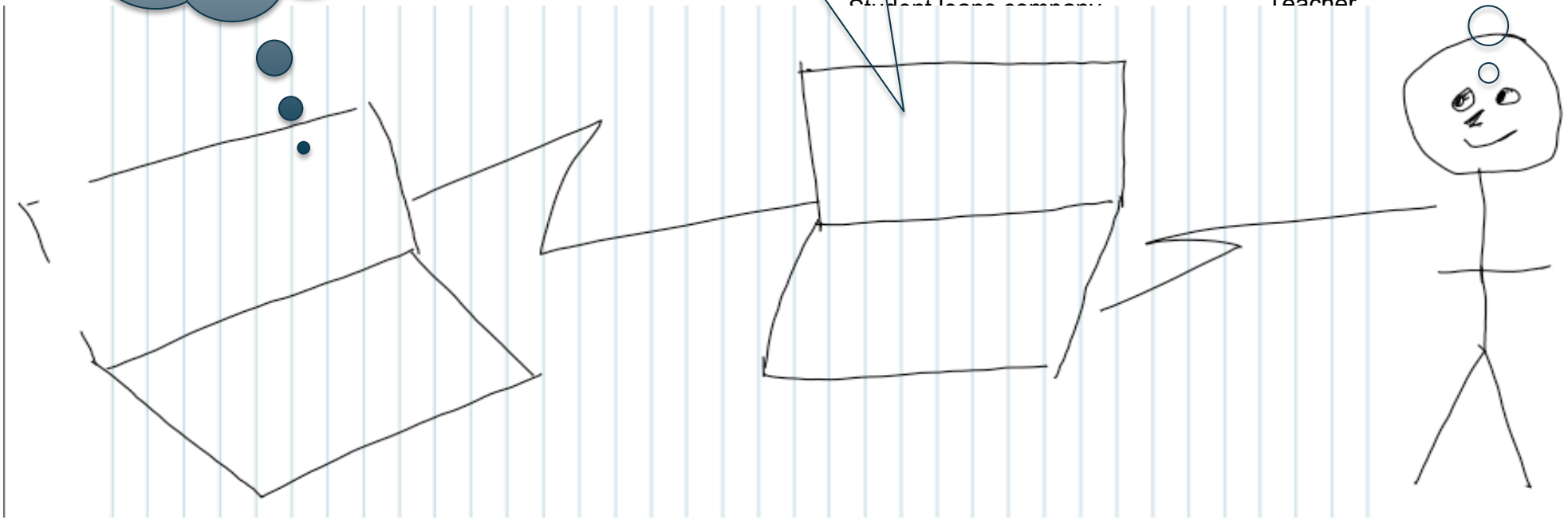

HERO
UCAS
…sevier
…ckwells
…IESA
…EFCE
…JUK
…el Group
…HEA
…HES
Guardian
Open Courseware
Registry
Student loans company

Stude…
Part-time…
Work-place…
Rece…
Re…
Alu…
PSB
Prospective Student
Tutor
Graduate Teaching Assistant
Lab technician
Part time tutor
Teacher



Backbone concepts

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- Lets 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

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- 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

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- 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

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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**

Linked data in the classroom

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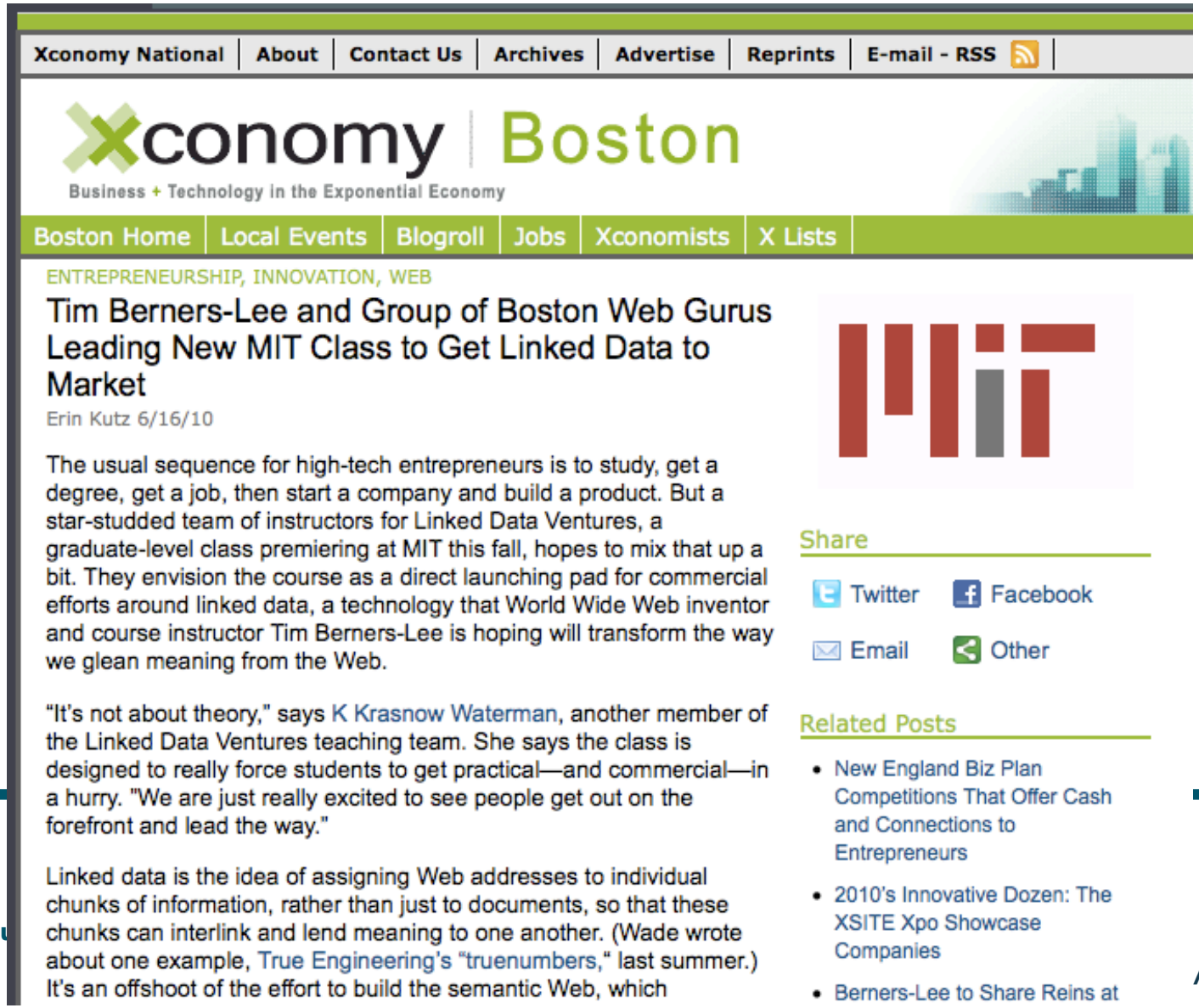

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ENTREPRENEURSHIP, INNOVATION, WEB

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 K 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

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- Berners-Lee to Share Reins at

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Learning in the wild?

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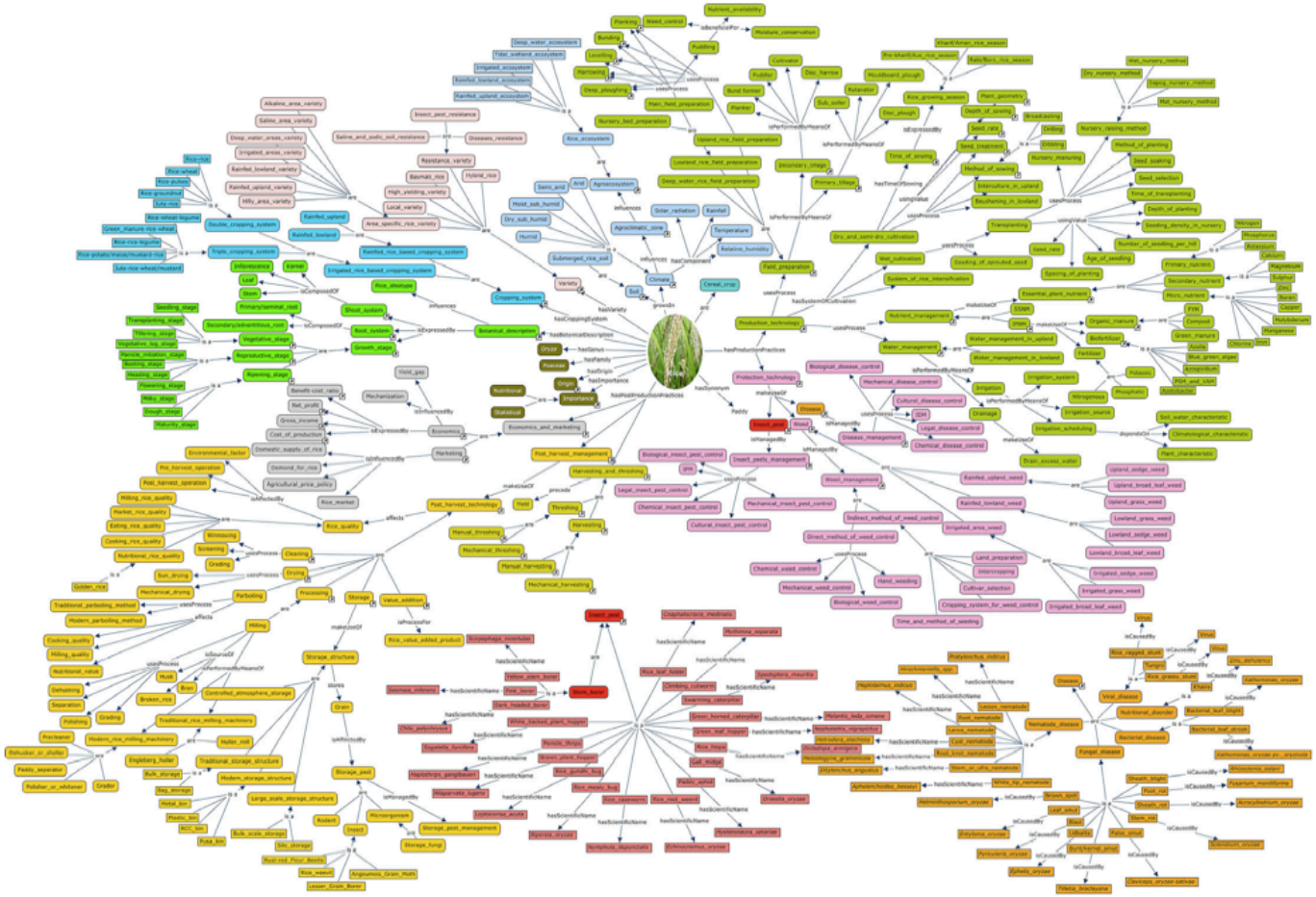

Real data

Real skills

http://www.mikeaxelrod.com/wp/wp-content/uploads/2009/01/agropedia_rice1.jpg

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Models and data (for learning)

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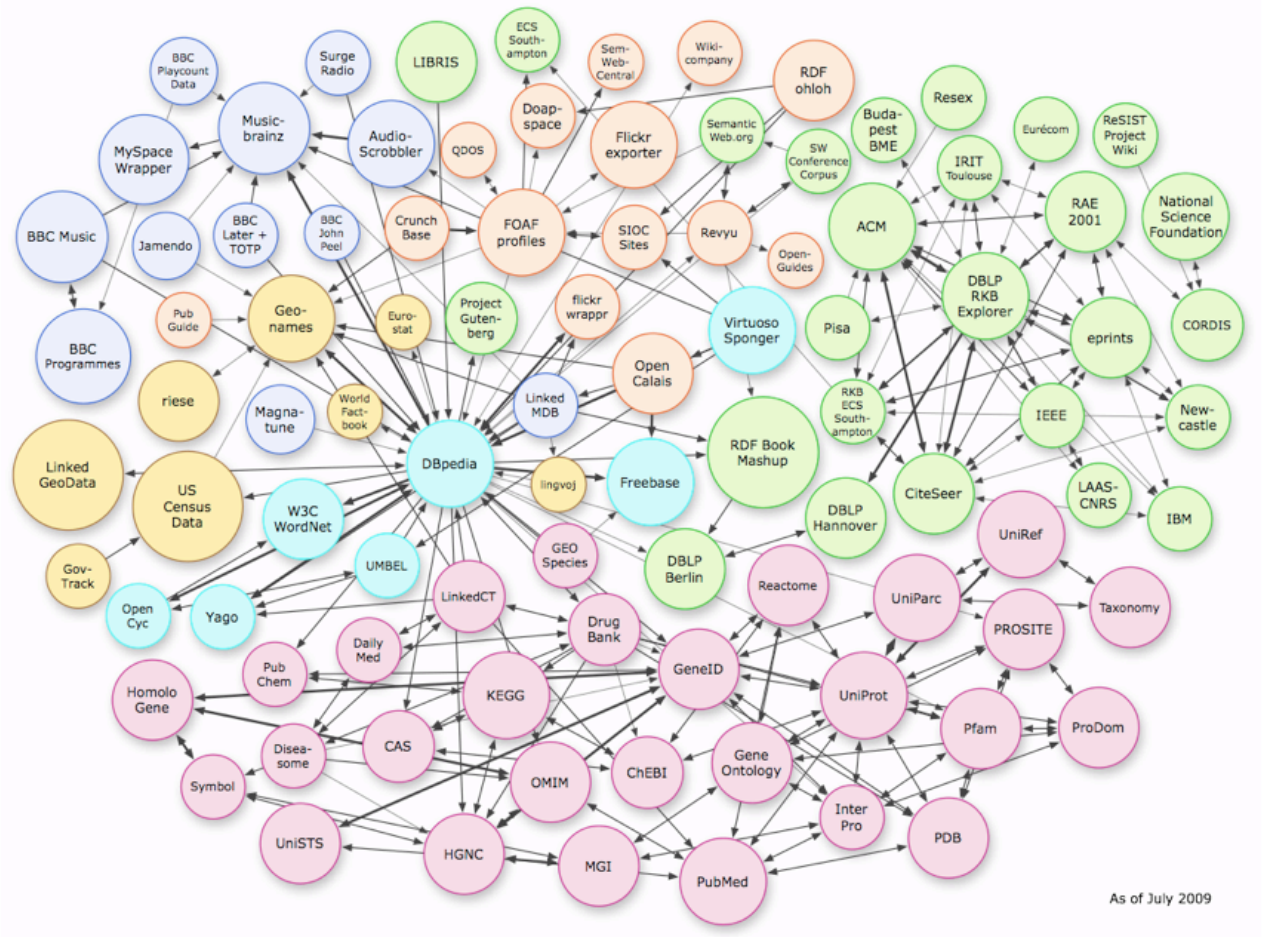

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some

AFFORDANCE LED CHANGE

1st July 2010

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We use RDF – it saves time!

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Dr Su A White
- Contact and Biography
- Research and Projects
- Publications
- Teaching
- Homepage

Internal Pages about Dr Su A White
- Intranet information
- Corrections

Search People

Enter a name here

Search

RDF vCard

Dr Su A White

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University of Southampton
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SO17 1BJ
United Kingdom

Position: Academic staff in Learning Societies Lab
Extension: 24471
Telephone: +44 (0)23 8059 4471
Email: saw@ecs.soton.ac.uk
URI: http://id.ecs.soton.ac.uk/person/95 [browse]

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

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

Dr Su A White

Su works with:

- Professor Hugh C. Davis (explain)
- Ilaria Liccardi (explain)
- Dr David E Millard (explain)
- Dr Gary B Wills (explain)
- Dr Thanassis Tiropanis (explain)
- Clare Hooper (explain)
- Dr Mark J Weal (explain)
- Professor AJG "Tony" Hey (explain)
- Dr Jessie MN Hey (explain)

This list of people is sourced from RKBExplorer, the result of an ECS project. Click on the "explain" link to the right of each person to find out how they are connected.
Note: the explain link requires heavy processing and may take some time to load.

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.

Links through

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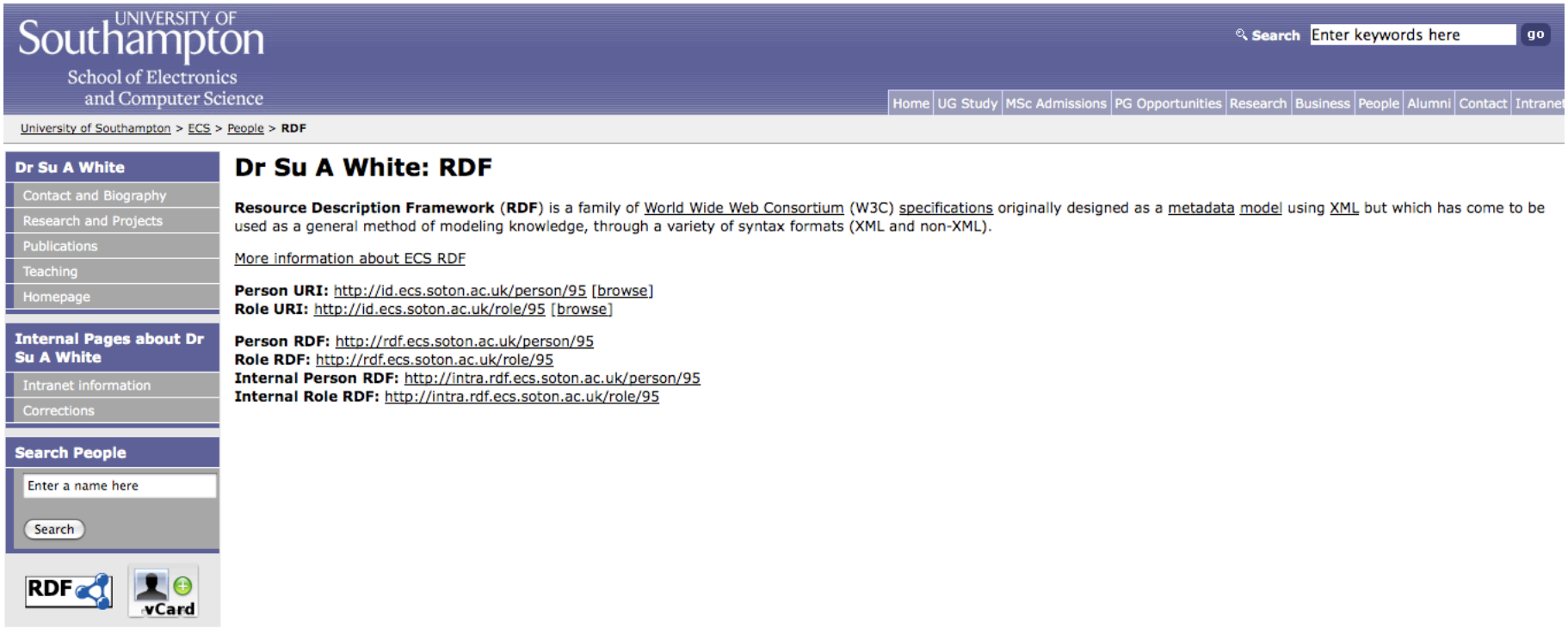

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2009

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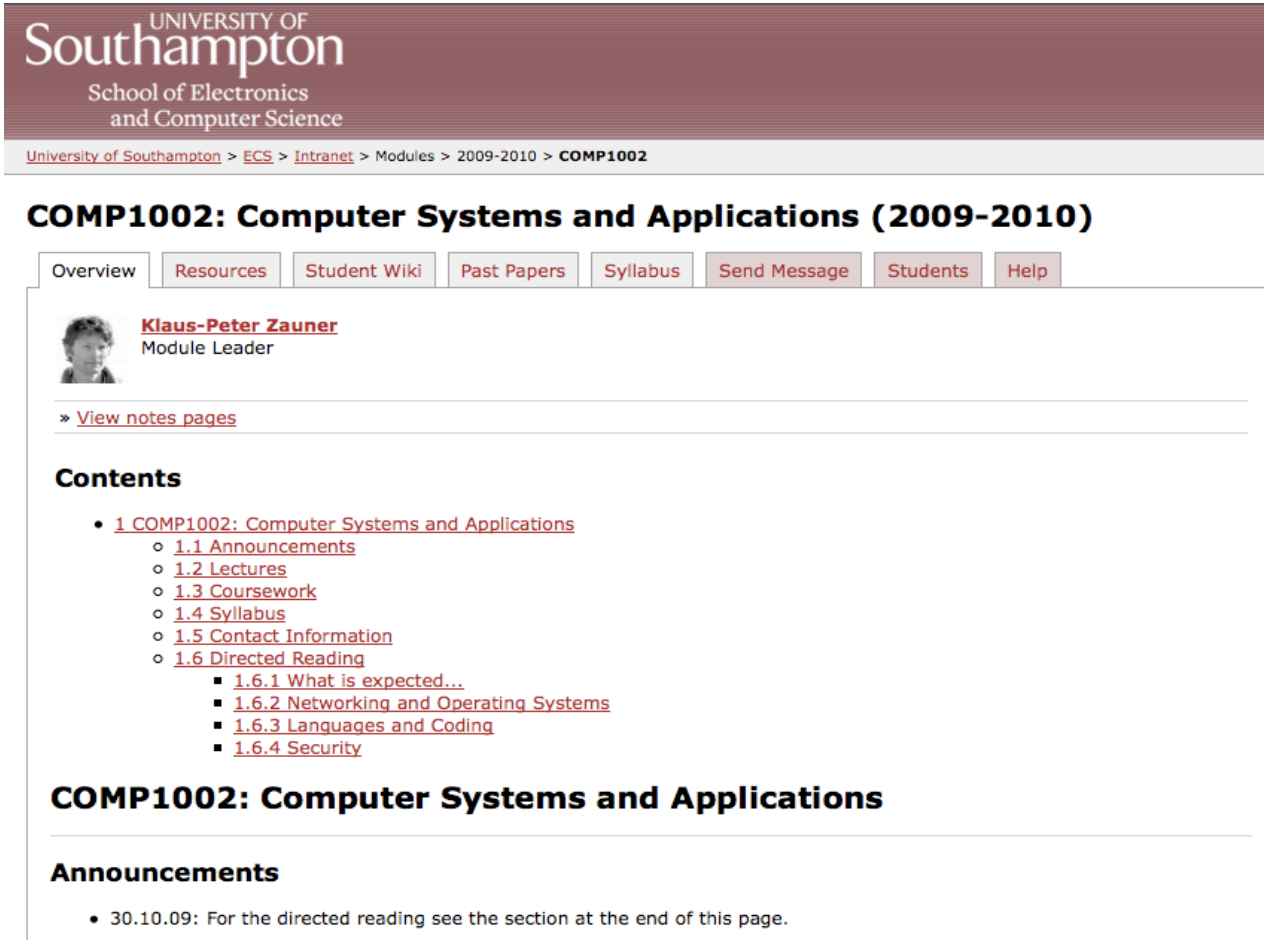

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University of Southampton > ECS > Intranet > Modules > 2009-2010 > **COMP1002**

COMP1002: Computer Systems and Applications (2009-2010)

Overview | Resources | Student Wiki | Past Papers | Syllabus | Send Message | Students | Help

Klaus-Peter Zauner
Module Leader

» View notes pages

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.

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Add some student generated content

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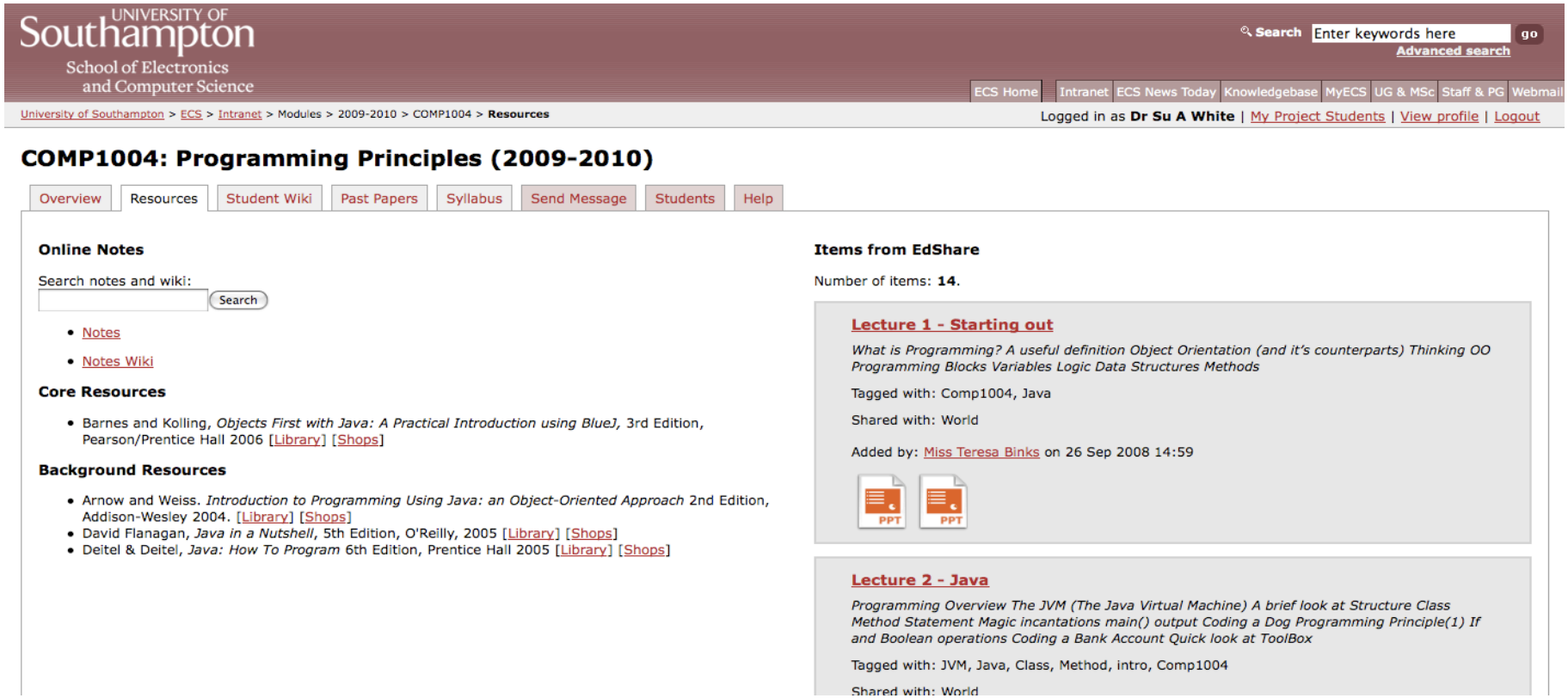

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Tie in with the wild web…

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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

he 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 26th November. *@suukii 2009-11-15T18:59:19Z*

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 Abroad; 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 Homeworking; I is for Ice caps; J is for Jobs (Steve) ; K is for Kilowatts; L is for Landfill; M is for Mercury; N is for Nanogeneration; O is for Offsetting; P is for Paperless office; Q is for Queen; R is for Recycling; S is for SmartPlanet.com; T is for Travel; 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; *@suukii 2009-11-12T16:22:15Z*

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

UK web snooping plans: Full steam ahead News in brief: Government ploughs on with Interception Modernisation Programme Tags: instant messaging, facebook, interception 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

2009 academic-integrity acm 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 critically culture cybercrime data-breaches data-protection dataprotection democracy denial-of-service dillemas download dpa ecdl economics ecs employability environment

Tagged with: handout, professional and legal issues, categorisation, topic areas

Shared with: World

Added by: Dr Susan White on 22 Oct 2009 15:40

PDF

Overview of the ECS School Ethics Committee

Describes the function and purpose of the ECS School Ethics Committee

Tagged with: Ethics, professional issues

Shared with: World

Added by: Dr Susan White on 15 Oct 2009 01:08

PPT

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 biblography). Like all materials you can expect slides to address issues which come up future assessment activities

Tagged with: dpa, Data Protection Act, privacy, bibliography, annotated bibliography, Coursework

Shared with: World

Added by: Dr Susan White on 27 Oct 2009 22:57

Add some structure

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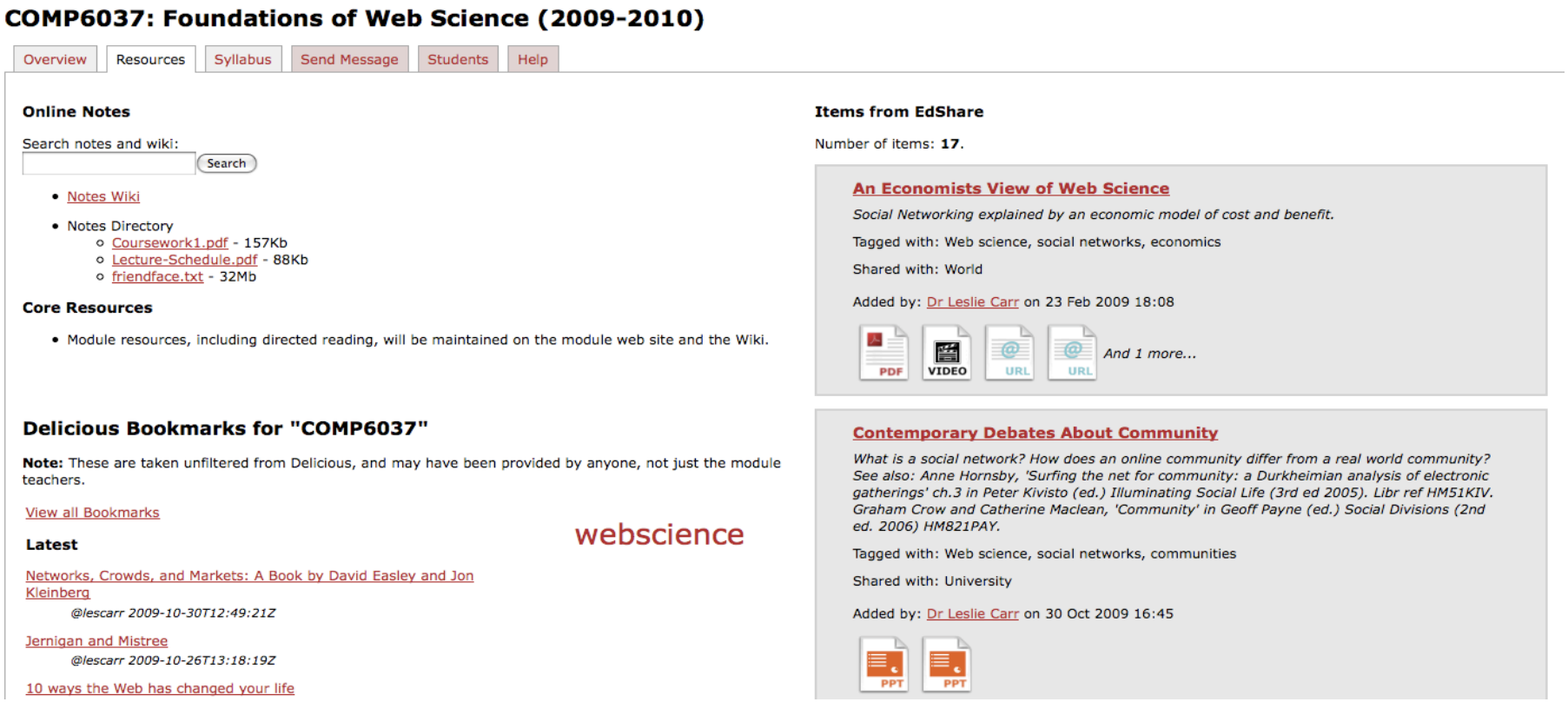

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Edshare web science

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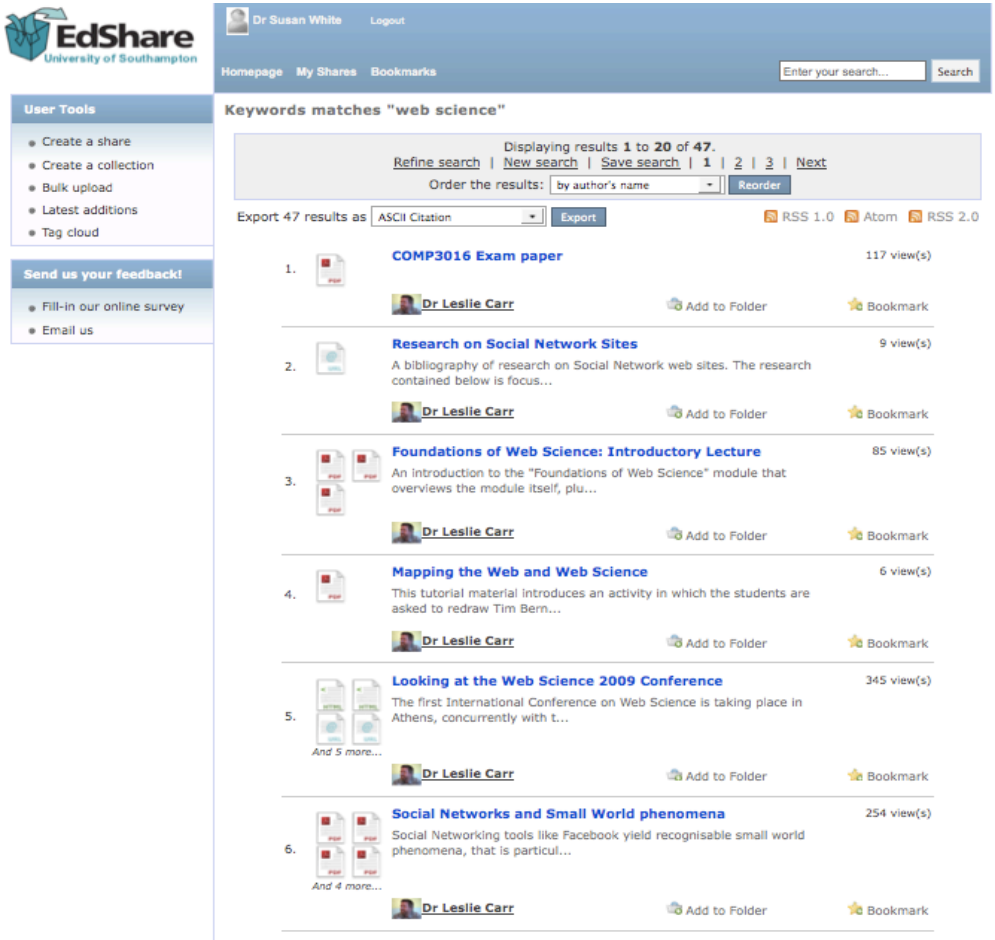

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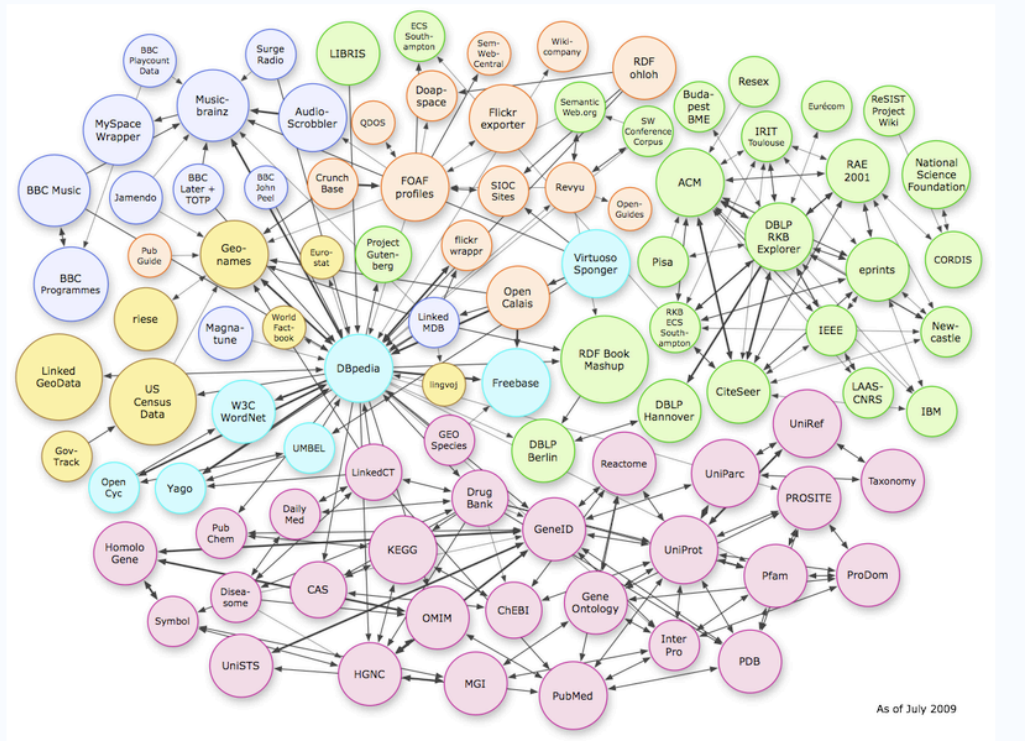

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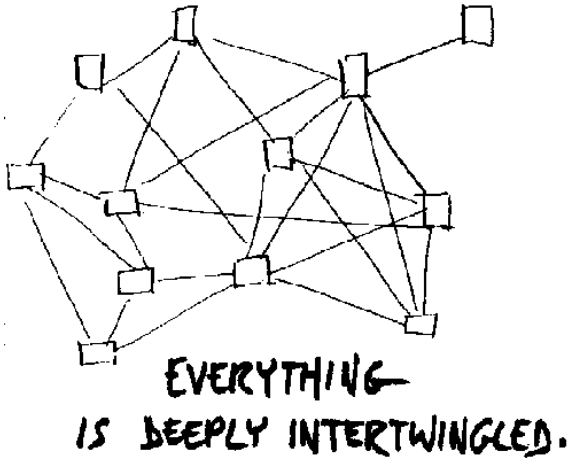

WHAT NEXT?

1st July 2010

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

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http://www.ecs.soton.ac.uk/~saw

Thank You ☺

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http://twitter.com/suukii

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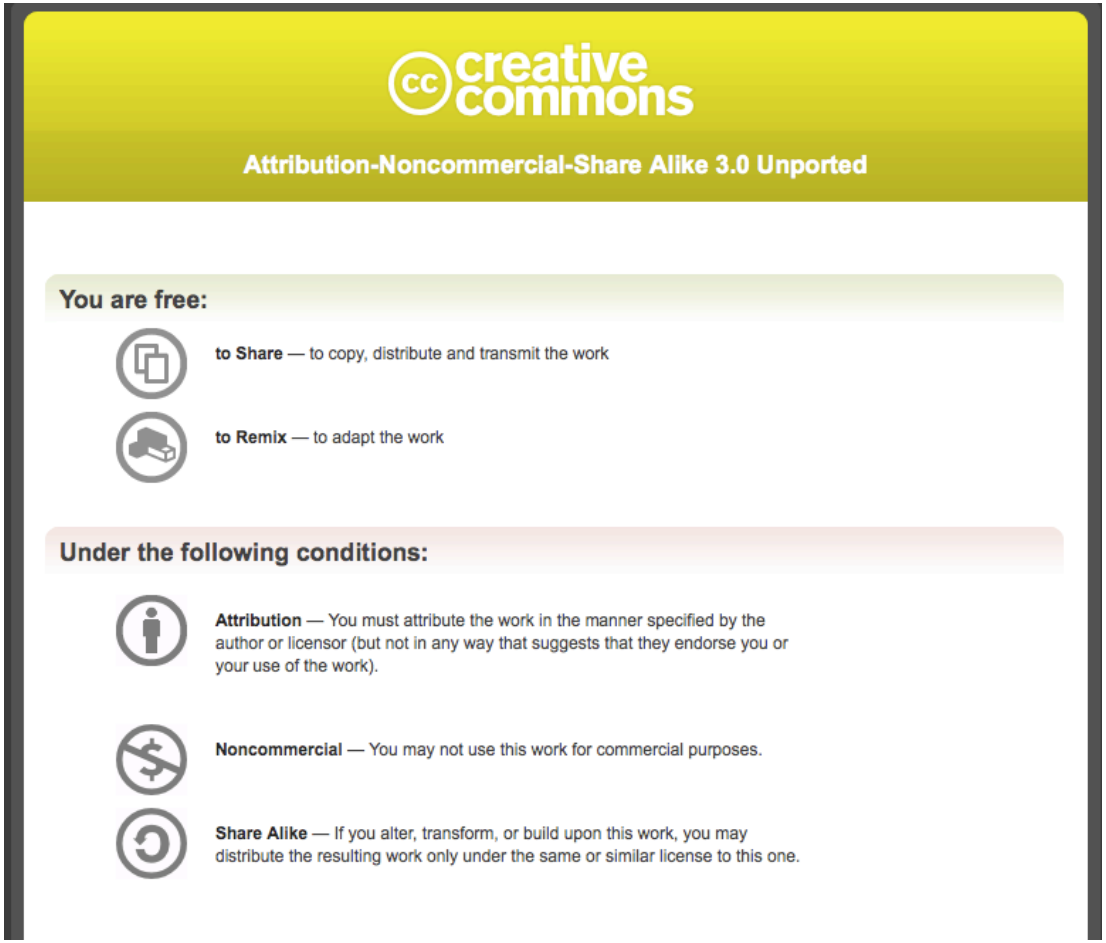

Selected references

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  http://www.w3.org/DesignIssues/LinkedData/
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  http://semantic-squirrel.org/
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- Tiropanis Thanassis , Davis, H., Millard, D., Weal, M., White, S. and Wills, G. (2009) Semantic Technologies in Learning and Teaching (SemTech) - JISC Report
  http://semtech.ecs.soton.ac.uk/
- White, S., Davis, H. C., Morris, D. and Hancock, P. (2010) Making it rich and personal: meeting institutional challenges from next generation learning environments. In: *The PLE conference 2010*, 8-9 July 2010
  http://eprints.ecs.soton.ac.uk/21327/
- XCRI
  http://www.xcri.org/Welcome.html/

Reframing the web…

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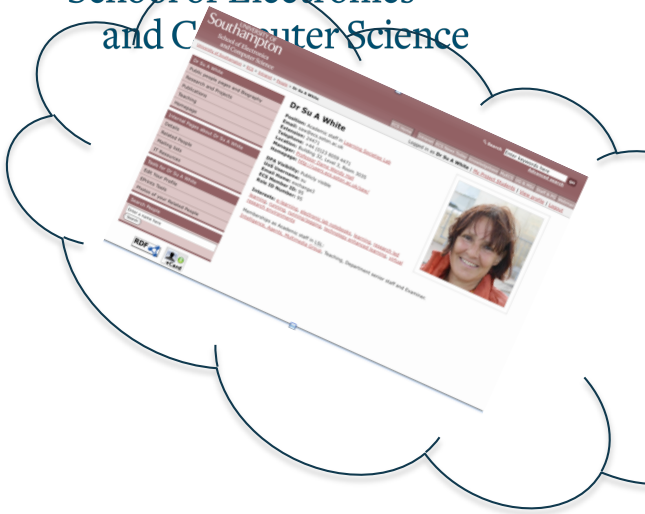


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    version="XHTML+RDFa 1.0" xml:lang="en">
  <head>
    <title>John's Home Page</title>
    <base href="http://example.org/john-d/" />
    <meta property="dc:creator" content="Jonathan Doe" />
  </head>
  <body>
    <h1>John's Home Page</h1>
    <p>My name is <span property="foaf:nick">John D</span> and I like
      <a href="http://www.neubauten.org/" rel="foaf:interest"
        xml:lang="de">Einstürzende Neubauten</a>.
    </p>
    <p>
      My <span rel="foaf:interest" resource="urn:ISBN:0752820907">favorite
      book is the inspiring <span about="urn:ISBN:0752820907"><cite
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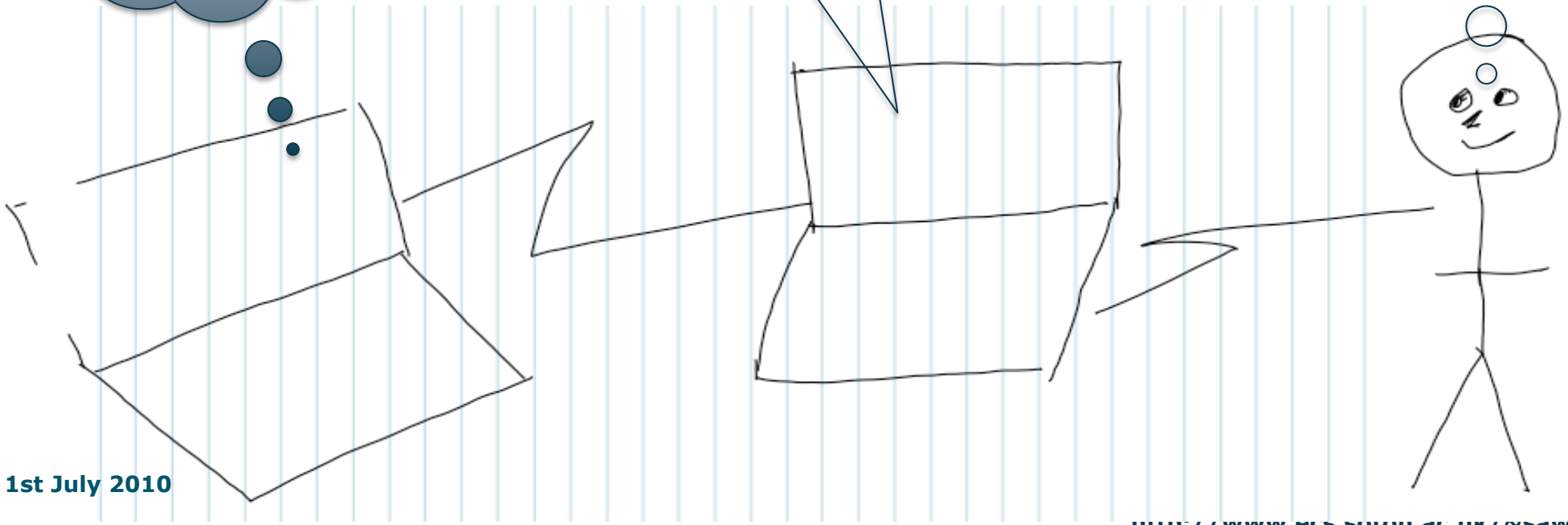
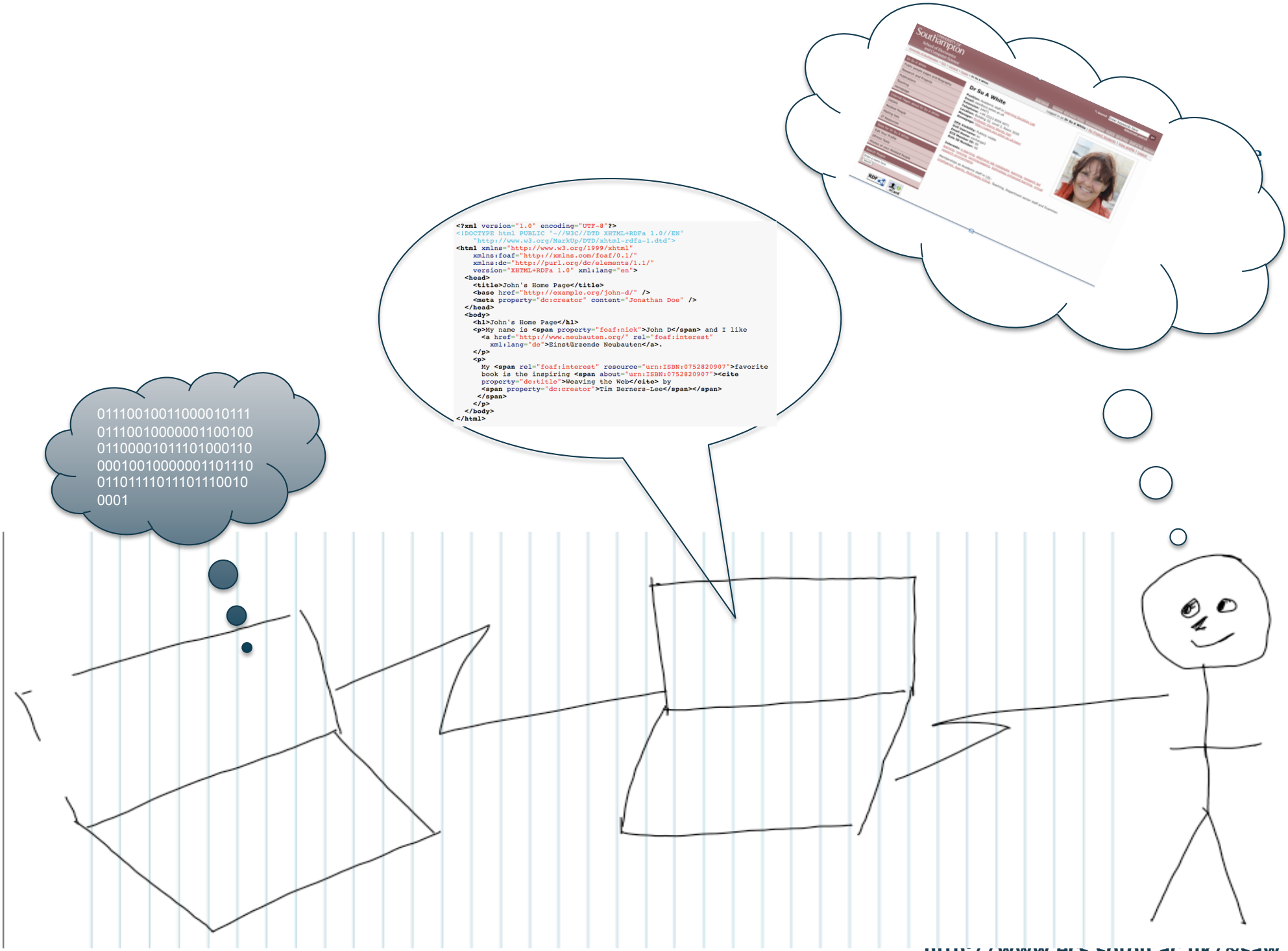


1st July 2010



http://www.ecs.soton.ac.uk/~saw