



UNIVERSITY OF
CAMBRIDGE

Linked Data and Open Data

How can they help your business?

MARK HARRISON

Director, Auto-ID Lab, University of Cambridge

6-8 November 2013

operational excellence
london conference

Outline

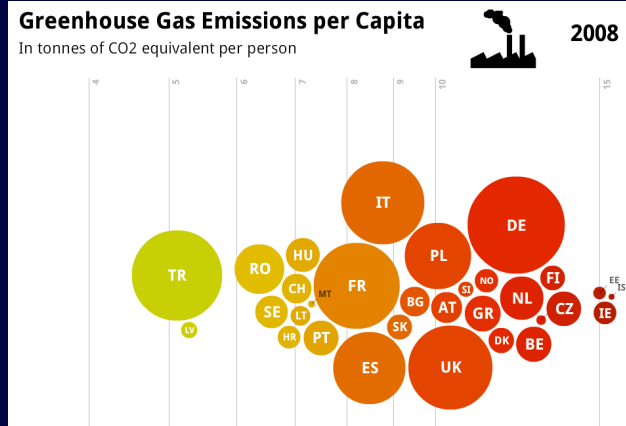
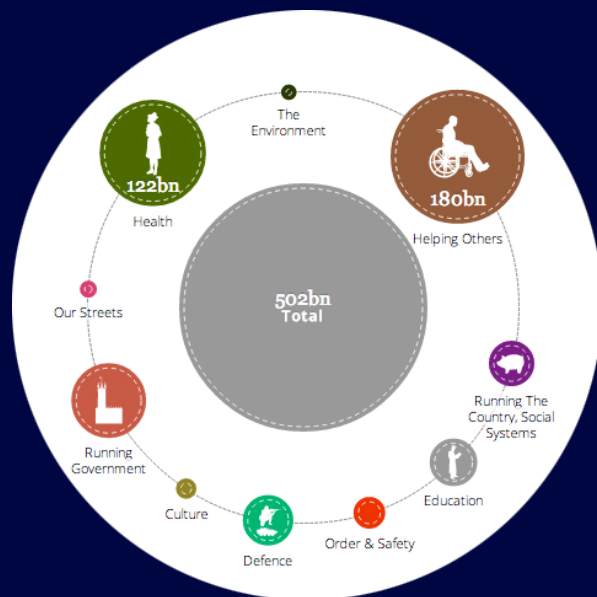
- Open Data sources
- Linked Data technology
- Improved Search Result Listings
- Enabling a product-centric ecosystem

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Open Data



Thursday	Friday
 14°	 13°



11 Ardrossan C & Due
 11 Ardrossan Cha 16:35
 11 Ardrossan Cha 16:39
 12 Ardrossan Sta 16:42
 11 Ardrossan C & 12min
 11 Ardrossan C & 19min



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Finding Open Data



Government spending

Environmental data

Public Transport

Road traffic

Roadworks, Congestion

Accidents

Population / demographics

Local socio-economic data

Economy / Industry

Health

Geographic / Postcode

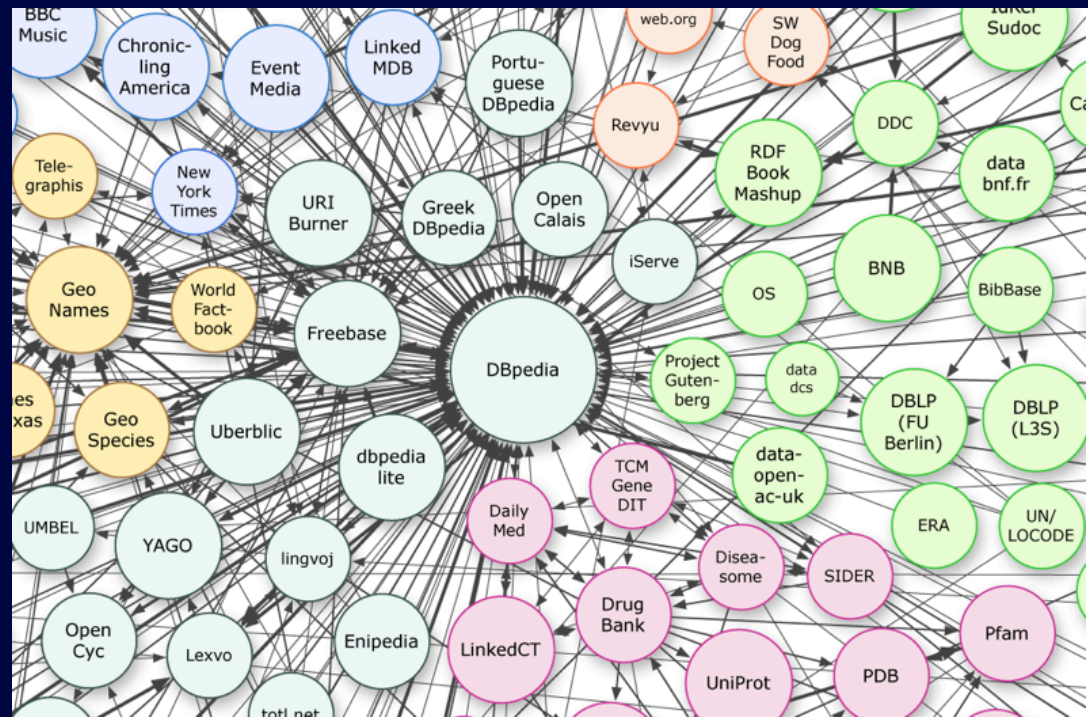
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Linked Open Data



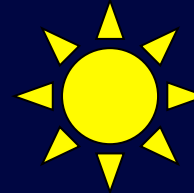
London	
	
Area	
• City	1,572.00 km ² (606.95 sq mi)
• Urban	1,737.9 km ² (671.0 sq mi)
• Metro	8,382.00 km ² (3,236.31 sq mi)
Elevation ^[1]	24 m (79 ft)
Population (2012) ^{[2][3][4]}	
• City	8,308,369
• Density	5,285/km ² (13,690/sq mi)
• Urban	9,787,426
• Urban zone	11,905,500
• Metro	15,010,295



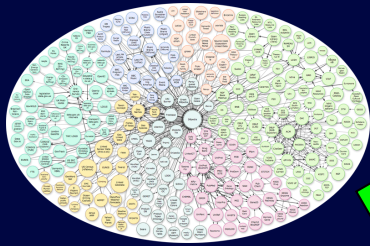
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Using Open Data



Better visibility
of your products / services
to interested consumers



Your company

Greater insights
Better decisions



Private
Enterprise Data

Publish as
linked
open data

Public-facing data
(products / services)

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Search is changing!

Google karine polwart the sun's comin over the hill

Web Images Maps Shopping Videos More Search tools

Karine Polwart songs

Rivers Run This Earthly Spell • 2008 3:09	King of Birds Traces • 2012 4:14	Salters Road Traces • 2012 3:41	The Good Years This Earthly Spell • 2008
Follow the Heron Scribbled in Chalk • 2006 3:11	Sorry This Earthly Spell • 2008 4:18	Cover Your Eyes Traces • 2012 3:27	Dowie Dens of Yarrow Fairest Floor'er • 2007
My Heart's in the Highlands 3:15	Hole in the Heart Scribbled in Chalk • 2006 4:48	Will Ye Go Tae Flanders? Fairest Floor'er • 2007 3:57	Firethief This Earthly Spell • 2008
I'm Gonna Do It All Scribbled in Chalk • 2006 4:57	Daisy Scribbled in Chalk • 2006 3:28	The Sun's Comin' Over the Hill Faultlines • 2004 4:54	Only One Way Faultlines • 2004

Showing results for karine polwart the sun's **coming over the hill**
Search instead for karine polwart the sun's comin over the hill



Karine Polwart sings "The Sun's Coming Over The Hill" - YouTube
www.youtube.com/watch?v=1t689k1Ww80

Artist: Karine Polwart
Album: Faultlines
Released: 2004

Feedback/More info

Kundy martin uoodsmimz0.23 / views • 5:24

Karine Polwart
Singer-songwriter

Karine Polwart is a Scottish singer-songwriter. She writes and performs music with a strong folk and roots feel, her songs dealing with a variety of issues from alcoholism to genocide. Wikipedia

Born: December 23, 1970 (age 42)
Albums: Scribbled in Chalk, This Earthly Spell, Faultlines, Fairest Floor'er, Traces
Children: Rosa Polwart
Music groups: Malinky (2005), Battiefeld Band (2001 – 2002), The Burns Unit
Siblings: Steven Polwart, Kerry Polwart

Upcoming events

8 Nov Fri	Karine Polwart Gloucester (near you)
29 Nov Fri	Karine Polwart Oxford (near you)
7 Nov Thu	Karine Polwart Exeter

People also search for

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Companies already find benefits!



Best Buy

[Directions](#) [Write a review](#)

Address: 100 Cambridgeside Pl, Cambridge, MA 02141, United States

Phone: +1 617-577-8866

Prices: ££££

Hours:

Monday	10:00 am – 9:00 pm
Tuesday	10:00 am – 9:00 pm
Wednesday	10:00 am – 9:00 pm
Thursday	10:00 am – 9:00 pm
Friday	10:00 am – 9:00 pm
Saturday	10:00 am – 9:00 pm
Sunday	12:00–7:00 pm

Reviews

2.5 ★★★★★ 22 Google reviews

More reviews: [citysearch.com](#), [insiderpages.com](#), [kudzu.com](#), [dealsquare.com](#)



30% increase in web traffic
to store pages since
introducing Linked Data

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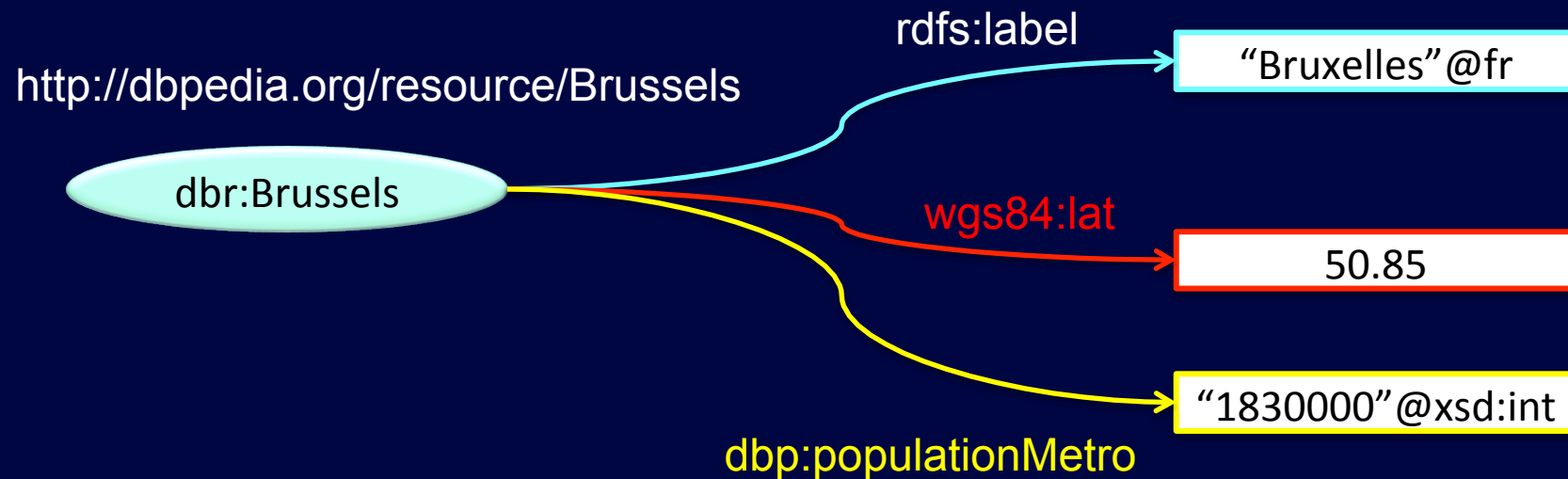
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Linked Data Technology



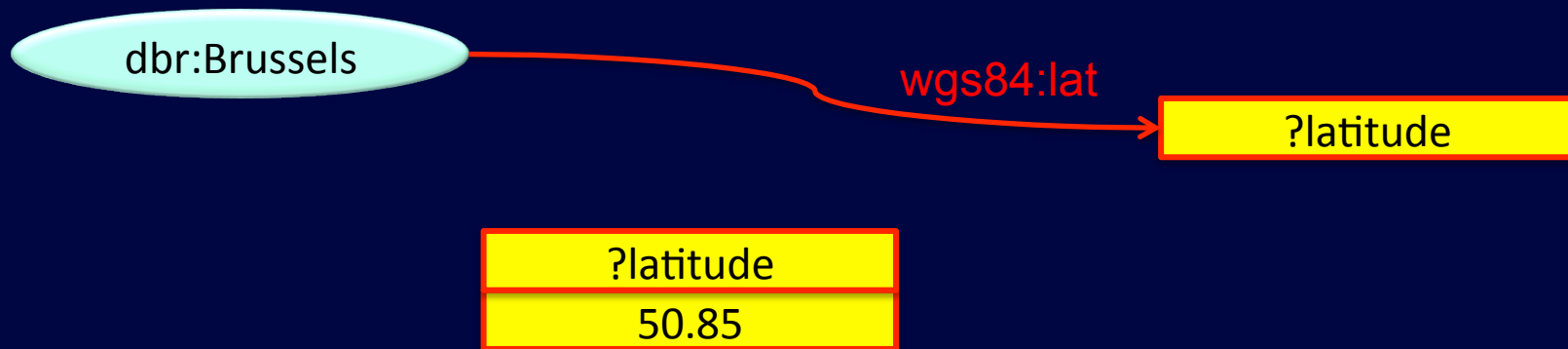
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Using Linked Data (RDF) to write facts

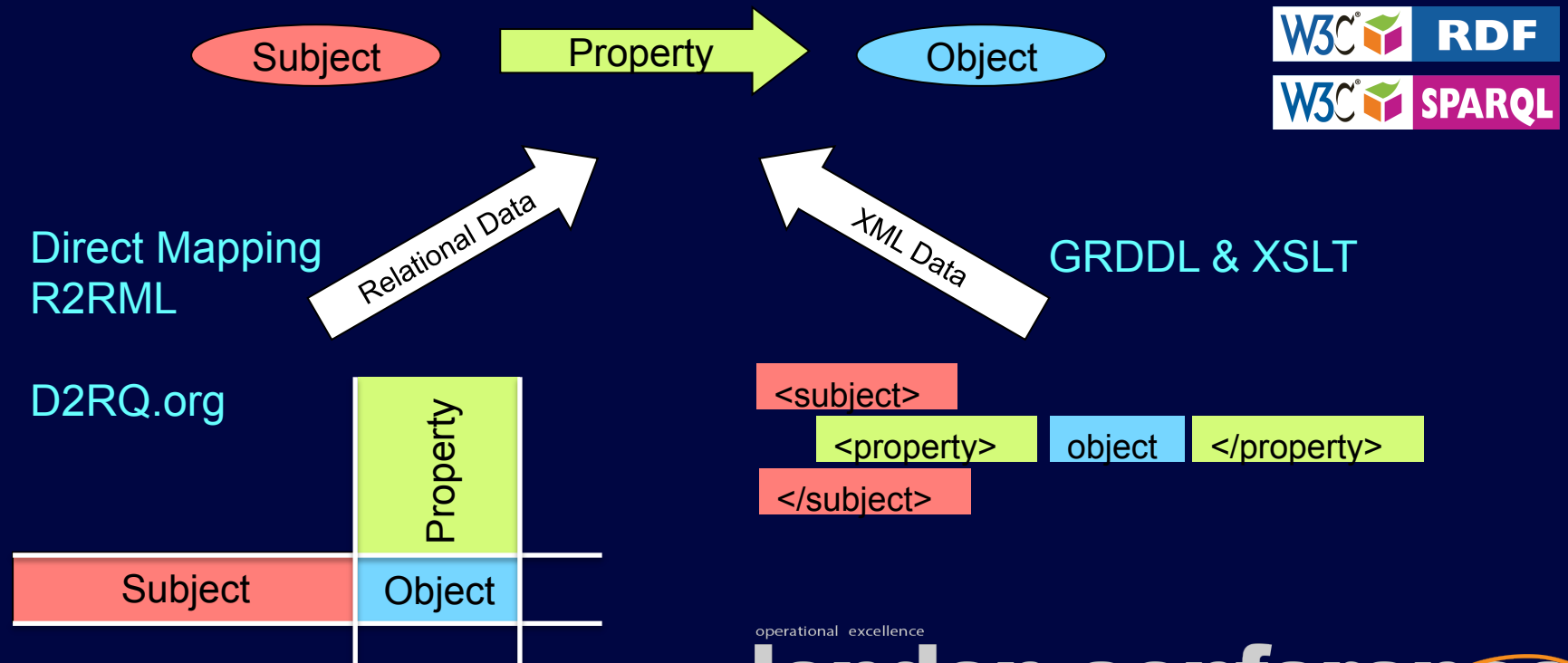


Using SPARQL to query facts

```
SELECT ?latitude WHERE { dbr:Brussels wgs84:lat ?latitude . }
```



Your existing data as Linked Data



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Linked Data vocabularies



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Adding Linked Data to your web pages

The screenshot shows the Google Structured Data Markup Helper interface. On the left, a preview of the Tesco website for 'Nestle Cheerios 600G' is visible. The right pane shows the 'HTML Source with Microdata Markup' where the user can add structured data. The source code includes a comment: `<!-- Microdata markup added by Google Structured Data Markup Helper. -->` and a series of meta tags and links. A 'Download generated markup' button is highlighted.

TESCO

Groceries Favourites Recipes Special Offers

Fresh Food | Bakery | Food Cupboard | Frozen Food | Drinks | Baby | Health & Beauty | Pets |

Groceries > Nestle Cheerios 600G

Nestle Cheerios 600G

Product Details

A serving contains the following of your guideline daily amount

Calories	Sugar	Fat	Saturates	Salt
175	12g	3g	2g	0.5g
9%	14%	5%	8%	8%

Deliciously crunchy Os, packed with 4 whole grains. Say Yes to Cheerios

It's simple everybody knows that the whole family loves Cheerios. The perfect

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Example: web page with Linked Data

The screenshot shows the original Tesco website for the product 'Nestle Cheerios 600G'. The page layout includes a top navigation bar with links like 'Tesco.com', 'My Orders', 'My Account', 'Sign In', 'Website feedback', and 'Help'. Below this is a secondary navigation bar with categories like 'Groceries', 'Favourites', 'Recipes', 'Special Offers', 'Great nights in', and 'Delivery Saver'. The main content area features a large product image of the Cheerios box, a price tag of £3.19 (£0.53/100g), and a quantity selector. To the right of the product image is a 'Multisearch' box with a search bar and a list of suggestions (Milk, Mushrooms, Eggs). Below the product image is a 'Product Details' section with a table of nutritional information and a 'Cheaper Alternative' section for 'Tesco Multigrain Hoops'. At the bottom of the page is an 'Ingredients' section. The right sidebar contains a 'Shopping basket' section with a 'View full basket' button and a 'Checkout' button.

A serving contains the following of your guideline daily amount					
Calories	Sugar	Fat	Saturates	Salt	
175	12g	3g	2g	0.5g	vegetarian
9%	14%	5%	8%	8%	

Ingredients

Cereal Grains (77.5%) (Whole Grain OATS (38.0%), Whole Grain WHEAT (18.6%), Whole Grain BARLEY (12.8%), Whole Grain RICE (5.5%), Whole Grain MAIZE (2.6%)), Sugar, Wheat Starch, Partially Inverted Brown Sugar Syrup, Salt, Tripotassium Phosphate, Sunflower Oil, Colours: Caramel, Annatto, Carotene, Antioxidant: Tocopherols, Vitamins and Minerals: Vitamin C, Niacin, Pantothenic Acid, Thiamin (B1), Vitamin B6, Riboflavin (B2), Folic Acid (Folate), Vitamin B12, Calcium Carbonate, Iron. MAY CONTAIN NUT TRACES. To produce 100g of this product 77.5g of Whole Grain was included in the recipe

Original web page has no Linked Data

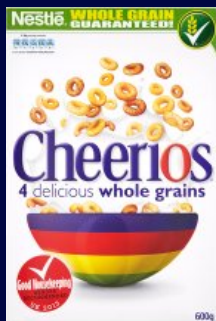
Our modified version has...

<http://tinyurl.com/rdfa-test>

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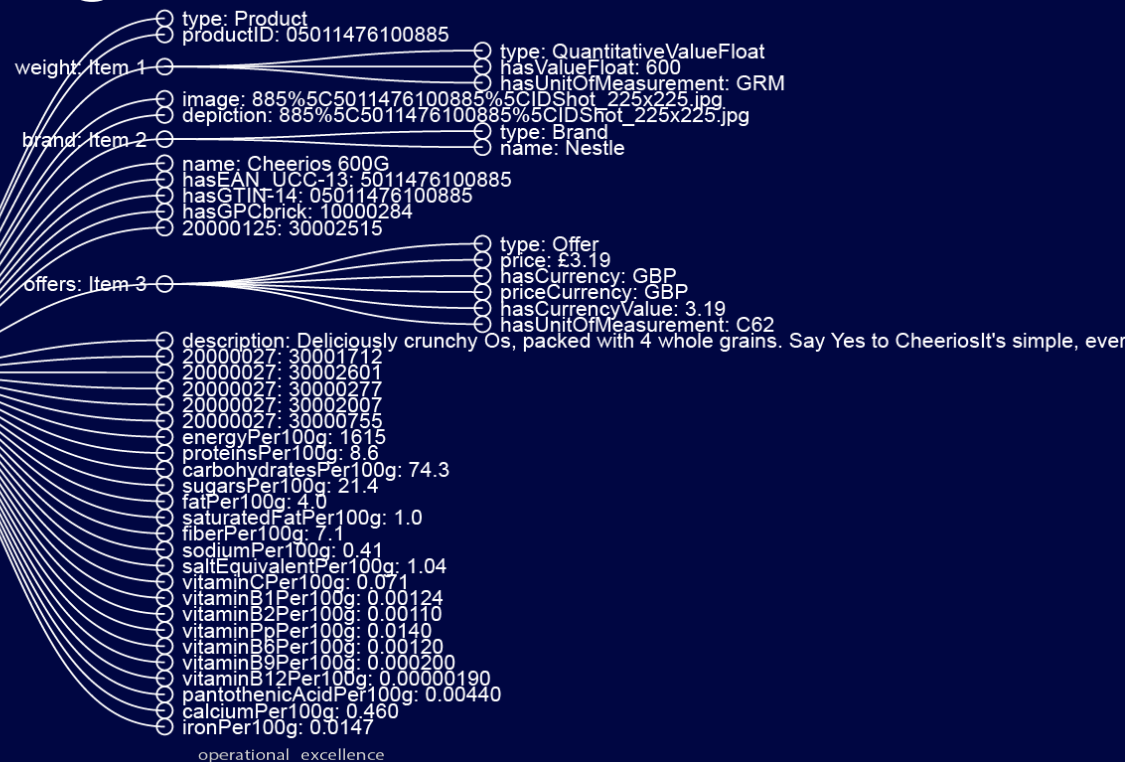
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Example: web page with Linked Data



Web Page G

05011476100885



<http://tinyurl.com/rdfa-test>

Visualisation by
<http://rdfa.info/play>

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Enabling new consumer interactions



Organic?	☐
Skimmed	☐
Half Fat	☒
Full Fat	☐
Max. Price	
How Urgent?	1hr
How Far?	1km

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Enabling new consumer interactions



URL (user manual)

URL (user forum)

URL (product support)

URL (firmware updates)

URL (driver software)

URL (warranty registration)

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GS1 Digital initiative: Get Involved!

Using technology such as Linked Open Data
to make trustworthy data about products and services
available on the web

To improve visibility of products and product offerings

To enable enhanced consumer interactivity with products and
support new services and applications

Contact: robert.beideman@gs1.org

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Summary

- Use Open Data sources to enrich your internal data and to inform strategic and tactical decisions
- Linked Data technology is transforming the Web into a massive globally distributed database of facts
- Search is becoming smarter and more semantic
Start reaping the benefits now and don't be left behind!

More info: www.autoidlabs.org.uk/GS1Digital

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