

Transforming the way people use Legislation information

Peter Camilleri



Agenda

- About TSO
- The transformation of Legislation publishing
- Linked data- what is it and how is it used
- Latest projects
- Q&A

TSO - who we are

Part of Deutsche Post DHL

A strong business backed by
global market leader

“The people government trust to publish”

Long heritage as no-fail
publishing partner to
Government

Publish Legislation,
Parliamentary papers, guidance
and regulatory materials

Opening up Government data

OpenUp® platform unlocking
and enriching data to improve
transparency

Transforming digital transactions

Using innovative technology to
capture and process information
faster and at lower cost

Large team of UK-based
developers

Award-winning solutions

Legislation.gov.uk –
Winner of “Best example of ICT-
enabled innovation and
enterprise” at 2012 Public Sector
Digital Awards

Proven ability to deliver savings

Awarded pan-government PVP
contract in 2011 to reduce cost
to Government and transform
print category

Our solutions - helping organisations interact more efficiently

Publishing

Enabling access to information in the formats users want

- Content creation
- Content management
- Multi-format delivery
- Multi-channel dissemination

Data

Unlocking data to improve transparency and re-use

- Data harvesting and capture
- Data enrichment
- Linked Data
- APIs

Digital

Using technology to deliver better services

- Online capture
- Automated processes
- User-friendly interfaces
- Service integration
- eCommerce

Our clients publish important information



Standards
& Testing
Agency




Driving
Standards
Agency



HM Revenue
& Customs



Department
for Transport

 The National Archives



Cabinet Office



Home Office



Department
of Health



Digital access to important information



legislation.gov.uk

Home About Us Browse Legislation New Legislation Changes to Legislation Search Legislation

Year: [] Number: [] Type: All Legislation (excluding draft) Search

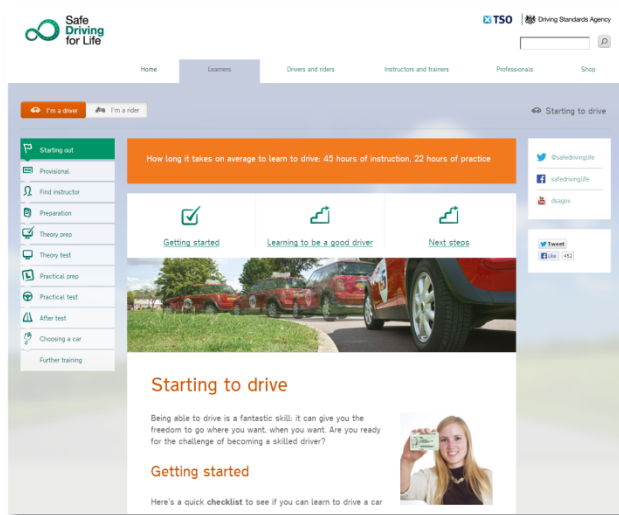
Browse

Legislation.gov.uk carries most types of UK Legislation. The list below is a complete breakdown of the types of legislation held on this site. From this page you can select any legislation type and continue browsing or you can hover over the map to see which legislation types are applicable to the geographical area you are interested in.

Exclusively or primarily applies to the area on the map
 Contains legislation that sometimes applies to the whole or part of the area on the map
 Not applicable

UK Public General Acts
 UK Statutory Instruments
 UK Local Acts
 Wales Statutory Instruments
 Acts of the Scottish Parliament
 Scottish Statutory Instruments
 Acts of the National Assembly for Wales
 Northern Ireland Orders in Council
 Measures of the National Assembly for Wales
 Northern Ireland Statutory Rules
 Church Measures
 Church Instruments
 Acts of the Northern Ireland Assembly
 UK Ministerial Orders
 Acts of the Old Scottish Parliament 1424-1707
 UK Statutory Rules and Orders 1960-1948
 Acts of the English Parliament 1267-1706
 Measures of the Northern Ireland Assembly 1974
 Acts of the Old Irish Parliament 1495-1800
 Acts of the Northern Ireland Parliament 1921-1992
 Acts of the Parliament of Great Britain 1707-1800

Draft legislation



Safe Driving for Life

Home Learners Drivers and riders Instructors and trainers Professionals Shop

Starting to drive

How long it takes on average to learn to drive: 45 hours of instruction, 22 hours of practice

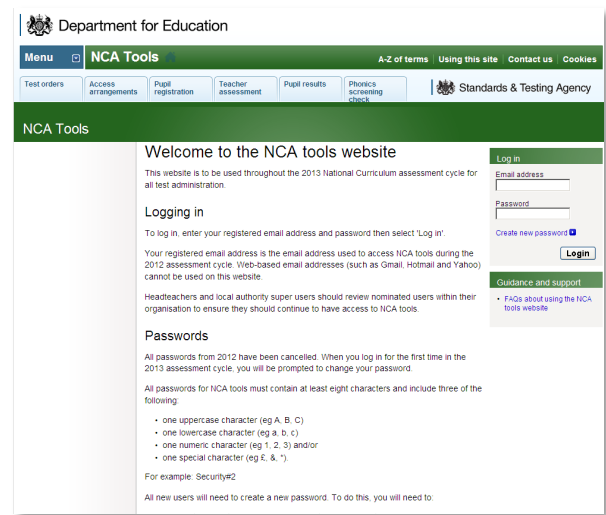
Getting started Learning to be a good driver Next steps

Starting to drive

Being able to drive is a fantastic skill; it can give you the freedom to go where you want, when you want. Are you ready for the challenge of becoming a skilled driver?

Getting started

Here's a quick checklist to see if you can learn to drive a car



Department for Education

Menu NCA Tools A-Z of terms Using this site Contact us Cookies

Test orders Access arrangements Pupil registration Teacher assessment Pupil results Phonics screening check Standards & Testing Agency

NCA Tools

Welcome to the NCA tools website

This website is to be used throughout the 2013 National Curriculum assessment cycle for all test administration.

Logging in

To log in, enter your registered email address and password then select 'Log in'. Your registered email address is the email address used to access NCA tools during the 2012 assessment cycle. Web-based email addresses (such as Gmail, Hotmail and Yahoo) cannot be used on this website.

Headteachers and local authority super users should review nominated users within their organisation to ensure they should continue to have access to NCA tools.

Passwords

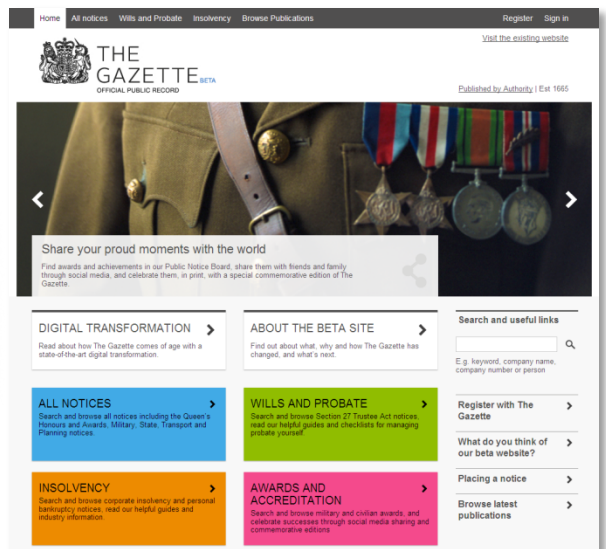
All passwords from 2012 have been cancelled. When you log in for the first time in the 2013 assessment cycle, you will be prompted to change your password.

All passwords for NCA tools must contain at least eight characters and include three of the following:

- one uppercase character (eg A, B, C)
- one lowercase character (eg a, b, c)
- one numeric character (eg 1, 2, 3) and/or
- one special character (eg £, &, *).

For example: Security#2

All new users will need to create a new password. To do this, you will need to:



Home All notices Wills and Probate Insolvency Browse Publications Register Sign in

THE GAZETTE OFFICIAL PUBLIC RECORD

Published by Authority 1 EM 1965

Share your proud moments with the world

Find awards and achievements in our Public Notice Board, share them with friends and family through social media, and celebrate them, in print, with a special commemorative edition of The Gazette

DIGITAL TRANSFORMATION

Read about how The Gazette comes of age with a state-of-the-art digital transformation.

ABOUT THE BETA SITE

Find out about what, why and how The Gazette has changed, and what's next.

ALL NOTICES

Search and browse all notices including the Queen's Honours and Awards, Military, State, Transport and Planning notices.

WILLS AND PROBATE

Search and browse Section 27 Trustee Act notices, read our helpful guides and checklists for managing probate yourself.

INSOLVENCY

Search and browse corporate insolvency and personal bankruptcy notices, read our helpful guides and industry information.

AWARDS AND ACCREDITATION

Search and browse military and civilian awards, and celebrate successes through social media sharing and commemorative editions.

Search and useful links

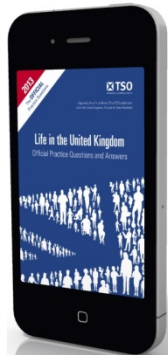
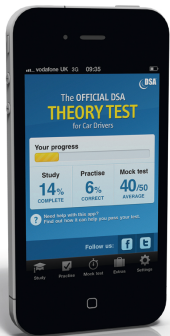
E.g. keyword, company name, company number or person

Register with The Gazette

What do you think of our beta website?

Placing a notice

Browse latest publications





- 51 million hits per month
- 20 searches per second
- 2 million unique visitors a month
- 6.5 Million documents and growing
- First Linked Data Statute Book in the world

ber:

Search

[Advanced Search >](#)

New Legis

-  [The A66 Trunk Road \(Bassenthwaite Lake\) \(Temporary Prohibition and Restriction of Traffic\) \(No 2\) Order 2012 >](#)
-  [The A23 Trunk Road \(Warninglid Junction - Pease Pottage Interchange\) \(Temporary Prohibition of Cyclists and Pedestrians\) Order 2012 >](#)
-  [The A2 Trunk Road \(Jubilee Way, Coastbound Carriageway\) \(Temporary Prohibition of Traffic\) Order 2012 >](#)
-  [The M621 Motorway \(Junction 7\) \(Temporary Prohibition of Traffic\) \(No. 2\) Order 2012 >](#)
-  [The A27 Trunk Road \(Crossbush Interchange - Worthing\) \(Temporary Restriction and Prohibition of Traffic\) Order 2012 >](#)

[What legislation is held on legislation.gov.uk? >](#)

[Will I find new legislation on legislation.gov.uk? >](#)

[What legislation is available as revised? >](#)

[How up to date is the revised content on this website? >](#)

[View more >](#)

[Data Protection Act 1998 >](#)

[Disability Discrimination Act 1995 >](#)

[Consumer Credit Act 1974 >](#)

[Health and Safety at work etc. 1974 >](#)

[Children Act 2004 >](#)

[Employment Rights Act 1996 >](#)

[Environmental Protection Act 1990 >](#)

TSOs Legislation Journey



2007



2009



2004

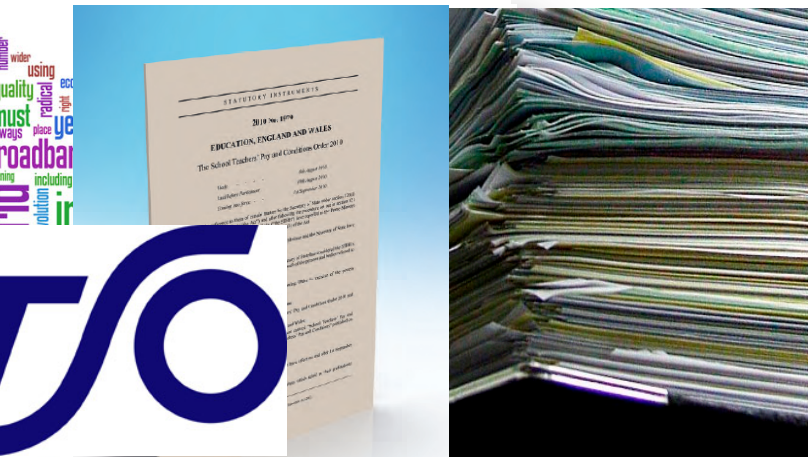


2006

A word cloud with the word "new" as the largest and most central element. Other prominent words include "government", "citizens", "internet", "service", "time", "available", "need", "back", "content", "first", "much", "now", "development", "policy", "make", "set", "million", "costs", "Chancellor", "within", "users", "just", "future", "building", "decisions", "IWO", "Mygov", "departments", "ensure", "interact", "books", "private", "office", "drive", "websites", "leader", "generation", "growth", "plans", "making", "want", "UK", "politics", "needs", "narrower", "wider", "using", "accuracy", "right", "place", "must", "ways", "quality", "radical", "including", "opening", "ir", "olition".

TSO

2007



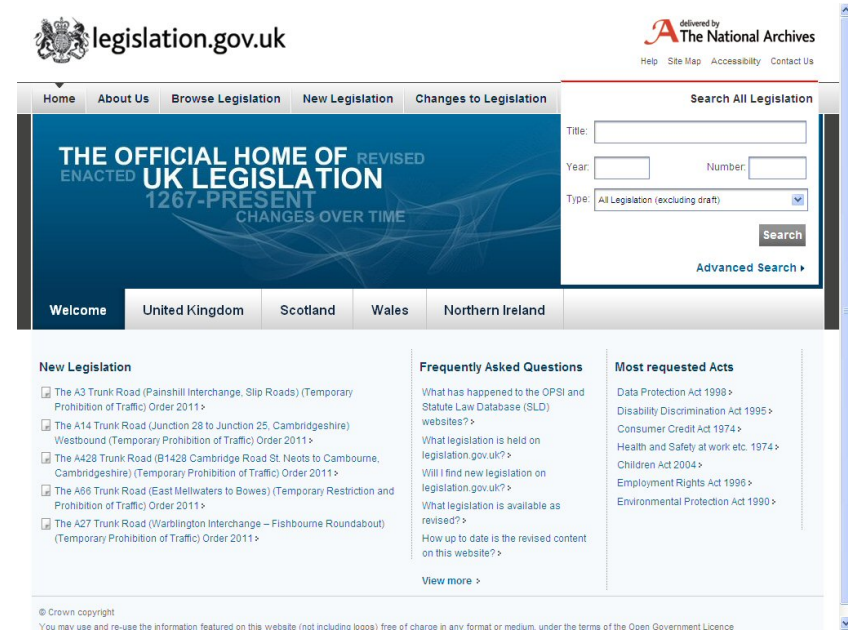
1996

2010

2010
Legislation ITT

www.Legislation.gov.uk

- Developed by TSO for  The National Archives
- The Official Portal for UK Legislation
- 1267-Present
- Contains enacted and revised legislation
- One of Government's most visited sites

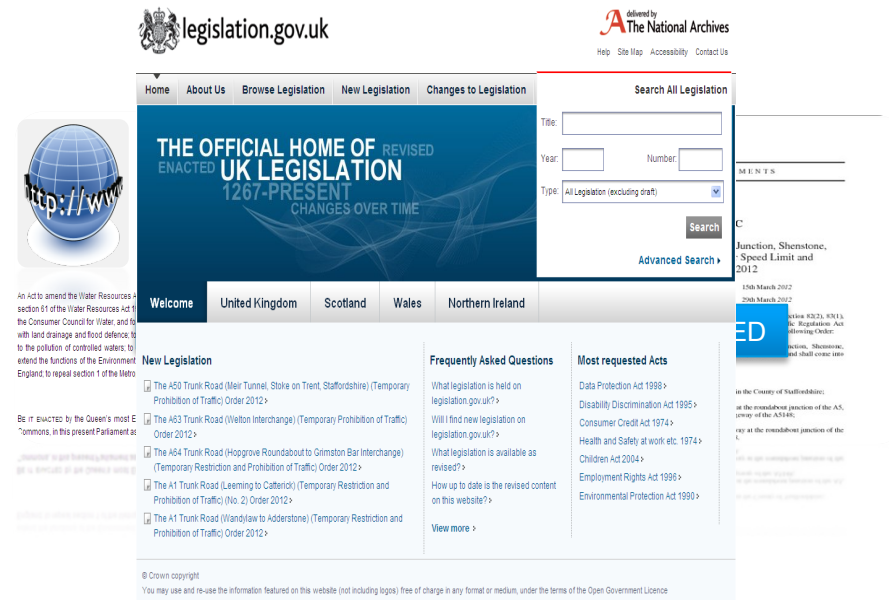


The screenshot shows the homepage of legislation.gov.uk. At the top, there is a navigation bar with links for Home, About Us, Browse Legislation, New Legislation, and Changes to Legislation. A search box is located on the right side, titled "Search All Legislation", with fields for Title, Year, and Number, and a dropdown menu for Type (set to "All Legislation (excluding draft)"). Below the search bar, there are tabs for "Welcome", "United Kingdom", "Scotland", "Wales", and "Northern Ireland". The main content area is divided into three columns: "New Legislation" with a list of recent orders, "Frequently Asked Questions" with several questions, and "Most requested Acts" with a list of popular acts. The footer contains copyright information and a statement about the Open Government Licence.

Motivation behind the new legislation.gov.uk system

Built to consolidate two legacy websites:

- OPSI for Enacted (New) Legislation
- Statute Law Database for revised legislation
- Each was run by 2 different Govt entities (OPSI & SPO which merged)
- High costs maintaining two sites
- Users were using wrong sites (didn't know where to look)
- Needed to reduce Govt sites to save costs
- Legislation needed to be more accessible to the new mobile devices
- Moving from a “Push” to a “Pull” world



Requirements for the database

- Had to be Open Standards based
- Data format to be flexible, open and accessible
- Had to be very fast
- Had to support Native XML
- Metadata as RDF
- Had to support Linked Open Data (Government's Transparency Agenda)
- Data needed to be portable

Needed a trusted vendor

Needed proven technology

Database Selection Process

- 2 month process
- Evaluated about 12 solutions
- Selection Criteria

| | | | |
|---------------|-------------|-----------------|----------------------|
| Functionality | Robustness | XML | Support |
| Scalability | Performance | Standards based | Belief in the vendor |

- Needed to try to get the best value for the taxpayer
- Started working with an Open Source XML solution
- Concerns about its scalability, resilience & support



Why we used MarkLogic

Performance

Functionality

Support

Robustness

XML



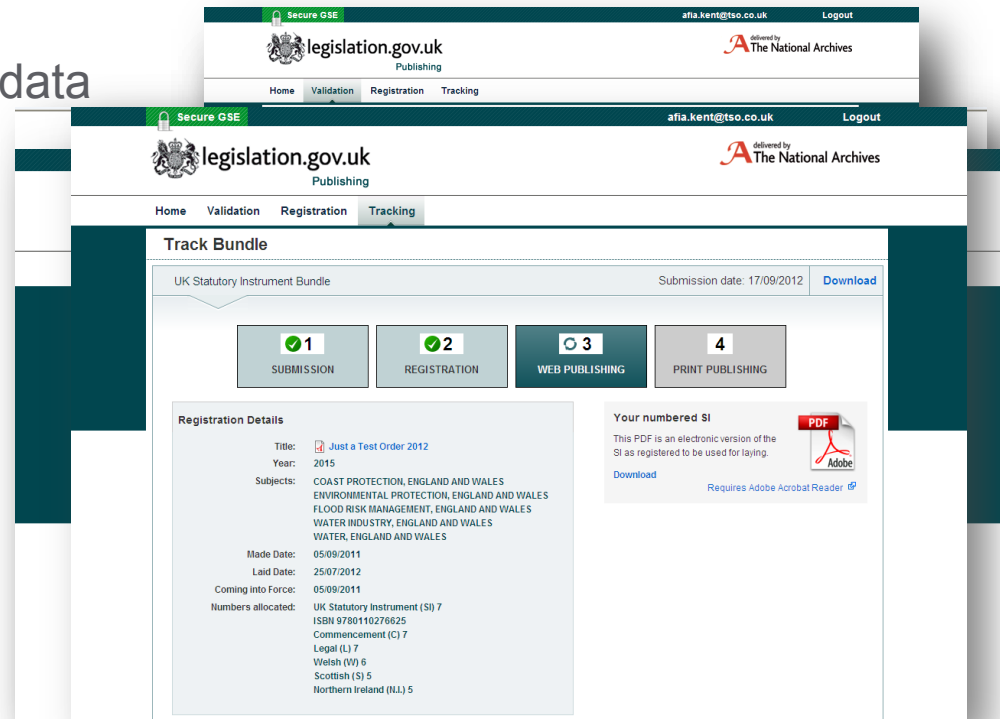
Standards based

Belief in the vendor

Scalability

Transforming the legislation capture process

- Streamlined the way legislation is submitted
- Removal of the manual processes
- Validation
- Automated extraction of metadata
- User certifies submission
- Tracking



Secure GSE afia.kent@tso.co.uk Logout

legislation.gov.uk
Publishing

Home Validation Registration Tracking

Secure GSE afia.kent@tso.co.uk Logout

legislation.gov.uk
Publishing

Home Validation Registration Tracking

Track Bundle

UK Statutory Instrument Bundle Submission date: 17/09/2012 [Download](#)

✓ 1

SUBMISSION

✓ 2

REGISTRATION


3

WEB PUBLISHING

4

PRINT PUBLISHING

Registration Details

Title:  Just a Test Order 2012

Year: 2015

Subjects: COAST PROTECTION, ENGLAND AND WALES
ENVIRONMENTAL PROTECTION, ENGLAND AND WALES
FLOOD RISK MANAGEMENT, ENGLAND AND WALES
WATER INDUSTRY, ENGLAND AND WALES
WATER, ENGLAND AND WALES

Made Date: 05/09/2011


Laid Date: 25/07/2012

Coming into Force: 05/09/2011

Numbers allocated: UK Statutory Instrument (SI) 7
ISBN 9780110276625
Commencement (C) 7
Legal (L) 7
Welsh (W) 6
Scottish (S) 5
Northern Ireland (NI) 5

Your numbered SI

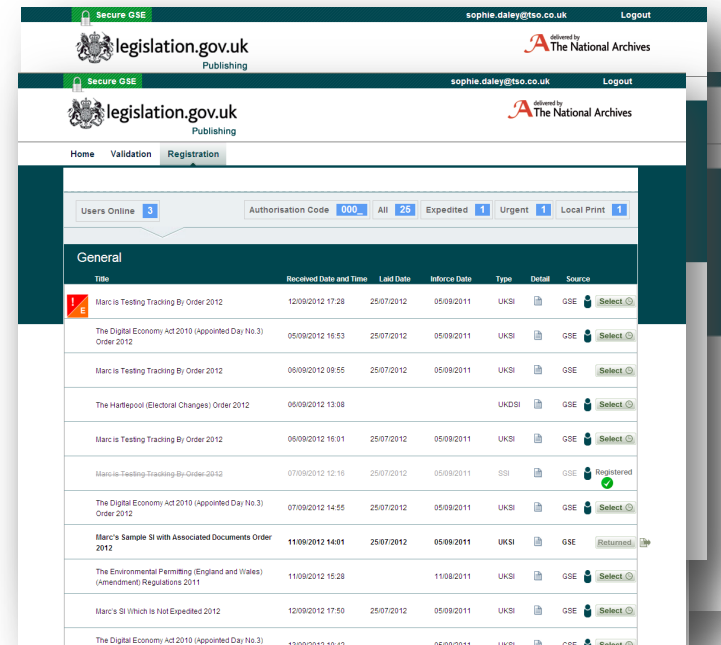
This PDF is an electronic version of the SI as registered to be used for laying.

[Download](#) 

Requires Adobe Acrobat Reader

Streamlining the registration process

- New tools for the Statutory Instruments Registrar
- Streamlining the registration process
- Joining up the legislation publishing lifecycle
- Approval checks
- Automation of existing processes



The screenshot shows the 'Registration' section of the legislation.gov.uk website. It features a navigation bar with 'Home', 'Validation', and 'Registration' tabs. Below the navigation bar, there are filters for 'Users Online' (3), 'Authorisation Code' (900), and status indicators for 'All' (26), 'Expedited' (1), and 'Urgent' (1). A 'Local Print' button is also visible. The main content area displays a table of orders with the following columns: Title, Received Date and Time, Lead Date, Inforce Date, Type, Detail, and Source. The table contains 12 rows of data, including titles like 'Marc is Testing Tracking By Order 2012' and 'The Digital Economy Act 2010 (Appointed Day) No. 3 Order 2012'. Each row includes a 'Select' button and a 'Registered' status indicator.

| Title | Received Date and Time | Lead Date | Inforce Date | Type | Detail | Source |
|---|------------------------|------------|--------------|-------|--------|------------|
| Marc is Testing Tracking By Order 2012 | 12/09/2012 17:28 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Select |
| The Digital Economy Act 2010 (Appointed Day) No. 3 Order 2012 | 05/09/2012 16:53 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Select |
| Marc is Testing Tracking By Order 2012 | 05/09/2012 09:55 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Select |
| The HarRepool (Electoral Changes) Order 2012 | 05/09/2012 13:08 | | | UKDSI | GSE | Select |
| Marc is Testing Tracking By Order 2012 | 05/09/2012 16:01 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Select |
| Marc is Testing Tracking By Order 2012 | 07/09/2012 12:16 | 25/07/2012 | 05/09/2011 | SSI | GSE | Registered |
| The Digital Economy Act 2010 (Appointed Day) No. 3 Order 2012 | 07/09/2012 14:55 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Select |
| Marc's Sample SI with Associated Documents Order 2012 | 11/09/2012 14:01 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Returned |
| The Environmental Permitting (England and Wales) (Amendment) Regulations 2011 | 11/09/2012 15:28 | | 11/08/2011 | UKSI | GSE | Select |
| Marc's SI Which is Not Expedited 2012 | 12/09/2012 17:50 | 25/07/2012 | 05/09/2011 | UKSI | GSE | Select |
| The Digital Economy Act 2010 (Appointed Day) No. 3 | 13/09/2012 10:42 | | 05/09/2011 | UKSI | GSE | Select |

Dissemination – the Legislation.gov.uk site

- 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 legislation
- Feature-rich



‘Best example of ICT-enabled innovation and enterprise’

(UK Public Sector Awards 2011)

Any changes that have already been made by the team appear in the content and are referenced with annotations. [View outstanding changes](#)

[Original Print PDF](#) [View more >](#) **64** **Consultation and publicity with respect to policies as to services.** **E+W**

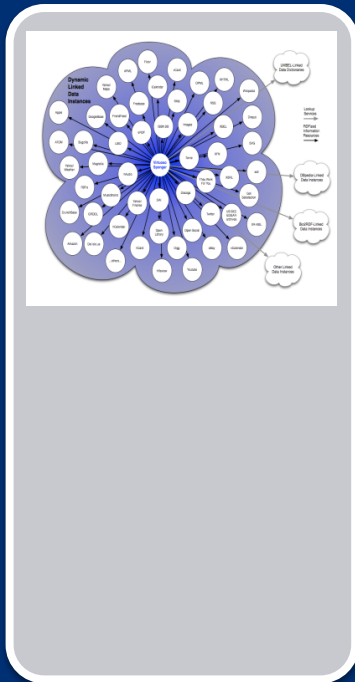
(1) When considering from time to time the formulation of policies for the purposes of section **[F163(2)(b)]** of this Act, any

| | Acts of the Old Irish Parliament | Measures of the Northern Ireland Assembly | Statutory Instruments | UK Statutory Instruments |
|------|---|--|-----------------------|--------------------------|
| 201 | H I J K L M N | The Land Registration Fee Order 2012 | 1989 | UK Statutory Instruments |
| SI 2 | O P Q R S T U | The A5111 and A42 Trunk Roads (Derby) (Temporary Prohibition of Traffic) Order 2012 | 2012 No. | UK Statutory Instruments |
| SI 2 | V W X Y Z | The M58 Motorway (Lundton S, Eastbound Entry Slip Roads from the A577 Northbound and | 1988 | UK Statutory Instruments |
| SI 2 | | | 2012 No. | UK Statutory |

The First Linked Data Statute Book in the World



In response to the Government's "Linked Data" Initiative



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.

The benefits of unlocking data

**Structured data
becomes more useful**

**Data can be
automatically read by
computers**

**Enables data from
different sources to be
connected**

Improves transparency

Enables re-use

**McKinsey report
estimates \$3 trillion of
additional economic
value could be
delivered by open data**

Legislation.gov.uk data re-use by 3rd parties

Examples:



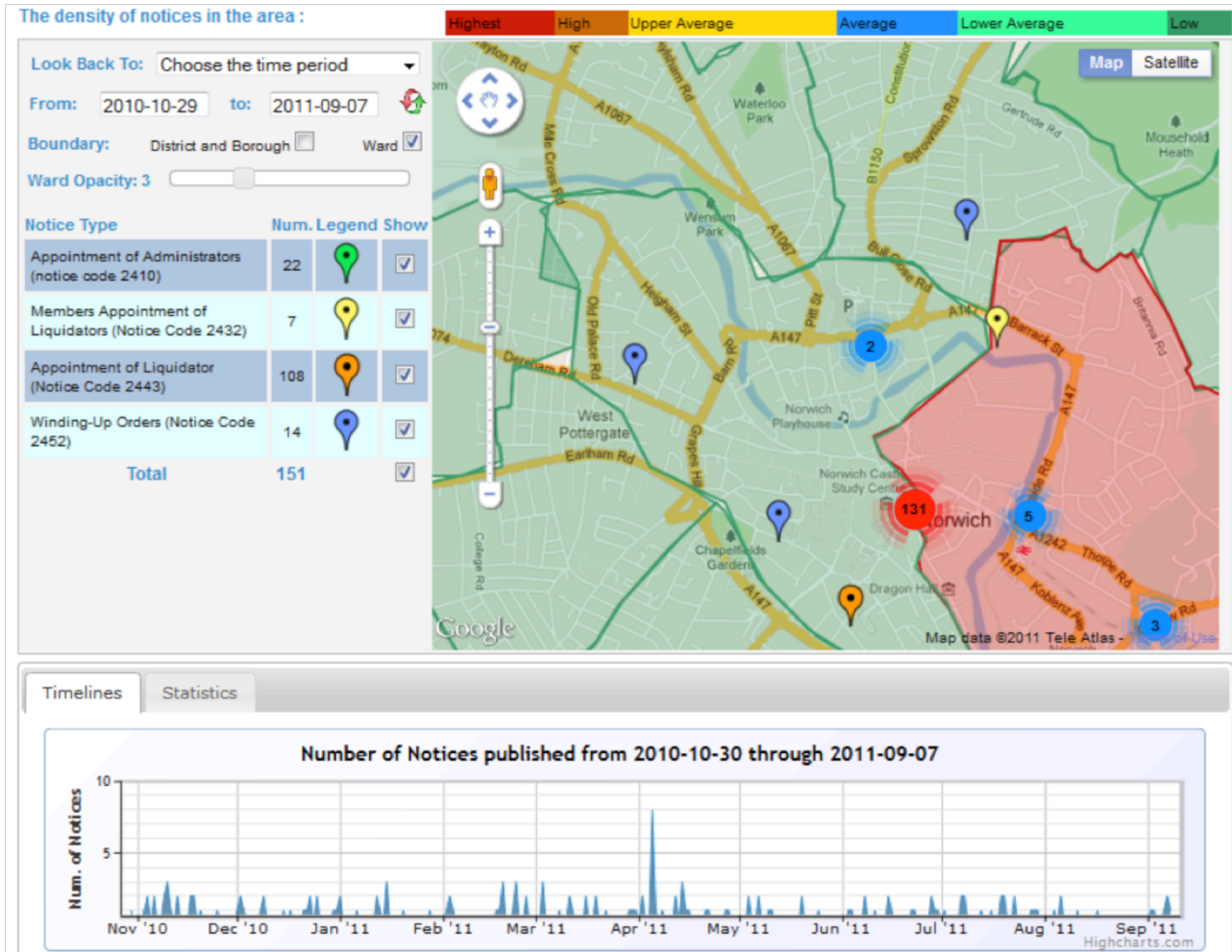
THOMSON REUTERS

Westlaw® UK

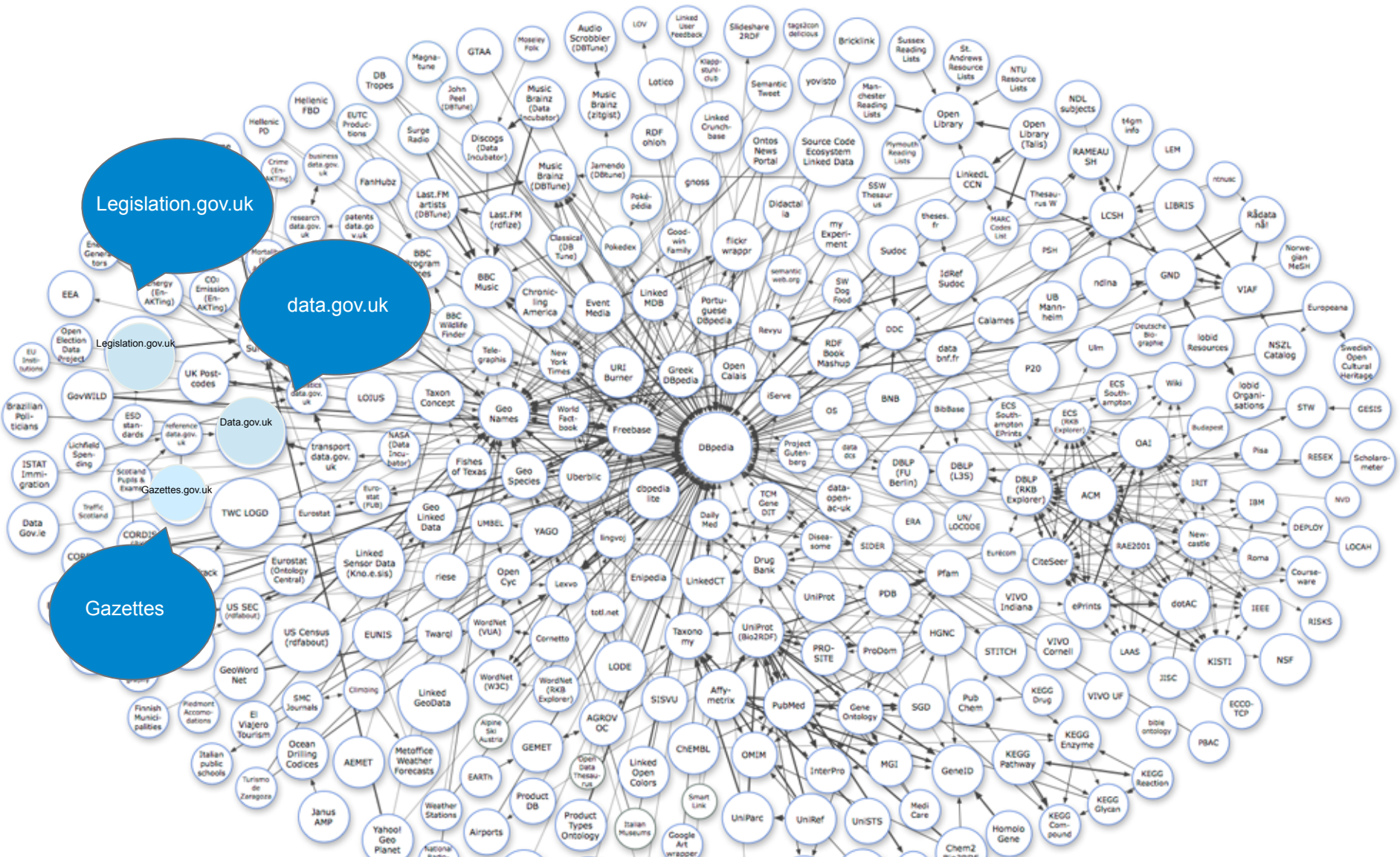


What can you do with Linked Data?

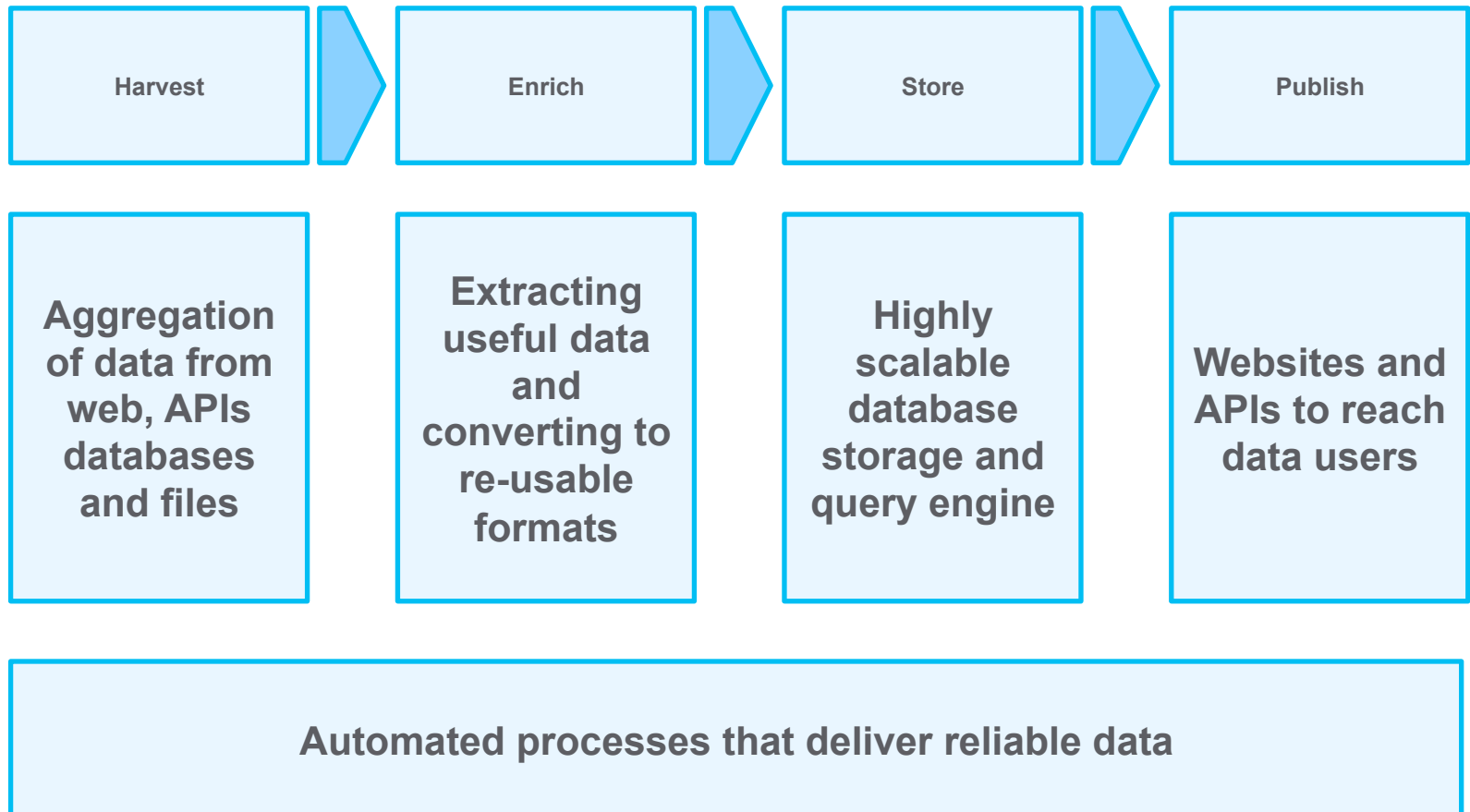
“Mash ups”- pulling data from various sources- Visualisations



Legislation.gov.uk - part of "The Semantic Web"



OpenUp® - TSO's Linked Data Platform



Using OpenUp® to publish linked data

- Harvests data
- 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 SPAQRL endpoints and APIs
- Third parties access RDF and pull it from the store

Flint- TSO's SPARQL Editor - Open Source- "TSO's contribution to the semantic community"

Flint SPARQL Editor 1.0

New Edit View Help

Dataset Legislation Mode SPARQL 1.0 Output Format SPARQL-XML Submit

Query 1 Query 2

```

1 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-synt
2 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema
3 PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
4 PREFIX frbr: <http://purl.org/vocab/frbr/core#>
5 PREFIX dct: <http://purl.org/dc/terms/>
6
7 SELECT ?work ?date ?title WHERE {
8   ?work a frbr:Work .
9   ?work dct:title ?title .
10  ?work dct:created ?date .
11  FILTER (?date >= '2010-10-15'^^xsd:date)
12 }
13 ORDER BY desc(?date)
14 LIMIT 100

```

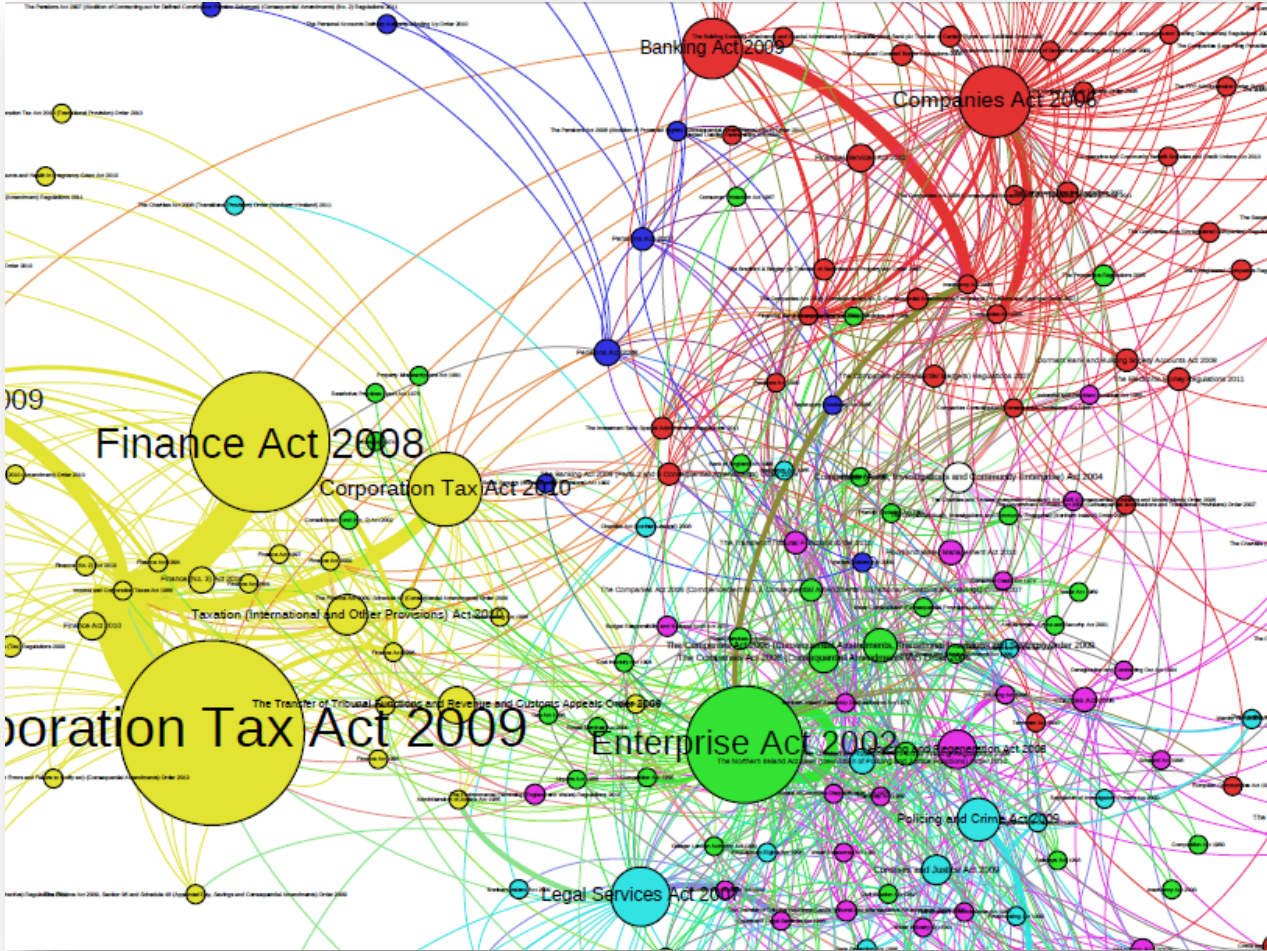
Line: 9; Position: 28; Query is valid

Query Results Visual Results Mode

| work | date | title |
|---|------------|--|
| http://www.legislation.gov.uk/id/ssi/2012/252 | 2012-09-12 | The Children's Hearings (Scotland) Act 2011 (Commencement No. 6) Order 2012 |
| http://www.legislation.gov.uk/id/uksi/2012/2335 | 2012-09-10 | The Community Interest Company (Amendment) Regulations 2012 |
| http://www.legislation.gov.uk/id/ssi/2012/249 | 2012-09-10 | The Criminal Cases (Punishment and Review) (Scotland) Act 2012 (Commencement, Transitional and Savings) Order 2012 |
| http://www.legislation.gov.uk/id/uksi/2012/2317 | 2012-09-08 | The Shropshire Community Health National Health Service Trust (Establishment) Amendment Order 2012 |

<http://openuplabs.tso.co.uk/>

Semantics assist locating legislation that has been affected



Bottle-neck in updating legislation



25,000 changes per year

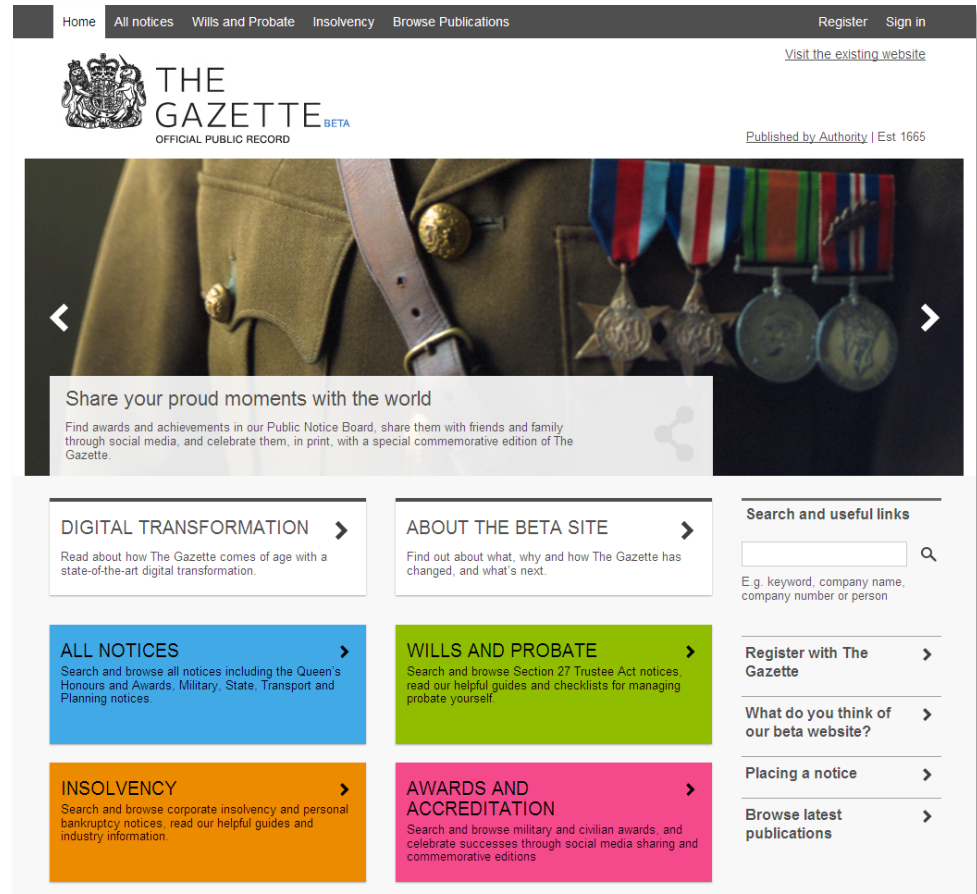
Too many changes for in-house editors to cope with

Expert Participation Model

- Sustainable way to revise legislation
- Tools & techniques to update legislation
- Vetted users from law firms and voluntary organisations assist with updating of legislation

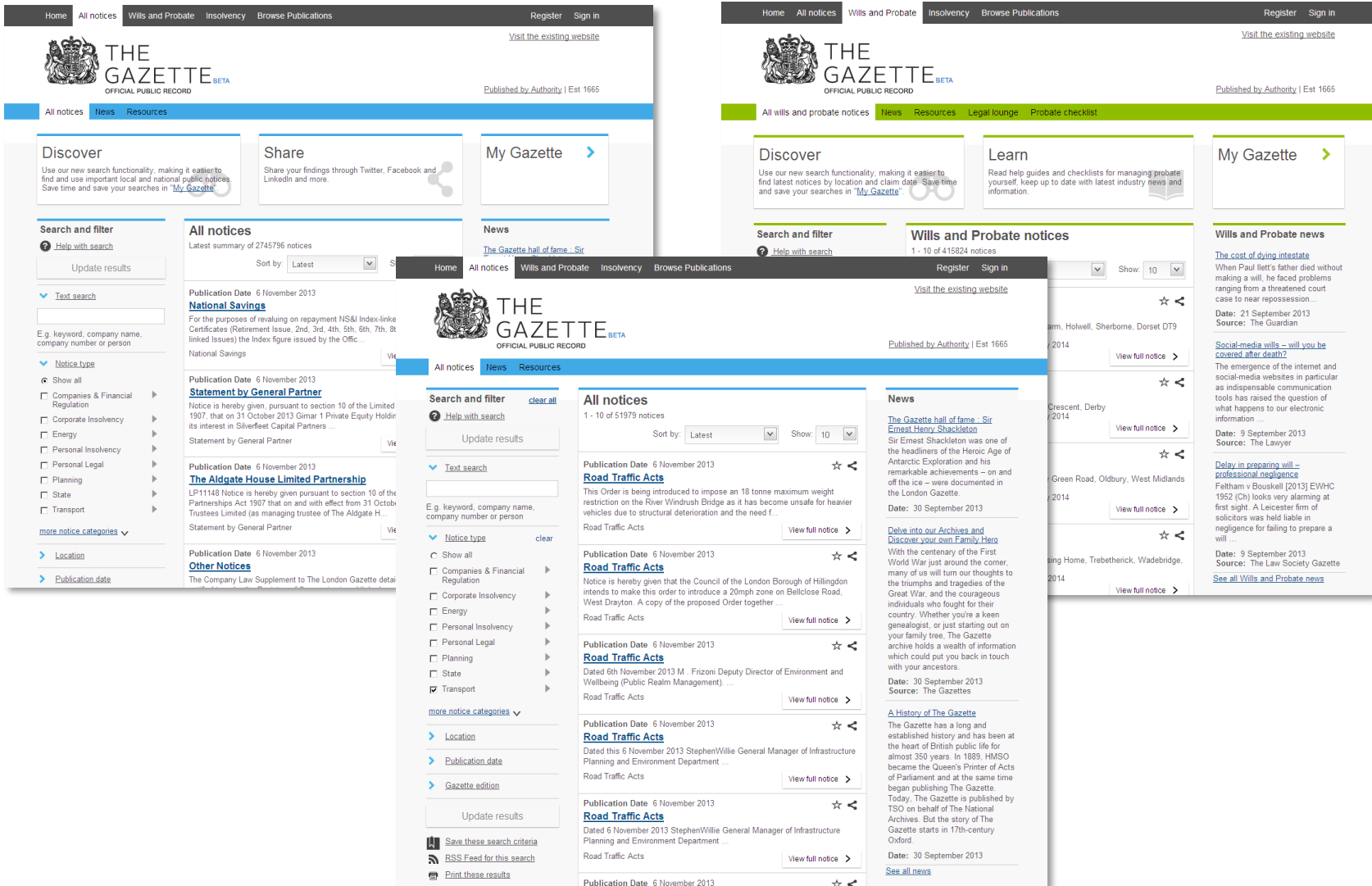
www.thegazette.co.uk

- The Gazette – the official public record for over 350 years
- More than 200,000 notices published each year
- Used by legal professionals, banks, genealogists and the general public
- New online service meets the needs of today's customers



The screenshot shows the homepage of 'THE GAZETTE BETA OFFICIAL PUBLIC RECORD'. The navigation bar includes 'Home', 'All notices', 'Wills and Probate', 'Insolvency', 'Browse Publications', 'Register', and 'Sign in'. A 'Visit the existing website' link is also present. The main header features the Royal Coat of Arms and the text 'THE GAZETTE BETA OFFICIAL PUBLIC RECORD' and 'Published by Authority | Est 1665'. A large image of a military uniform with medals is displayed with navigation arrows. Below this is a section titled 'Share your proud moments with the world' with a sub-headline: 'Find awards and achievements in our Public Notice Board, share them with friends and family through social media, and celebrate them, in print, with a special commemorative edition of The Gazette.' The main content area is divided into several colored boxes with right-pointing arrows: 'DIGITAL TRANSFORMATION' (white), 'ABOUT THE BETA SITE' (white), 'ALL NOTICES' (blue), 'WILLS AND PROBATE' (green), 'INSOLVENCY' (orange), and 'AWARDS AND ACCREDITATION' (pink). On the right side, there is a 'Search and useful links' section with a search input field and a magnifying glass icon, followed by a list of links: 'Register with The Gazette', 'What do you think of our beta website?', 'Placing a notice', and 'Browse latest publications'.

User-focused interfaces built on a core database



The screenshots illustrate the user-focused interfaces built on a core database for THE GAZETTE BETA. The interface includes a navigation bar with links for Home, All notices, Wills and Probate, Insolvency, and Browse Publications. The main content area is divided into sections for Discover, Share, My Gazette, Search and filter, and All notices. The search and filter section allows users to refine results by text search, notice type, and location. The All notices section displays a list of notices with details such as publication date, title, and a brief description. The detailed article page shows the full text of a notice, including the title, date, and a summary of the content. The interface is designed to be user-friendly and accessible, with clear navigation and search options.

*“We are extremely proud of what has been achieved with TSO, it really is a **world first** and an exemplar for what can be achieved with open data if it is approached correctly. Third parties are already building mobile device and other online applications that use the data and API we created. There is a vast community accessing one dataset, in different ways, through different means, freely and easily. That is exactly what we wanted.”*

John Sheridan, Head of Legislation Services, The National Archives



Thank you

Want to discuss further?

peter.camilleri@tso.co.uk

020 7394 4576

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