Opening up Legislation as Linked Data
About TSO

- Long-established UK firm employing 365 staff
- Offices in London, Norwich, Edinburgh and Belfast
- Part of: WILLIAMS LEA
- Contract publisher
- Digital solutions vendor
- Over 60 UK-based developers and 8 project managers
- OpenUp® Semantic Platform and Semantic team
TSO Service Scope

Digital Solutions

- OpenUp data platform
- Single source content management
- Multi-format outputs

Data Harvesting
- Disseminate
- Store
- Capture
- Transform
- Apps
- ebooks

Web development
- Hosting & management
- Rich media
- Document management
- Collaboration

Cataloguing and ecommerce
- Hosting & management
- Digital asset management
- Professional services
- Search

Data transformation
- User centric design
- Hosting & management
- Search

Metadata
- Web sites
- Communities
- Search
Some of our clients
51 million hits per month
20 searches per second
2 million unique visitors a month
6.5 Million documents and growing
One of Government’s most visited sites
TSO’s Legislation Journey

1996

Transparency Agenda
Efficiency Board Formed

2009

Legislation ITT

2010
Developed by TSO for

The National Archives

The Official Portal for UK Legislation

1267-Present

Contains enacted and revised legislation

Wide range of users

Legal professionals

Citizens Advice

Publishers

First Linked Data Statute Book in the world
Requirements for the website /publishing system

- Very fast and responsive
- Easy to use
- Data needed to be open standards based
- Provide excellent value for money for the taxpayer

- Had to support (Government's Transparency Agenda)
  - Linked Open Data
  - Data format to be flexible, open and accessible
  - Metadata as RDF
3 Main components of the solution

- Innovative approach to delivering legislation
- User Experience research
- Data re-use
Capture

- Streamlined the way legislation is ingested
- Removal of the manual processes
- Digital Validation
- Automated extraction of metadata
Transformation
*Infrastructure for automated extraction processes*

Data sources
- Wikipedia
- data.gov.uk
- Ordnance Survey
- GeoNames
- London Gazette
  and others…

Entities extracted
- Company names
- Organisation names
- Towns
- Countries
- Dates
- Facilities
- Events
  and others…

Data Enrichment Service

Starter DES (generic) annotator
Streamlined the way legislation is ingested
Removal of the manual processes
Automated the validation, approval & registration processes
Automated extraction of metadata
User certifies submission
Tracking
Dissemination – the Legislation.gov.uk site

- Developed award-winning website
- Fast search and retrieval
- Ease of use and many ways to access legislation
- “Points in time” view of legislation
- URIs- access granular levels of data
- Feature-rich

‘Best example of ICT-enabled innovation and enterprise’
(UK Public Sector Awards 2011)
Linked Data describes a method of publishing structured data so that it can be linked to other data and become more useful.

Rather than data available purely to serve web pages for human readers, it extends data so it can be read automatically by computers.

Enables data from different sources to be connected and queried.
What does Linked Data allow?

Structured way of publishing data to facilitate linking to other data and resources

- Allows relationships between things to be expressed
- Facilitates navigation between information sources
- Enables creation of new products from existing data
- Re-aggregation of data into new information sources
- Facilitates creation of “mash-ups”
- Makes data more useful

Linked Open Data is Linked Data that is free to use
Why are Governments opening up their data?

To achieve important national benefits for both the Nation and its citizens including:

1. Encourage growth and the creation of companies and jobs
2. Increase discovery and transparency
3. Higher innovation, entrepreneurship
4. Encourage technological innovation
5. More informed, empowered and satisfied citizens
Why are publishers starting to publish Linked Data?

1. Increase usage in their other products
2. Attract authors to their journals
3. Improve their own visibility
4. Support user-driven innovation
5. Foster developer ecosystems using their services as a platform perhaps?
6. Add value to their content
7. To “give something back” to the wider community
8. Show they’re starting to comply with the “Open Data” mandates
9. Cost avoidance - presently have to give permission to use their data
10. Looking at Freemium models
11. Sponsorship - getting advertisers to sponsor the open data
What can you do with Linked Open Data?

“Mash ups” - pulling data from various sources - Visualisations
Combine different data sets
Legislation.gov.uk - part of “The Semantic Web”
How do we do this? Via OpenUp® - TSO’s Linked Data Platform

Harvest: Aggregation of data from web, APIs, databases, and files

Enrich: Extracting useful data and converting to re-usable formats

Store: Highly scalable database storage and query engine

Publish: Websites and APIs to reach data users

Automated processes that deliver reliable data
Using OpenUp® for Legislation.gov.uk

Automated process:

- Harvests Data from Legislation.gov.uk
- Enriches the content via the Data Enrichment Service
- Creates the URIs
- Creates RDF triples
- Stores RDF in the TSO triple store
- Exposes RDF for querying via SPARQL endpoints and API
- Third parties access RDF and pull it from the store
Legislation.gov.uk data re-use by 3rd parties

Examples:
Summary – Legislation.gov.uk

- Have we succeeded in what we set out to do?

- Improving access for the public, for businesses and for computers
- Saving Government money
- Transformed legislation publishing
- Truly opened up legislation
Thank you

Want to discuss further?

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