At the beginning – Ignorance is Bliss!

In the next 1 1/2 hours or so we are going to:

• Be interactive
• Learn things
• Be non-technical (as possible)
• Be fast
• Come to conclusions
• Have FUN!

At the end – Turpe Nescire
Brief introduction:

• Who you are

• Who you work for (including country)

• What experience of linked data (if any) you have had in your work
Part 1

Linked Data – Some Context
Martin Doerr:

“A museum object is more like an illustration or witness of the past, than information in its own right. Cultural historical research means understanding “possible pasts”, the facts, events, material, social and psychological influences and motivations. It lives from understanding contexts by pulling together bits and pieces of related facts from disparate resources, which can typically not be classified under subjects in an obvious way. It lives from taking into account all known facts.”
I am going to tell you stories that connect:

• The UK’s most popular poem: *IF* (Work)
• The **First World War** (Event)
• The **Guards Division** (Organisation)
• The fictional **Harry Potter** (Person?)
• The city of **Cologne** (Place)
• The warship **SMS Gneisenau** (Physical thing)
IF you can keep your head when all about you
Are losing theirs and blaming it on you,
If you can trust yourself when all men doubt you,
But make allowance for their doubting too;
If you can wait and not be tired by waiting,
Or being lied about, don't deal in lies,
Or being hated, don't give way to hating,
And yet don't look too good, nor talk too wise:

......

If you can talk with crowds and keep your virtue,
Or walk with Kings - nor lose the common touch,
if neither foes nor loving friends can hurt you,
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And - which is more - you'll be a Man, my son!
Personal story Part 3
Personal story Part 4
Personal story Part 5

Does he look familiar?
I used the Web and my Knowledge

To tell the Stories and make the Connections

BUT

Could I have had Help?

There is someone who thinks I can ....
Two talks from Sir Tim

*The next Web* – February 2009

[http://www.ted.com/talks/tim_berners_lee_on_the_next_web.html](http://www.ted.com/talks/tim_berners_lee_on_the_next_web.html)

*The year open data went worldwide* – March 2010

[http://www.ted.com/talks/tim_berners_lee_the_year_open_data_went_worldwide.html](http://www.ted.com/talks/tim_berners_lee_the_year_open_data_went_worldwide.html)
Questions for Tim on linked open data?

• Are there any terms that Tim used (or you have heard about) that you want to know more about?

• Are there any actions that Tim described (or you have heard about) that you want to know more about?

• As a cultural heritage professional I need to know about XXXX:
  • Consider the terms: Linked – Open – Data
  • Think about your: Context – Needs – Environment
  • What is missing?
So here we go....
Your Questions and Comments:

• Are there any terms that Tim used (or you have heard about) that you want to know more about?

• Are there any actions that Tim described (or you have heard about) that you want to know more about?

• As a cultural heritage professional I need to know about XXXX?
Part 2

Linked Data – Why and How

BTW ask questions as I talk
‘Classic’ Web scenario

Features:
- Single global information space
- URLs as:
  - globally unique IDs
  - retrieval mechanism
- HTML – shared content format
- Hyperlinks – links

Issues:
- Content is not well structured
- You can not ask expressive questions
- You can not process content within applications
What do we actually want?

Use the Web like a single global database

How?

Publish structured data directly on the Web.
Structured data on the Web?

Different ways of publishing:

- Web APIs (Application Programming Interface)
- Microformats
- Linked Data

Consuming applications:

- Web browsers
- Search engines
- Mashup – data from many sources combined
Cultural Heritage APIs:

- Science Museum [London]
- Brooklyn Museum
- DigitalNZ
- Museum of London
- Muselius
- Culture Grid
- Europeana

http://www.programmableweb.com
For:
• APIs expose structured data
• APIs enable new applications

Against:
• Proprietary interfaces
• Mashups are based only on fixed set of sources
• You can not set hyperlinks between data objects
• APIs slice the Web into separate data silos
Microformats

Basics:

• [http://microformats.org](http://microformats.org)
• XML tagging **embedding structured data** into HTML pages
• Examples – hCard, hCalendar, hReview, XFN, ... 
• Compatible with the idea of the **Web as single information space**

Problems:

• Only a **fixed set** of microformats exist
• No way to **connect data** items
Uses **Semantic Web** technologies to:

- Publish *structured data* on the Web
- Set *links* between data from one data source to data within other data sources
Linked Data Principles

Tim Berners-Lee 2007 –
http://www.w3.org/DesignIssues/LinkedData.html :

1. Use **URIs** as names for things.
2. Use **HTTP URIs** so that **people can look up** those names.
3. When someone looks up a URI, provide **useful RDF information**.
4. Include RDF statements that **link to other URIs** so that they can discover related things.
Some definitions

- **Semantic Web**: Group of methods and technologies to allow machines to understand the meaning – or "semantics" – of information on the World Wide Web.
- **URI**: Uniform Resource Identifier – a string of characters used to identify a name or a resource on the Internet (URLs & URNs are URIs).
- **HTTP**: Hypertext Transfer Protocol – a networking protocol for the information system that is the World Wide Web.
- **RDF**: Resource Description Framework – a general method for conceptual description or modelling of information on the Web.
Growth of the LOD cloud: 2007
Growth of the LOD cloud: 2008
Growth of the LOD cloud: 2009

As of July 2009
Growth of the LOD cloud: 2010
Star in the LOD cloud: Geonames

• >8m locations

• Feature hierarchy

http://www.geonames.org
http://dbpedia.org

- Extracts structured data from Wikipedia
- Over 3 million things

Star in the LOD cloud: DBpedia
Why publish Linked Data?

Linked Data builds on the classic architecture of the Web:

- Your data becomes part of the Semantic Web
- People can use various data browsers to explore your data
- Your data is crawled by Semantic Web search engines and is used by various applications
- People start setting links to your data, which might make more people find and use your data

Linked Data is more generic than APIs and Microformats:

- Builds on standards in contrast to proprietary Web APIs
- Enables applications that use an unbound set of data sources and incorporate new data sources
Further reading from Dov Winer


- Website
  [http://www4.wiwiss.fu-berlin.de/bizer/d2r-server/](http://www4.wiwiss.fu-berlin.de/bizer/d2r-server/)

- Concepts & ‘cookbook’

- Public servers & projects
  [http://www4.wiwiss.fu-berlin.de/bizer/d2r-server/#publicservers](http://www4.wiwiss.fu-berlin.de/bizer/d2r-server/#publicservers)
Thank you!

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