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# Opening up science, knowledge and getting paid to develop FLOSS

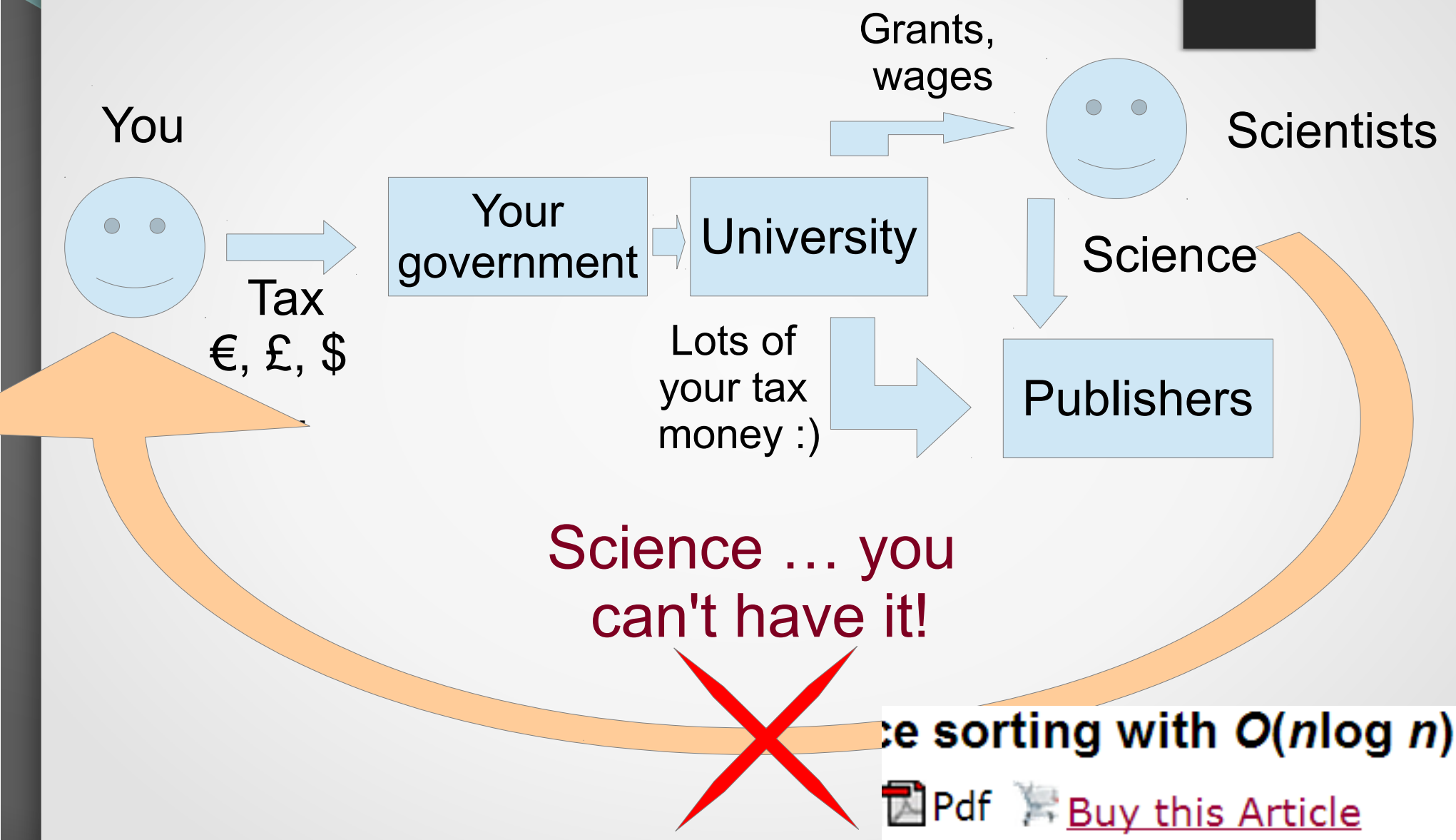
# Exciting stuff!

| **Open Knowledge** | **Partnership of developers** |
| --- | --- |
| Science | Interested in education |
| FOOD! | Everything open |
| Medicine | |
| Government | Build FLOSS together |
| --- | --- |
| Civilisation | Need to eat though. How? |

# Current Science workflow

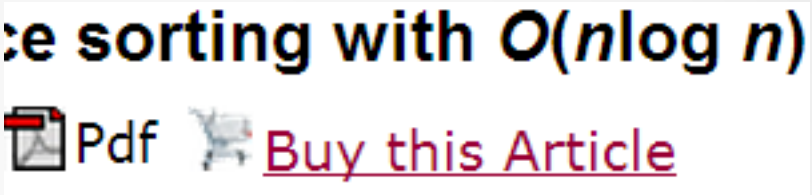
1. YOU Pay tax
2. University library pays 6-7 digit figures to get previous science
3. Scientist uses past science, gets money to do more
4. Scientists writes up results in paper, sends to other scientists to review
5. Publisher does NOT pay reviewers
6. Publisher doesn't give YOU access to science, demands more $ from libraries

# Current Science workflow – visualised



# Results from current Science

- You paid for it, twice.
- You can't get it.




- Individual article prices can be astronomical (you need to read many to get useful ideas) – avg. €15-30

- Publishers have an established monopoly
- People stuck in closed mindset or don't care
- Fear,  Uncertainty, Doubt
- Some “adopt” open ways but actually twist them
- Sound familiar?

# Open Knowledge & Open Data

- This is not good. Developing countries, individuals, business – can't afford the Paywall, no science for you!

**Open Knowledge Foundation**

*(main principles of what's “open”)*

1. Free and open access to the material
2. Freedom to redistribute the material
3. Freedom to reuse the material
4. No restriction of the above based on who someone is (e.g. their nationality) or their field of endeavour (e.g. commercial or non-commercial)

# Open Knowledge, not just Science

## Open Government & Economics

PublicWhip, WhereDoesMyMoneyGo, OpenSpending

Official UK Open Government Data: Data.gov.uk

& the data sharing piece of FLOSS, CKAN

You can have anything:

- Open Nutrition data,
- Open Medicine
- Open Lobbying data (hot topic in EU atm)

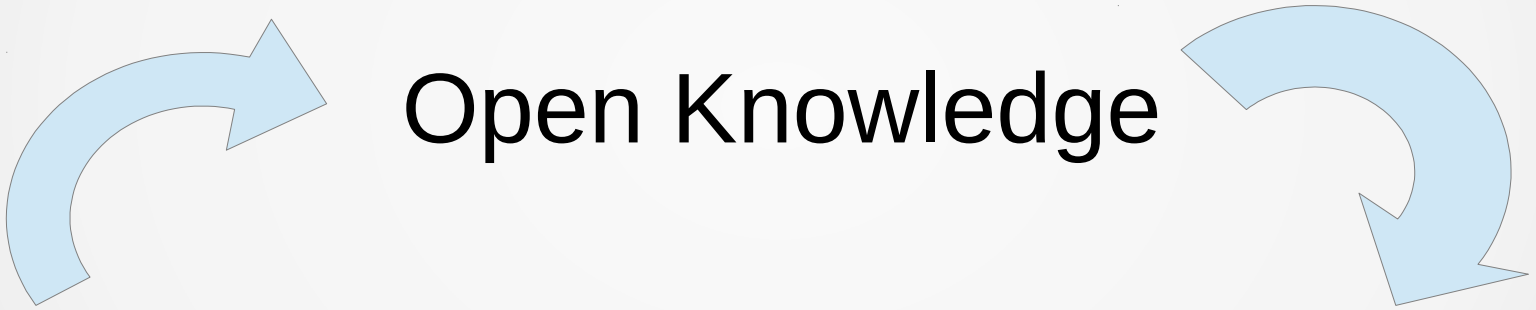
# Why care about Open Knowledge?

We build FLOSS, right?

Why?

Open Knowledge can be the heart of a lot more FLOSS. Visualising data & communicating can really help improve life, push for progress, and FLOSS is the way to go.

# Open data breeds more FLOSS!



# So how does this help us devs?

Enlarging the Open movement good - more opportunity:

- apply programming skills
- and Open development practices
- get paid (when enough people want Open)

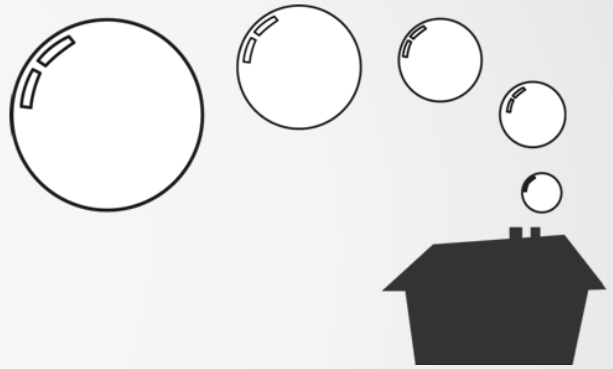
So, what ***can*** you do in this area?

# Things devs do Open for a living

- Visualising data (interactive maps, Javascript visualisations)
- Creating new Open tools (OKFN employs 10+ devs)
- Creating new Open services to expose Open data (web services, API-s) (devs were needed to code each of these!)
- Quite a lot of integration work – ReSTful services nowadays but also often interact with older systems or slightly unconventional databases like Research Data Repositories
- Reports – report on potential FLOSS uses to organisations which hire you (examples of reports we've done)
- Consulting work - purely because of Open-source software dev. Experience and because of work in the relevant field.

# Actually, you can do this

Cottage Labs LLP (Limited Liability Partnership)



- Close-knit group of freelancers
- Look for work together, bid together.
- Share profits.
- We can take on more projects even if an individual runs out of time – other people could start developing the opportunity.
- Based on Community of Practice and Learning Community concepts (we do, learn, *think* together)

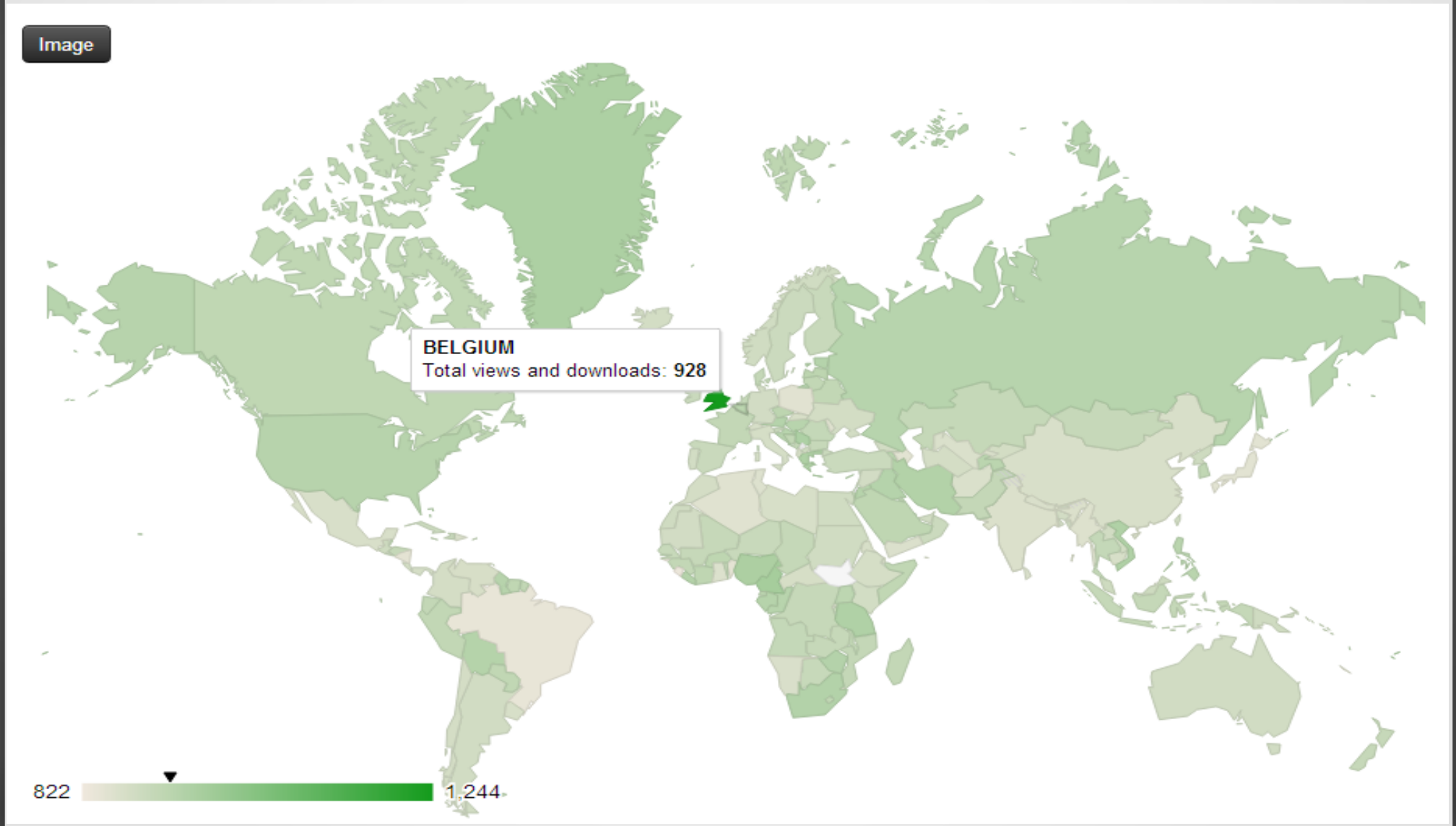
# But who would want to hire us?

- Partners have (shared!) decades of experience in the Higher Education software development sector
- UK Gov't hires us quite often to help out with Research infrastructure for that experience & because we're not shy about open-sourcing all our work
- We don't sell products, we trade our skills & release the results of the work openly.
- Universities hire us, companies have started hiring us (we do high-speed quality catalogue-style systems, visualisations, web services & other things quite well)
- Been at it for 2+ years!

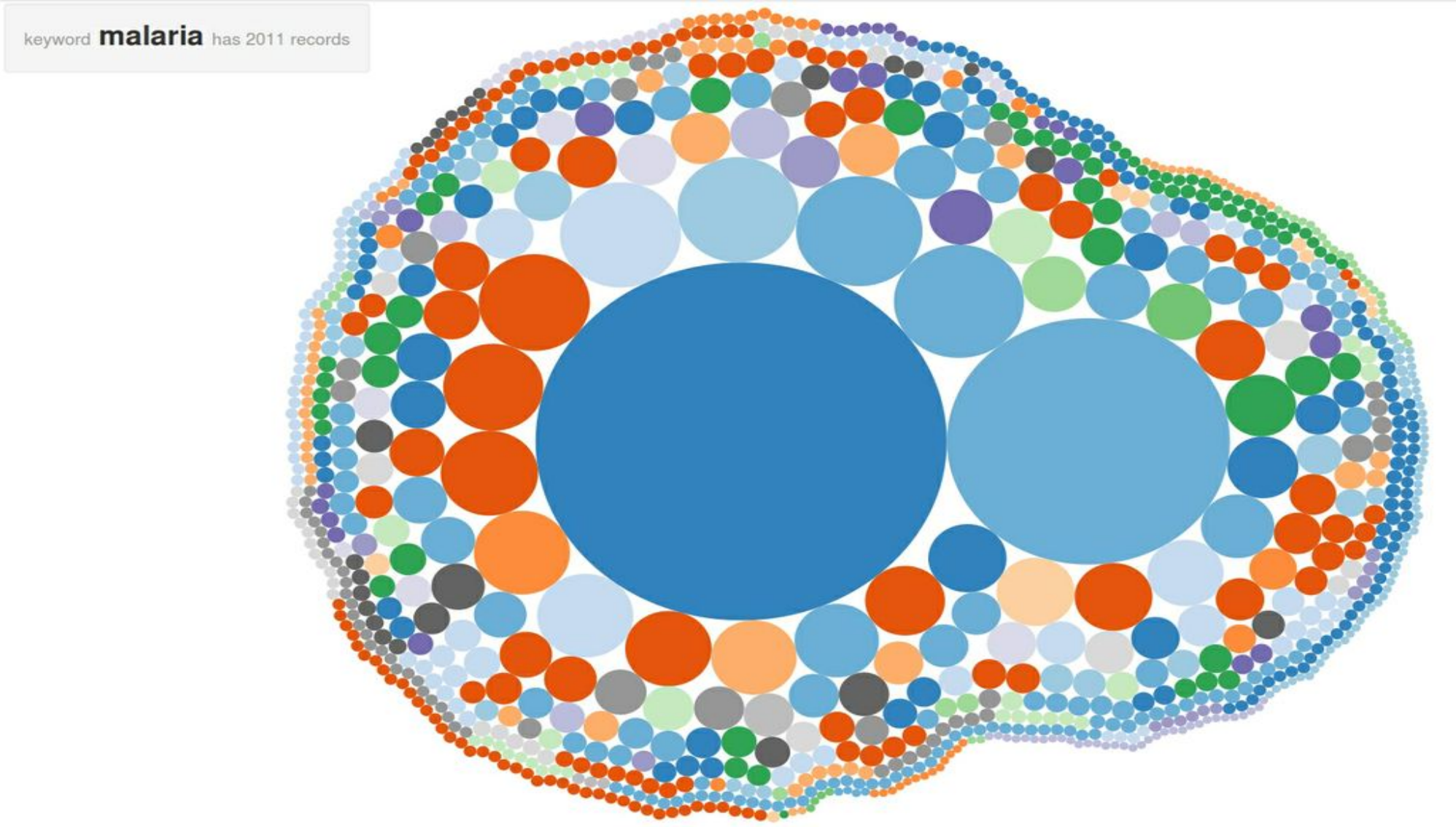
# Tech we use

- Elasticsearch, an advanced search server
  - eats JSON, spews out JSON
  - very, very fast search and faceting (faceting example)
- Python (+ the Flask web framework, often)
- D3 Javascript data visualisation library
- Facetview (pure Javascript front-end to Elasticsearch and Apache Solr – basically build a fully-fledged, paginated catalogue in minutes just by writing 1x HTML page)
- DSpace – repository software. Think of as a special database geared for storing and describing individual files (resources).

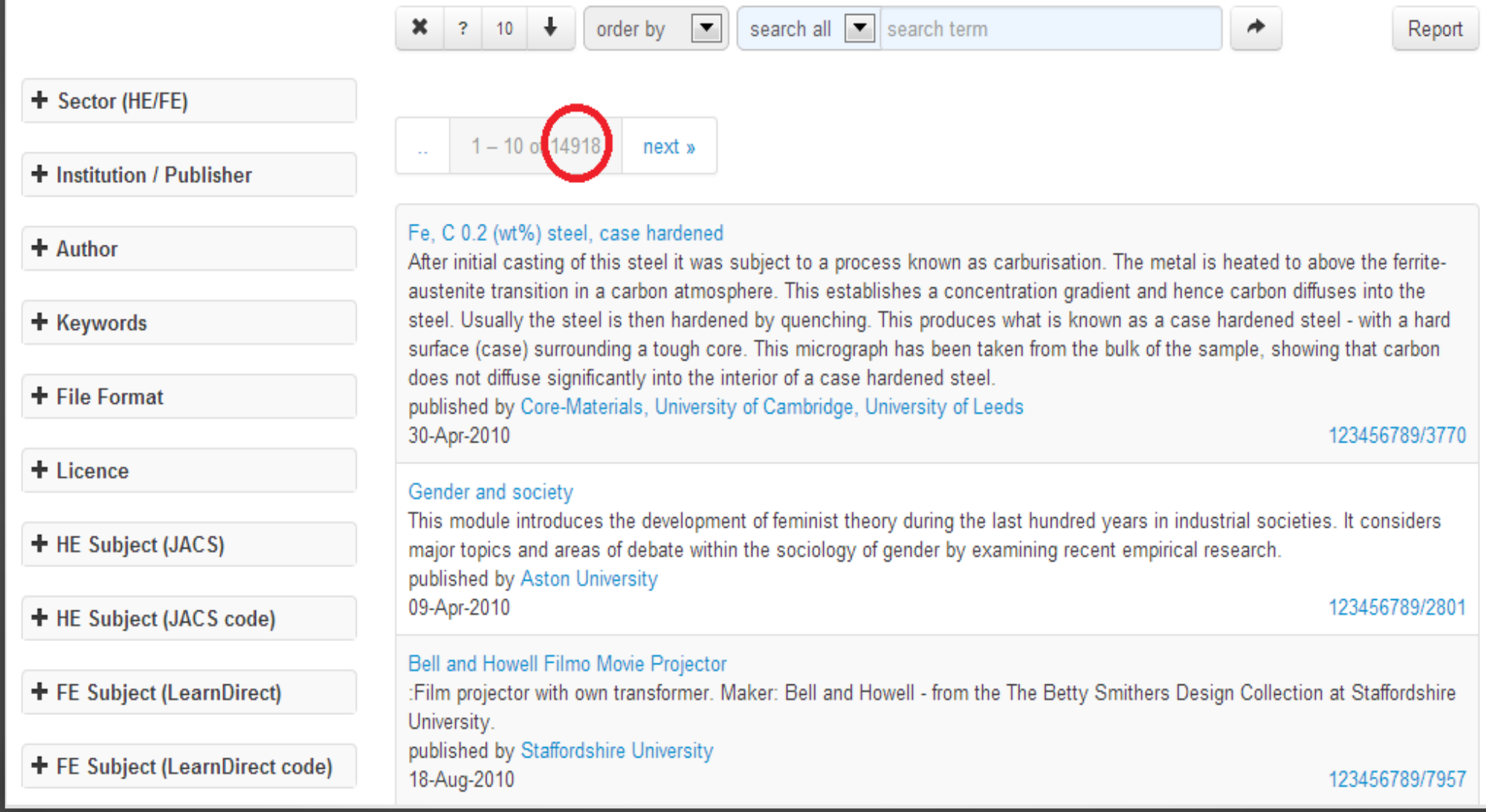
# Visualisation example (1)



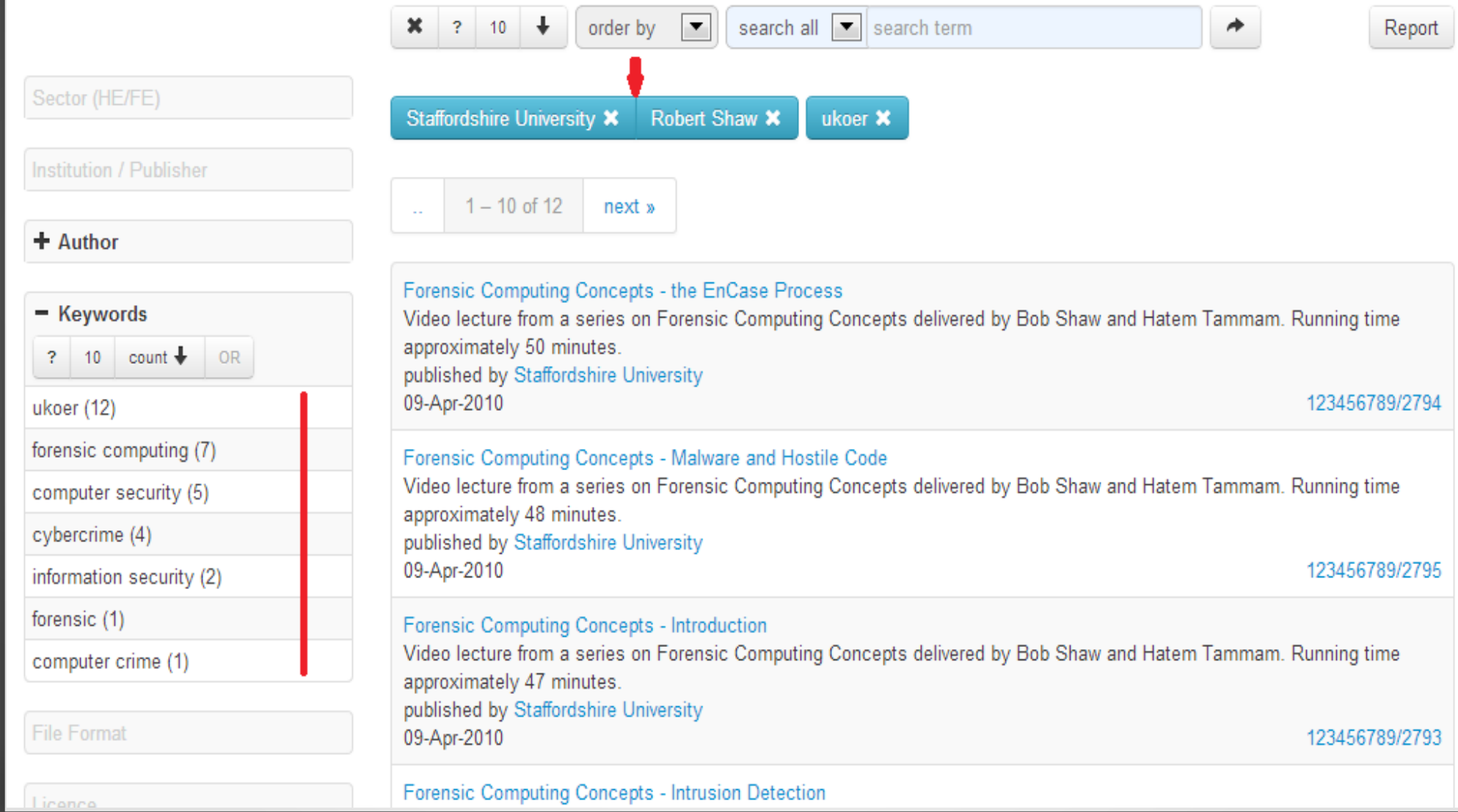
# Visualisation example (2)



# Faceted search example (part 1)



# Faceted search example (part 2)



# We're all good

Think about what you can do.

We're developers. We have lots of experience developing software and also domain knowledge.

You **can do this** in **your** professional area, in **your** country, with **your** friends.

# Collaborating

- If you're interested by what you just heard about our partnership
- Want to start a similar thing
- Want to work with us on something
- Talk to me after this presentation! Or come here.

# A bit of inspiration

*Mobile + web applications which people made to help their city/country/the EU and demonstrate the potential of Open Data:*

http://publicdata.eu/app

http://opendatachallenge.org/#winners

- Real-time underground train traffic map
- Bike share map
- Carbon Dioxide emissions map
- Connections between commercial companies
- Business influencing politics – state deals
- (Useful) list of all public financial transactions EVERYWHERE
- Air cleanliness & particles map

# Disruption

Free Software – disruptive.

However, Disruptive -> Innovative!

But also:

- Useful
- Nice
- Respects users
- Respects their Freedom

# Disruption (2)

Science is very important. Public data is very important.

Both have some problems, but Free Software and Openness can help!

Disrupting these “knowledge” sectors with Open approaches will help spread the Openness philosophy.

# Questions?

Thanks for listening!

Good luck!

# FAQ 1

How do you licence your stuff?

(exactly..?)

*Any Open Licence the client agrees to.*

We personally like Copyheart :). Love isn't subject to law and we love our work. We've done MIT too.

- GPL: we could use it, but we don't push it, don't mind commercial companies using our software. Just means it's actually useful... Also, our sector is quite small software-wise.