



LOD2

Creating Knowledge out of Interlinked Data

Linked Open Data

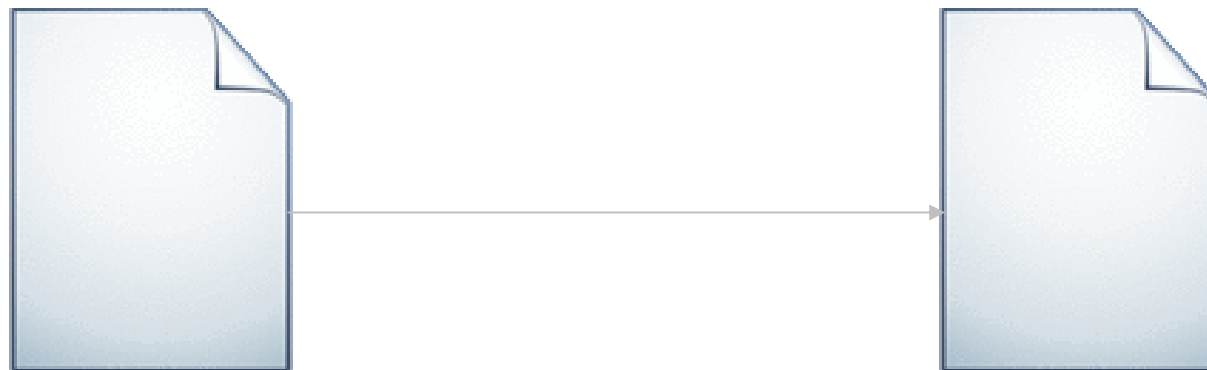
Uroš Milošević

World Wide Web: Motivacija

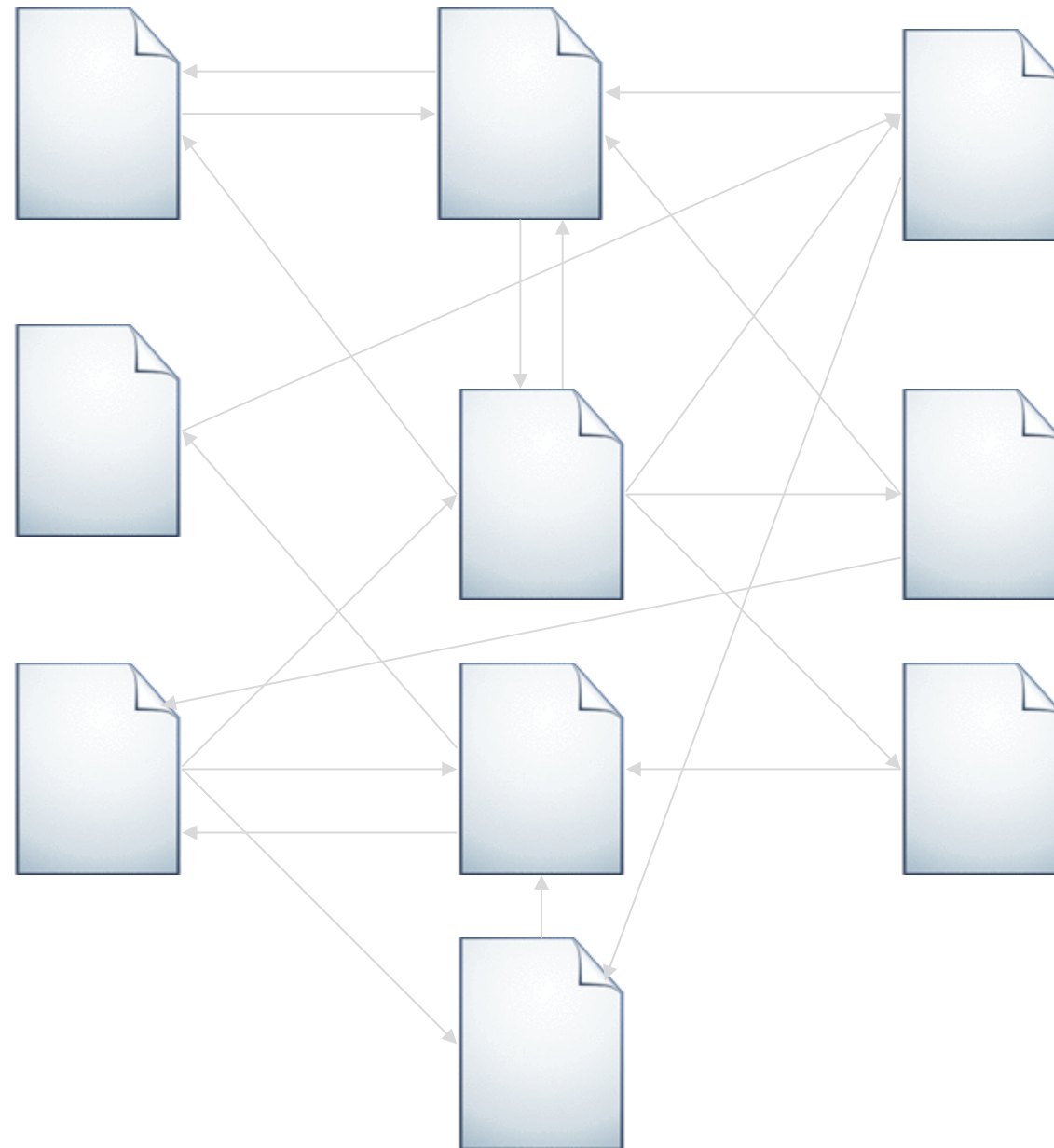
- Kako rešiti problem nekompatibilnosti?
- Različiti
 - Ljudi
 - Računari
 - Operativni sistemi
 - Aplikacije
 - Formati podatakaitd.



World Wide Web: Veze

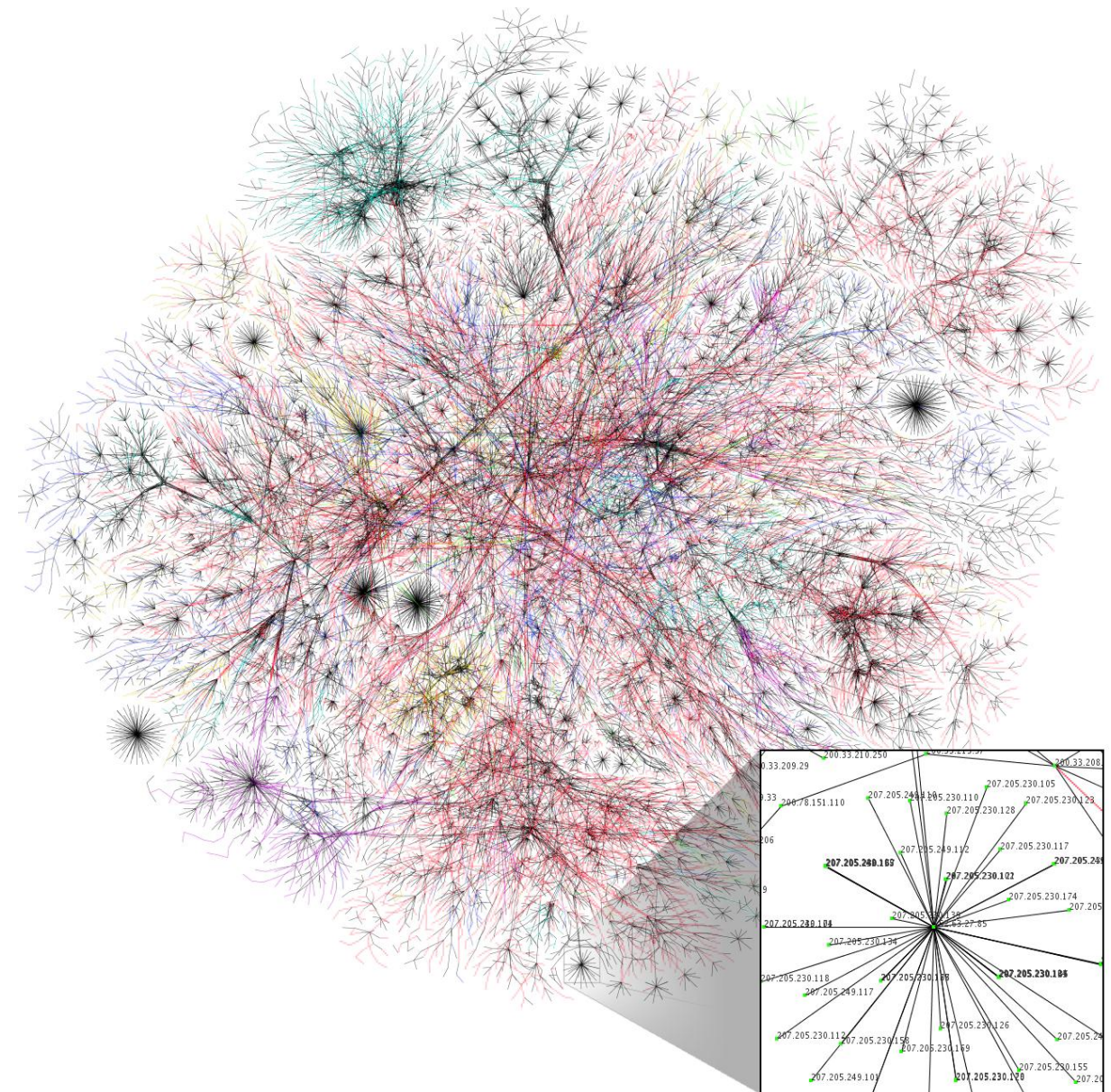


World Wide Web: Veze



World Wide Web : Danas?

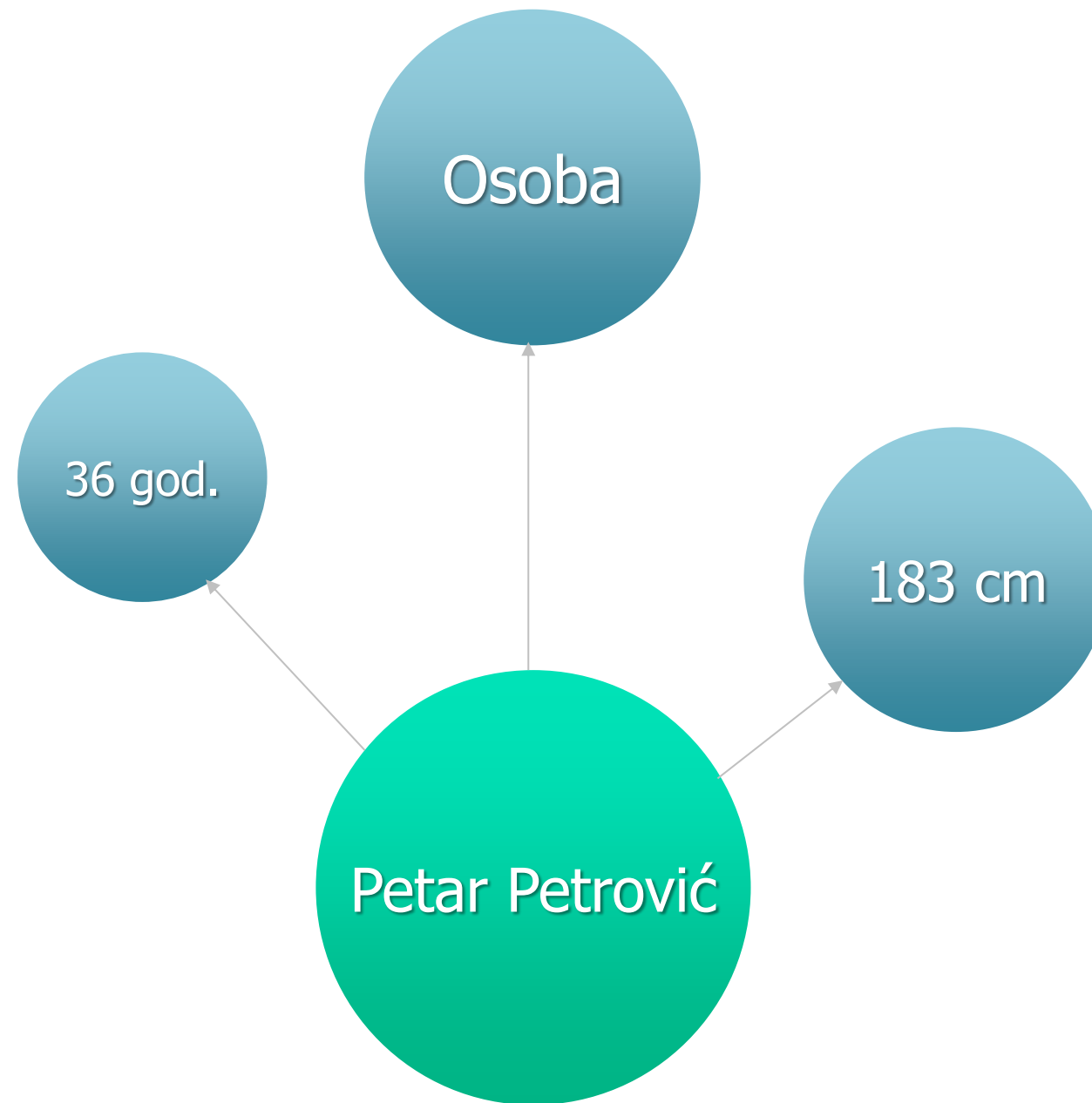
- Rast WWW-a (br. strana)
 - **1997.** – 320 miliona
 - **1999.** – 800 miliona
 - **2013.** – više od **100 milijardi?**



<http://www.opte.org/maps/>

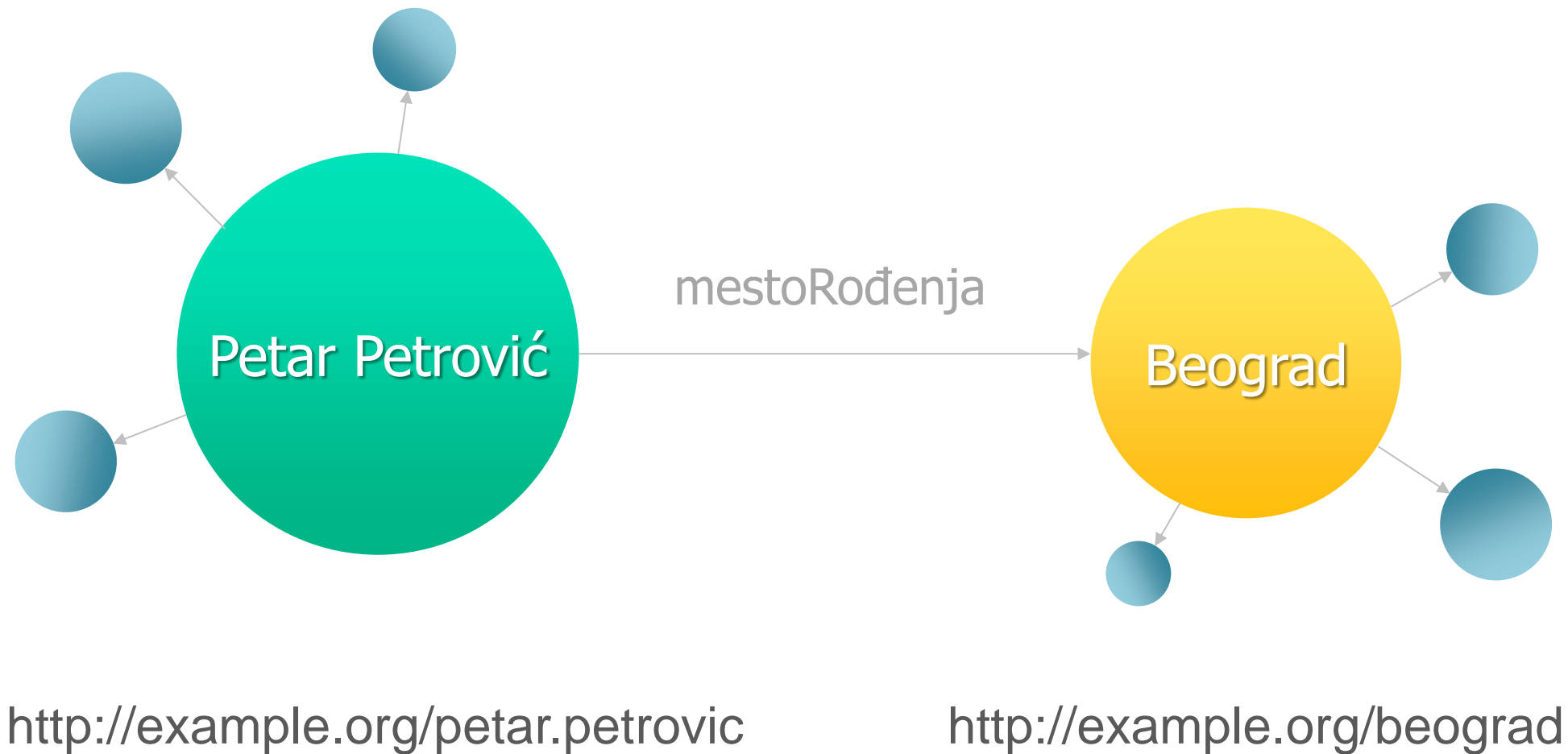
DOKUMENT vs. PODATAK

Podaci: *Linked Data*?

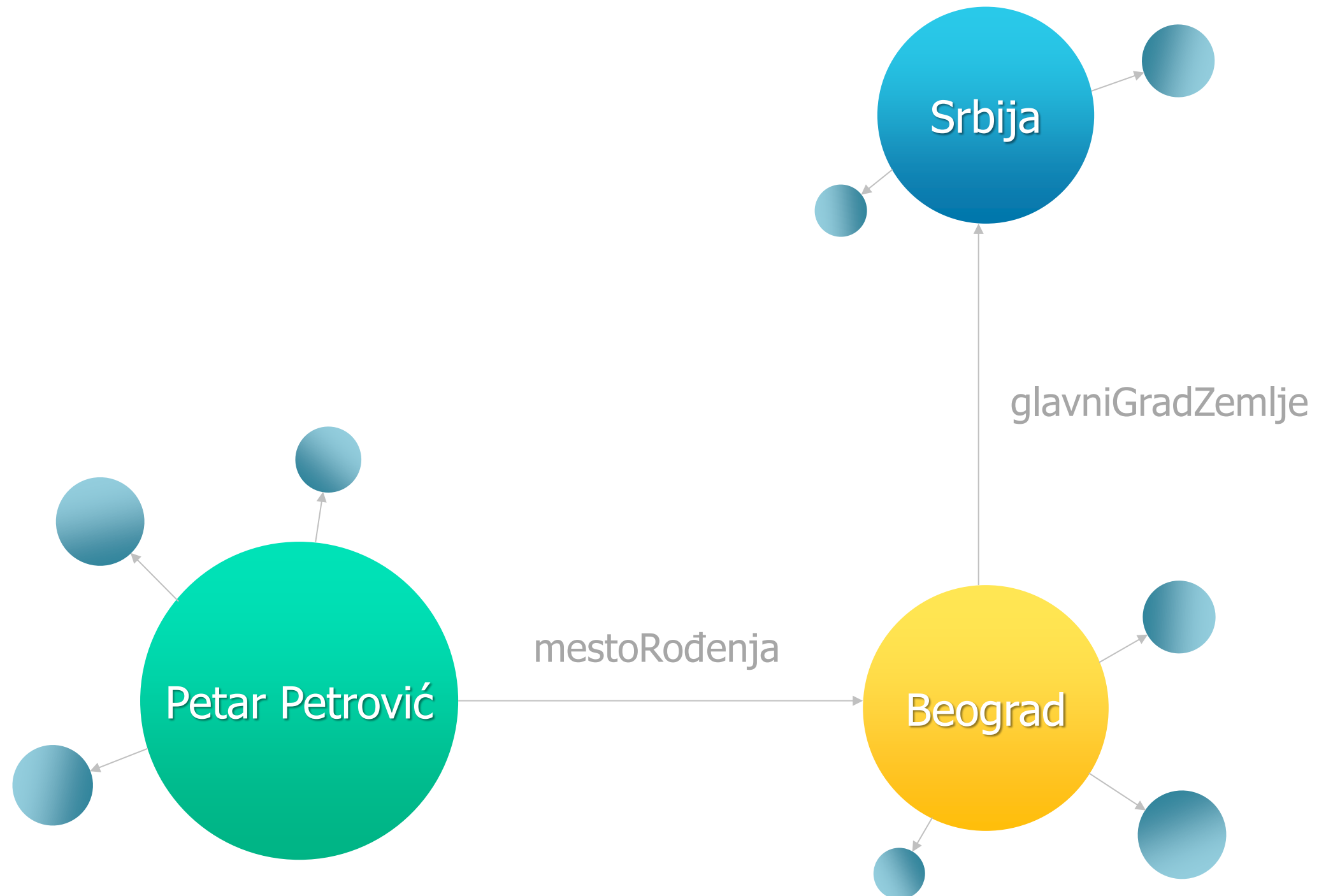


<http://example.org/petar.petrovic>

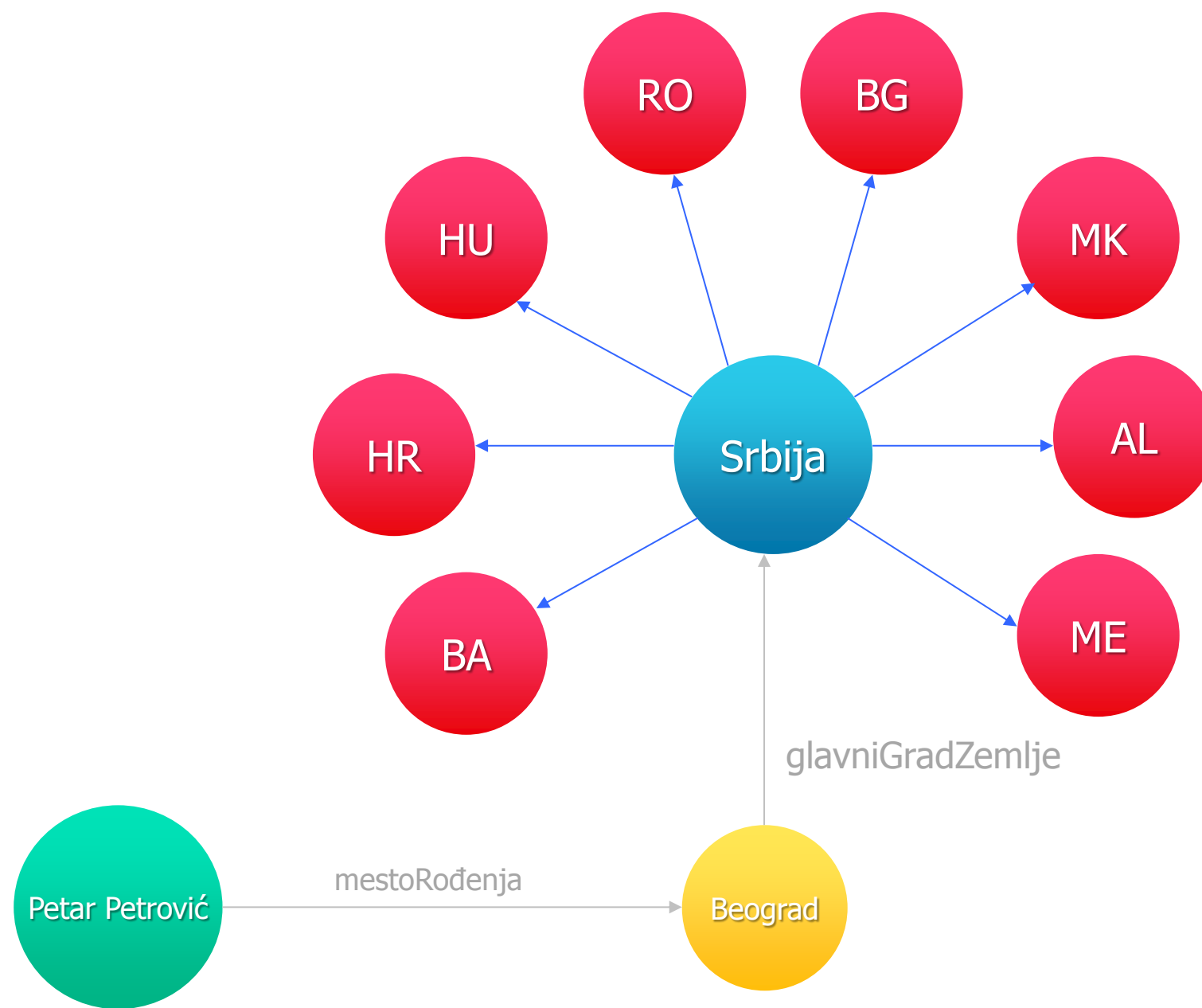
Podaci: *Linked Data*?



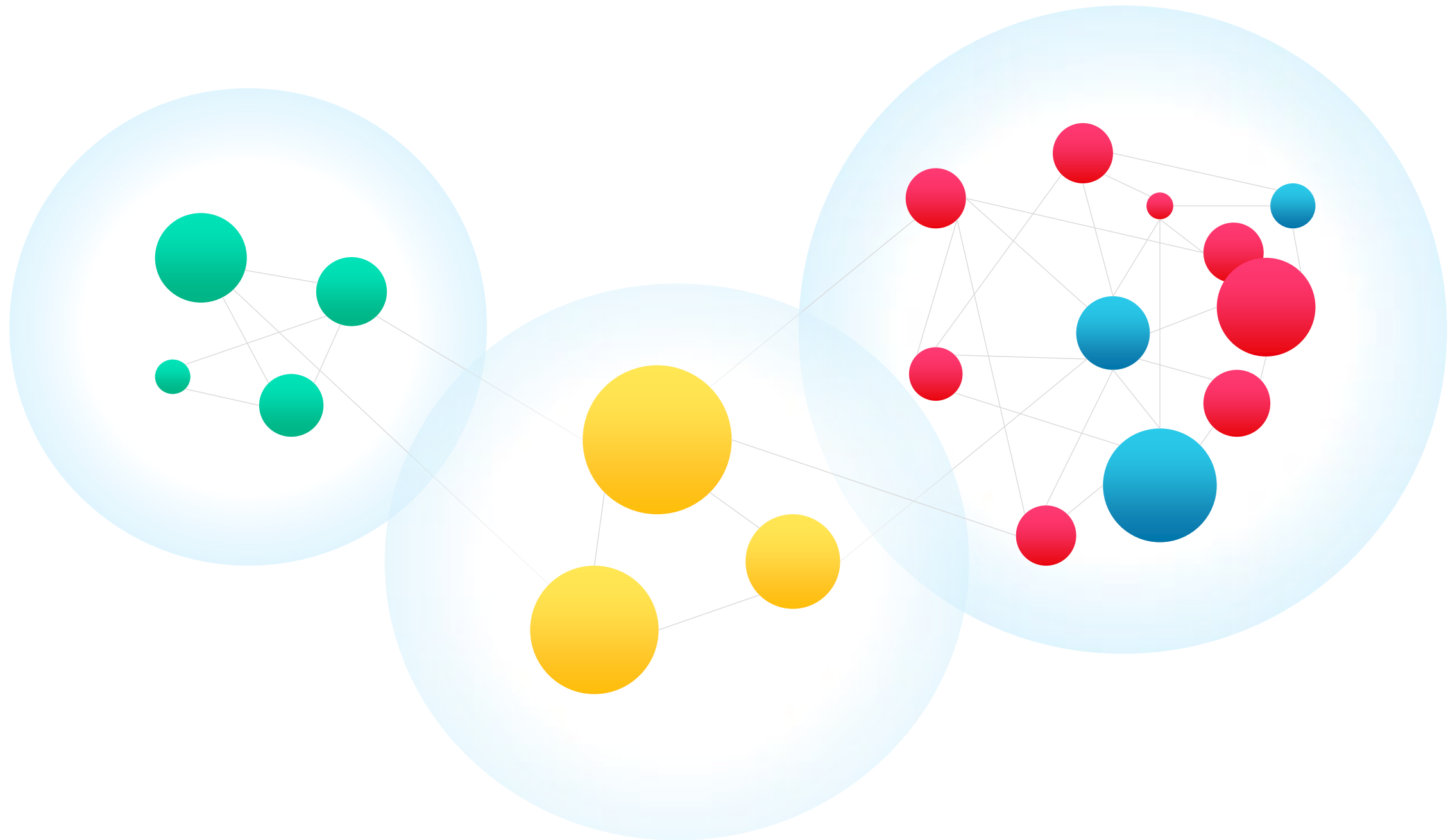
Podaci: *Linked Data*?



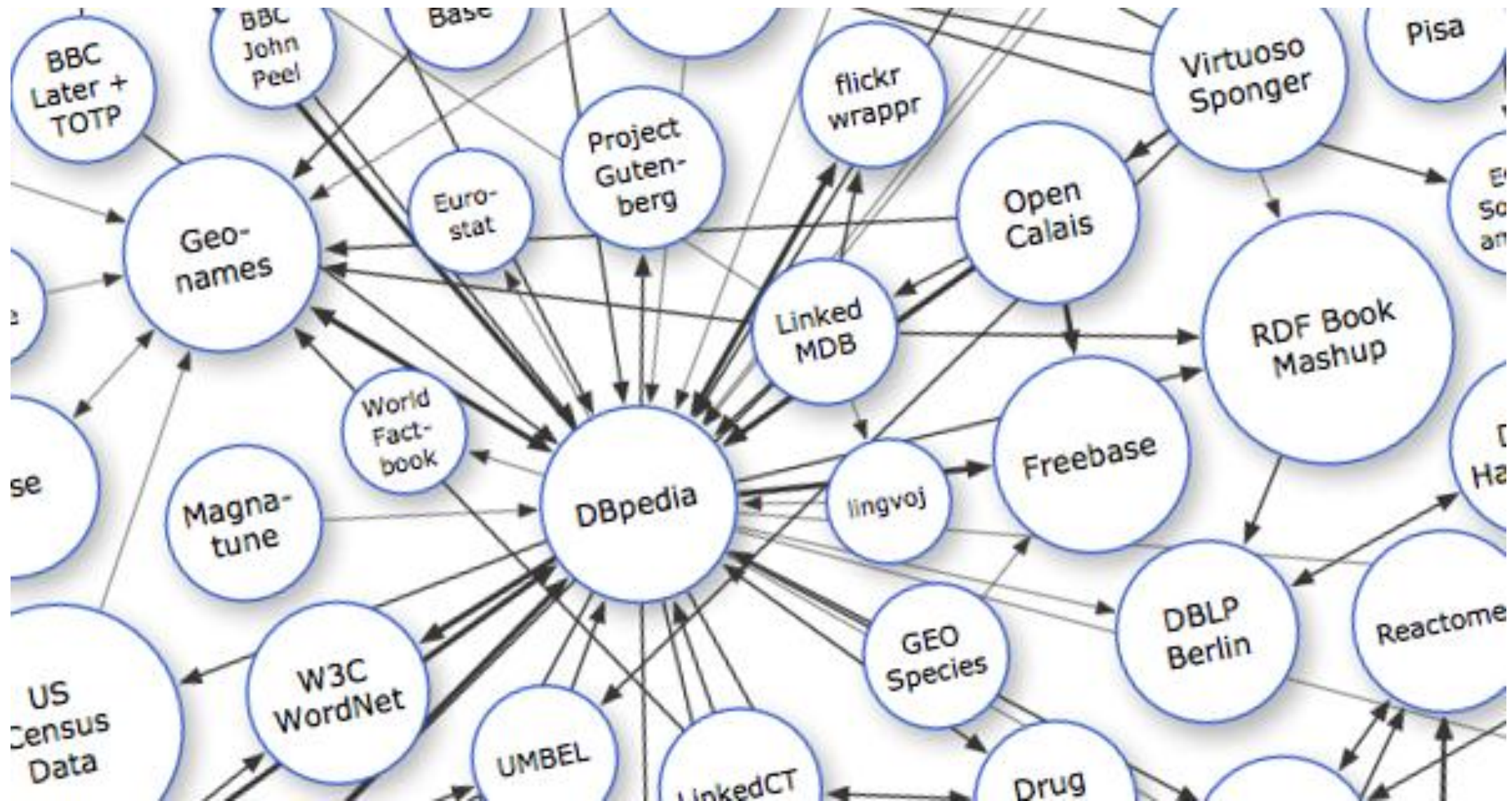
Podaci: *Linked Data*?



Podaci: *Linked Data*?

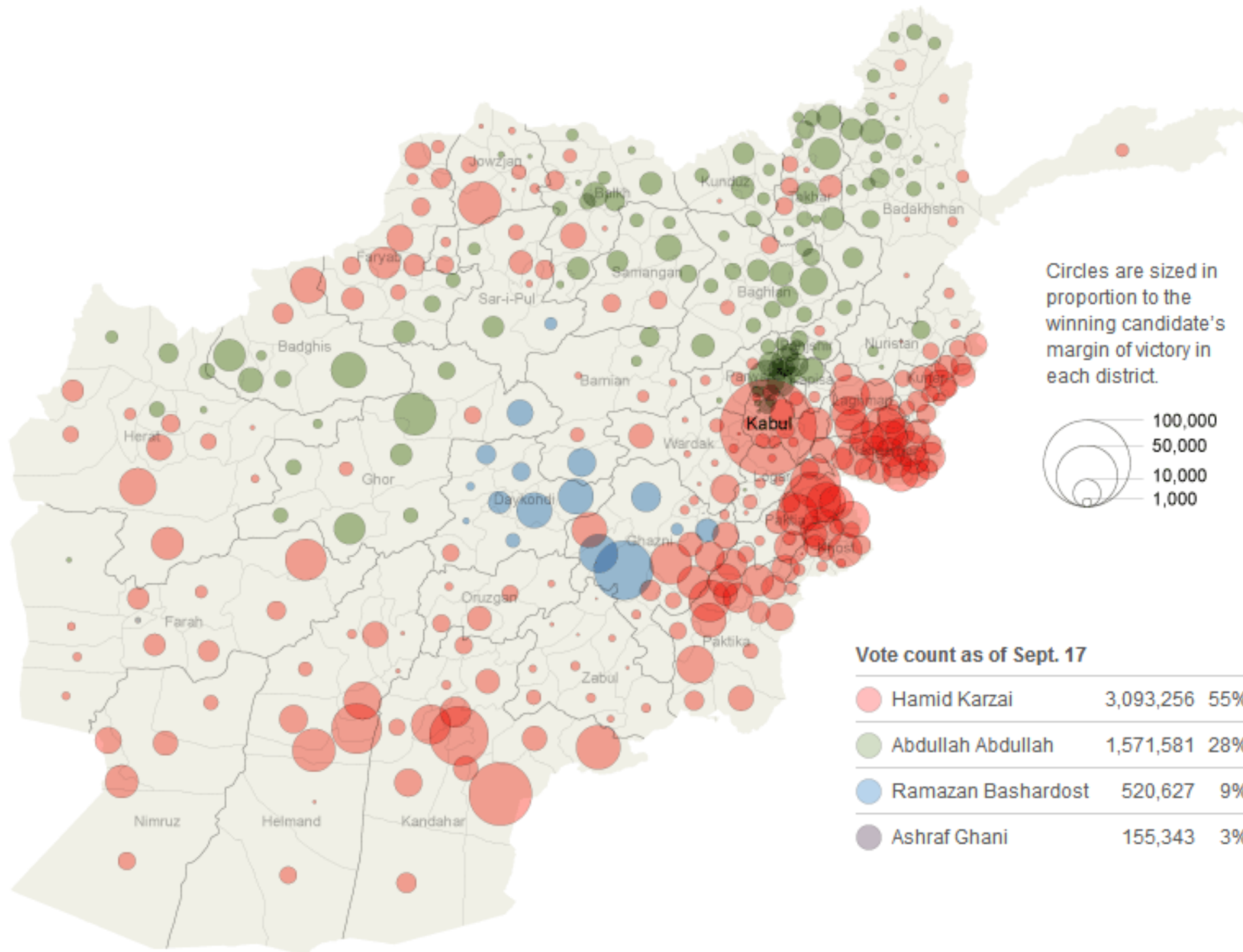


Podaci: *Linked Data*?



ZAŠTO OTVORITI PODATKE (KAO LINKED DATA)?

ZAŠTO OTVORITI: Avganistan - Izbori



ZAŠTO OTVORITI: UK – Javna potrošnja

WHERE DOES MY MONEY GO?

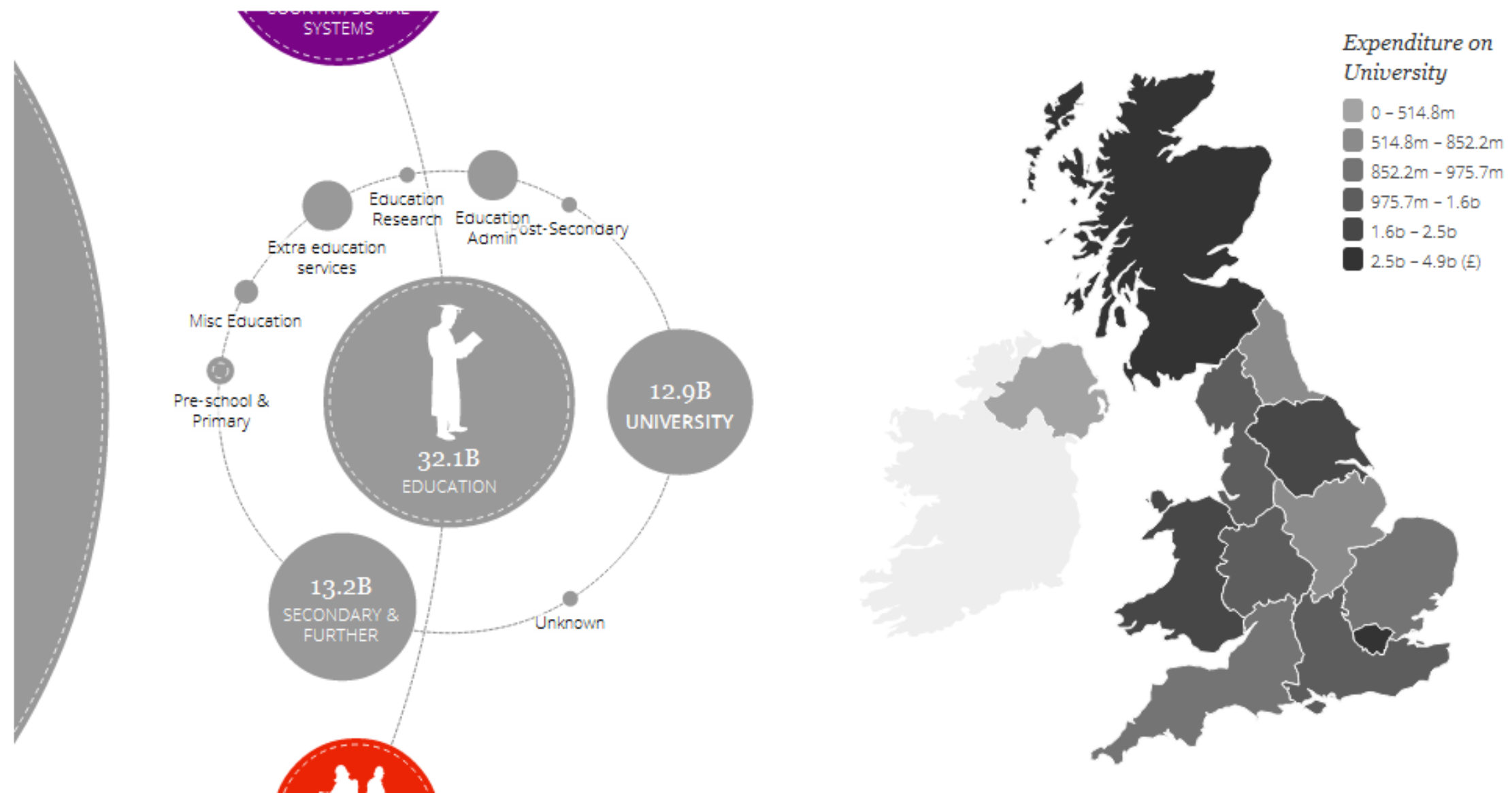
Showing you where your taxes get spent

The Daily Bread

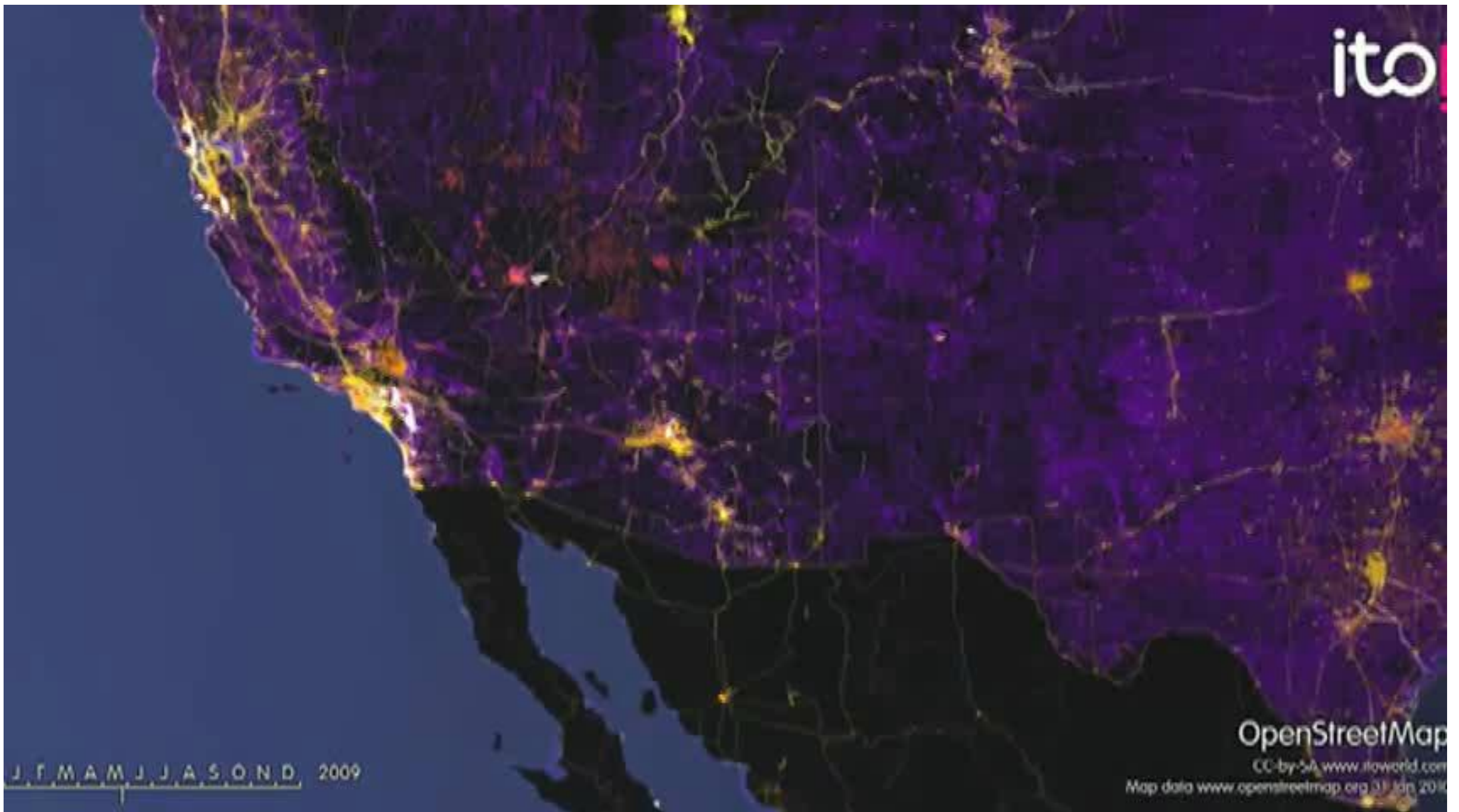
Country & Regional Analysis

Departmental Spending

About



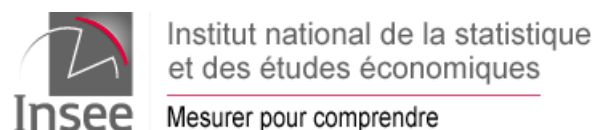
ZAŠTO OTVORITI: Open Street Map



<http://vimeo.com/itoworld>

ZAŠTO OTVORITI: Evropa (javni sektor)

- **Evropska komisija**
- **Institut national de la statistique et des études économiques (FR , statistički podaci)**
- **Institut national de l'information géographique et forestière (FR, geografski podaci)**
- **Istituto nazionale di statistica (IT, statistički podaci)**
- **Office for National Statistics (UK, statistički podaci)**
- **Ordnance Survey (UK, geografski podaci)**
- **Land Registry (UK, podaci o nepokretnostima)**
- **Deutsche Nationalbibliothek (DE, normativni podaci)**
- **Norsk rikskringkasting AS (NO, muzički podaci)**
- itd.



Legal notice | Contact | Search

English ▼



European Union Open Data Portal BETA

europa.eu

Europa > Open Data Portal > Linked Data

Home
Data
Applications
Linked Data
About

🔒 *Data provider's area*

About Linked Data

Linked Data is a standard way to represent data on a wide range of topics. Publishing Linked Data makes it easier for developers to connect information from different sources, resulting in new and innovative applications. For example an application could combine crime, employment and house price data to help you choose a place to live. To support this standard, the Open Data Portal makes the catalogue metadata available as Linked Data. We have also published many datasets as Linked Data, and will continue to increase the amount of Linked Data available via the portal.

To support this standard, the Open Data Portal makes the catalogue metadata available as Linked Data. We have also published many datasets as Linked Data, and will continue to increase the amount of Linked Data available via the portal.

SPARQL

You can search for the metadata stored in the EU Open Data Portal triple store by using the SPARQL endpoint query editor below.

Namespaces

```

PREFIX dcat: <http://www.w3.org/ns/dcat#>
PREFIX odp: <http://ec.europa.eu/open-data/ontologies/ec-odp#>
PREFIX dc: <http://purl.org/dc/terms/>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
        
```

SPARQL Query

```

select distinct ?g ?o where { graph ?g {?s dc:title ?o. filter regex(?o, 'Forest / Non-Forest Map 2000', 'i')} }
        
```

Sample Queries

- 'Retrieve dataset with specific title (eg. "Gas prices for household consumers")'
- 'Retrieve number of datasets per publisher'
- 'Retrieve all publishers'
- Retrieve all datasets that have been modified after a certain date
- Retrieve all the resources from a dataset with a title that contains specific words (eg. "Gas prices for household consumers")

Further reading



ISA

Interoperability Solutions for European Public Administrations

European Commission > ISA

Contact ISA

Search the ISA website



FOCUS ON

NEWS

POLICY

ACTIONS

EVENTS

VIEWS ON ISA

LIBRARY

FAQ

Share



ISA programme: collaboration beyond e-borders and sectors

Administrative procedures have the reputation of being lengthy, time-consuming and costly. Electronic collaboration between Public administrations can make these procedures quicker, simpler and cheaper for all parties concerned, in particular when transactions need to be done cross-border and/or cross-sector. The ISA programme of the European Commission facilitates such transactions through more than 40 actions with a budget of some EUR 160 million.

[More on actions](#)

[More on policy](#)

News & Updates



Lithuania: Prime Minister and Minister of the Interior visit ISA stand during Vilnius eGov Conference

02/12/2013

[All News & Updates](#)

Events



8th International Conference for Internet Technology and Secured Transactions (ICITST-2013)

09/12/2013

[All events](#)

Views on ISA



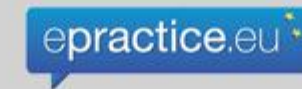
Natalia Aristimuno Perez
Head of Unit, European Citizens' Initiative, IT implementation

[Find out more here.](#)

[Testimonials](#)

Work together!

Join the collaborative platforms in the areas of Open Source & Semantic Interoperability on Joinup, eGovernment best practice on ePractice.eu and discuss with your peers.




ZAŠTO OTVORITI: Svet (javni sektor)

- **Ujedinjene Nacije** (poljoprivredni, geopolitički, socijalni, ekonomski, ekološki itd. podaci)
- **Bureau of Meteorology** (AU, meteorološki podaci)
- **Library of Congress** (US, normativni podaci)
- **Department of Health and Human Services** (US, zdravstveni podaci)
- **Environmental Protection Agency** (US, ekološki podaci)
- **Department of Defense** (US, \$60 miliona dolara za Linked Data)
- **National Diet Library** (JP, normativni podaci)
- itd.



An Official Web Site of the United States Government
Change Text Size
SHARE



DATA.GOV

EMPOWERING PEOPLE

/ Communities

[Open ID](#) | [Login](#)

Search Data Catalog

Search in Developers

HOME
ABOUT ▾
DATA
METRICS ▾
OPEN GOVERNMENT ▾
BLOGS
COMMUNITIES ▾

Developers

DATA
WEB SERVICES
SOURCE CODE
CHALLENGES
SEMANTIC WEB
BLOGS
LET'S TALK

Data.gov » Communities » Developers


As the Semantic Web (sometimes called [Web 3.0](#)) emerges, the US government is pleased to be in the vanguard of this new technology space. To this end, Data.gov is hosting demonstrations and documents that will help familiarize Data.gov users with this new technology, and that will let citizens and developers work with the government in creating a new generation of "linked data" mash ups.

Data.gov now hosts a set of Resource Description Framework ([RDF](#)) documents containing triples created by converting a number of the Data.gov datasets into this format, making over 6.4 billion triples of open government data available to the community. An index of all the RDF documents on Data.gov is [here](#).

The URI scheme chosen is a very simple one for the time being, designed to allow users to easily explore and extend the data. A proposal is being [developed with RPI](#), one of the Data.gov community leaders, for a new encoding of datasets converted from CSV (and other formats) to RDF. We're looking forward to a design discussion to determine the best scheme for persistent and dereferenceable government URI naming with the international community and the [World Wide Web Consortium](#) to promote international standards for persistent government data (and metadata) on the World Wide Web.

Recent Stories

Data.gov Mashathon 2010: an Energy Data Mashup



Ever wonder how residential energy use varies across the U.S.? By combining data from the Energy Information Administration (EIA) on Data.gov with data from OpenEI.org, the U.S. Census and SmartGrid.gov, [this mashup](#) compares 7 cities with populations of roughly half a million. With differing electricity rates, median income levels, energy-related incentives and types of Smart Grid programs being introduced, cities across the country are transitioning to a new energy marketplace in unique ways.

ZAŠTO OTVORITI: Privatni sektor

- **Google** (opšti podaci)
- **Facebook** (lični podaci)
- **New York Times** (vesti)
- **BBC** (vesti)
- **Elsevier** (naučne publikacije)
- itd.



facebook

The New York Times

BBC





Marko Jarić
Basketball Player

Marko Jarić is a Serbian professional basketball player. He is married to Brazilian model Adriana Lima, with whom he has two daughters. [Wikipedia](#)

Born: October 12, 1978 (age 35), Belgrade, Serbia

Height: 6' 7" (2.01 m)

Weight: 225 lbs (102 kg)

Spouse: [Adriana Lima](#) (m. 2009)

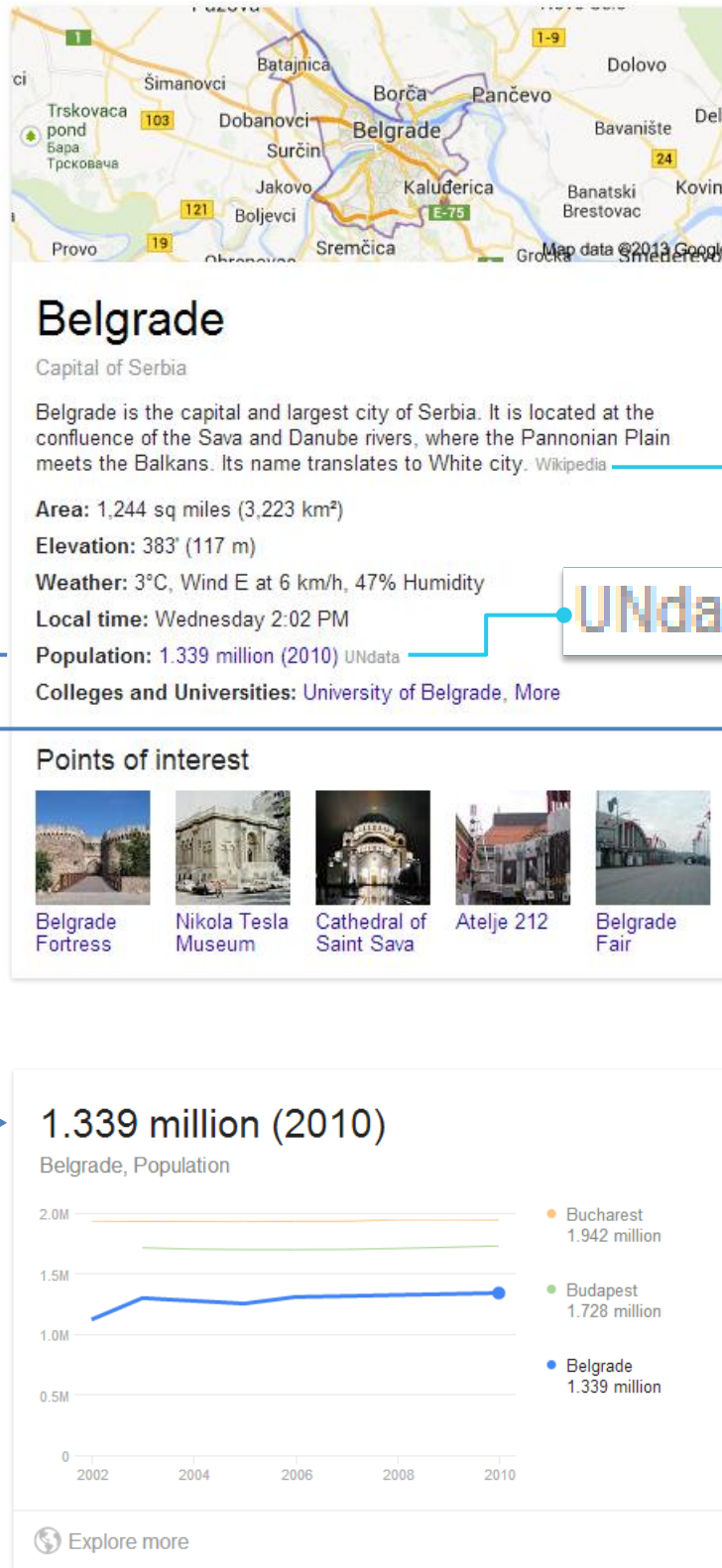
Salary: 7.1 million USD (2009)

Children: Sienna Lima Jarić, Valentina Lima Jarić

Get updates about Marko Jarić?

People also search for

- [Adriana Lima](#) Spouse
- [Alessandra Ambrosio](#)
- [Peja Stojaković](#)
- [Sam Cassell](#)
- [Darko Miličić](#)



Belgrade
Capital of Serbia

Belgrade is the capital and largest city of Serbia. It is located at the confluence of the Sava and Danube rivers, where the Pannonian Plain meets the Balkans. Its name translates to White city. [Wikipedia](#)

Area: 1,244 sq miles (3,223 km²)

Elevation: 383' (117 m)

Weather: 3°C, Wind E at 6 km/h, 47% Humidity

Local time: Wednesday 2:02 PM

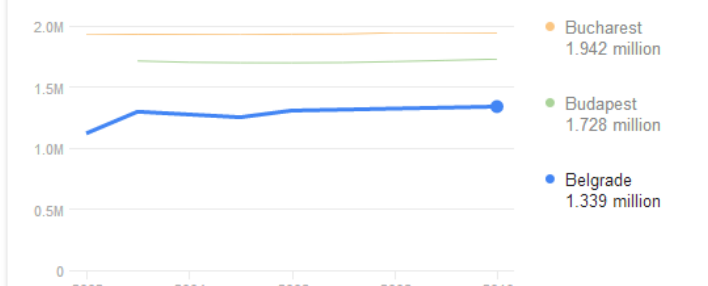
Population: 1.339 million (2010) [UNdata](#)

Colleges and Universities: University of Belgrade, [More](#)

Points of interest

- [Belgrade Fortress](#)
- [Nikola Tesla Museum](#)
- [Cathedral of Saint Sava](#)
- [Atelje 212](#)
- [Belgrade Fair](#)

1.339 million (2010)
Belgrade, Population

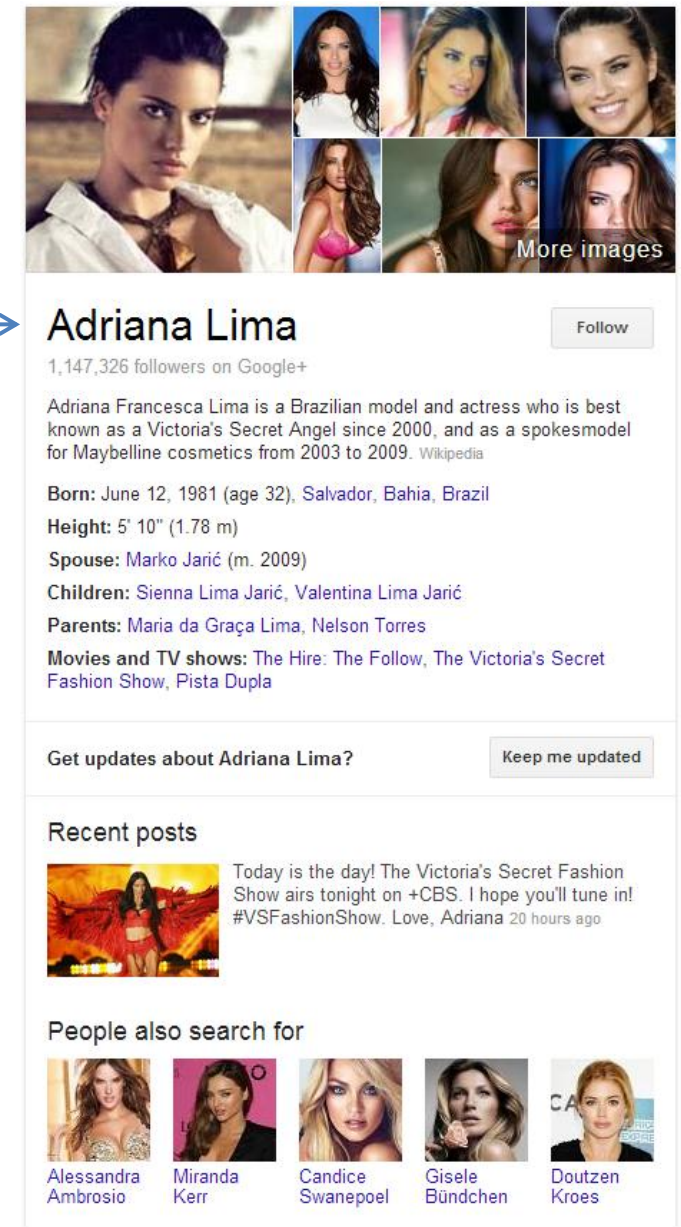


City	Population (2010)
Bucharest	1.942 million
Budapest	1.728 million
Belgrade	1.339 million

Explore more

Wikipedia

UNdata



Adriana Lima

1,147,326 followers on Google+

Adriana Francesca Lima is a Brazilian model and actress who is best known as a Victoria's Secret Angel since 2000, and as a spokesmodel for Maybelline cosmetics from 2003 to 2009. [Wikipedia](#)

Born: June 12, 1981 (age 32), Salvador, Bahia, Brazil

Height: 5' 10" (1.78 m)

Spouse: [Marko Jarić](#) (m. 2009)


Children: Sienna Lima Jarić, Valentina Lima Jarić

Parents: Maria da Graça Lima, Nelson Torres

Movies and TV shows: The Hire: The Follow, The Victoria's Secret Fashion Show, Pista Dupla

Get updates about Adriana Lima?

Recent posts

 Today is the day! The Victoria's Secret Fashion Show airs tonight on +CBS. I hope you'll tune in! #VSFashionShow. Love, Adriana 20 hours ago

People also search for

- [Alessandra Ambrosio](#)
- [Miranda Kerr](#)
- [Candice Swanepoel](#)
- [Gisele Bündchen](#)
- [Doutzen Kroes](#)



STANJE U SRBIJI?

PODACI: Model za ocenu transparentnosti

- Objavite podatke na Web-u (u bilo kom formatu)
- Objavite strukturirane podatke (npr. Excel umesto skeniranog dokumenta u .jpg-u ili .pdf-u)
- Koristite nekomercijalni format (npr. .csv umesto .xls-a)
- Koristite URL-ove za identifikatore koncepata, kako bi drugi mogli da upere svoje resurse prema Vama
- Povežite podatke sa podacima drugih provajdera kako biste pružili kontekst



PODACI: Srbija

■ **JAVNI PODACI U SRBIJI**

- Republički zavod za statistiku*
- Agencija za privredne registre*
- Uprava za javne nabavke
- Sudovi Srbije: Predmeti
- Zavod za intelektualnu svojinu
- Hidrometeorološki zavod
- itd.



PODACI: Kako do 5 zvezdica?

- **REPUBLIČKI ZAVOD ZA STATISTIKU**
 - Podaci objavljeni na mesečnom nivou
 - Veći deo u PDF formatu
 - Sirovi podaci sa kratkoročnim i dugoročnim indikatorima dostupni kroz centralnu diseminacionu bazu
 - Kako povezivati i kombinovati skupove podataka sa nestatističkim skupovima, i podići nivo transparentnosti?



RZS: Statistički podaci kao Linked Open Data

- **STATISTIČKI PODACI KAO LOD**
 - Pojedinačne opservacije, kao i grupe opservacija, dobijaju svoje web adrese, što omogućava povezivanje i anotiranje od strane trećih lica
 - Struktura ne utiče na interpretaciju podataka, za razliku od tabelarnog prikaza
 - Moguće je izmeniti kontekst skupa podataka dodavanjem eksternih podataka ili integracijom sa drugim skupovima
 - Skupovima je moguće manipulirati na nove načine
 - Fleksibilan, nekomercijalan i mašinski čitljiv način za publikovanje koji podržava gotov web *API* za programski pristup podacima



Linked Data: Prednosti

- Obogaćeni skupovi podataka
- Jasna semantika podataka – i za podatke koji nisu iz statističkog domena
- Lakše dobavljanja dodatnih informacija o podacima
- Veća količina dostupnih podataka u ciljnom formatu (Linked Data)
- Lakša integracija sa eksternim izvorima podataka
- Mogućnost vršenja detaljnih analiza putem naprednih upita
- Podignuta vidljivost na globalnom nivou
- Napredniji pristup pružanju B2B i B2C servisa

Hvala vam na pažnji!

Thanks for your attention!