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# #DontLeaveItToGoogle

How open infrastructures enable continuous innovation in the research workflow

**Peter Kraker**

Co-created with Maxi Schramm

Open Science Conference 2019



The 2014-2016 **Ebola epidemic** in West Africa claimed more than 11,000 lives

**It could have been prevented** using public knowledge

Opinion

OP-ED CONTRIBUTORS

# Yes, We Were Warned About Ebola

By Bernice Dahn, Vera Mussah and Cameron Nutt

April 7, 2015

“The results seem to indicate that Liberia has to be included in the Ebola virus endemic zone.”

Knobloch et al. **1982**

There is an adage in public health: **“The road to inaction is paved with research papers.”**

**Uncitedness (publications):**

**12% - 82%** (Larivière & Gingras 2009)

**Uncitedness (data):**

**85%** (Peters et al. 2016)

**Transfer to practice (medicine):**

**14%, taking 17 years** (Balas 1998)

# **Dark Knowledge**

(Jeschke et al.)

Scholar

About 2,450,000 results (0.05 sec)

Articles

Legal documents

Any time

Since 2012

Since 2011

Since 2008

Custom range...

Sort by relevance

Sort by date

- include patents  
 include citations

 Create alert

[CITATION] Time for Results: Task Force on Leadership and Management  
, ... . Task Force on **Educational Technology**... - 1986 - National Governors' Association ...  
Cited by 385 Related articles Cite

[Thinking \*\*Technology\*\*: Toward a Constructivist Design Model.](#)

DH Jonassen - **Educational technology**, 1994 - ERIC

Abstract: Discussion of constructivism and instructional design focuses on the development of a design model for constructivist environments that supports the construction of knowledge, a meaningful context for learning, and collaboration among learners and with ...  
Cited by 918 Related articles BL Direct Cite More ▾

[Conditions That Facilitate the Implementation of \*\*Educational Technology\*\* Innovations.](#)

DP Ely - **Educational Technology**, 1999 - ERIC

Abstract: Describes eight conditions that facilitate implementation of the **technology**-based change process: dissatisfaction with the status quo, existence of knowledge and skills, availability of resources, availability of time, existence of rewards or incentives, ...  
Cited by 211 Related articles BL Direct Cite More ▾

[BOOK] [Integrating \*\*educational technology\*\* into teaching](#)

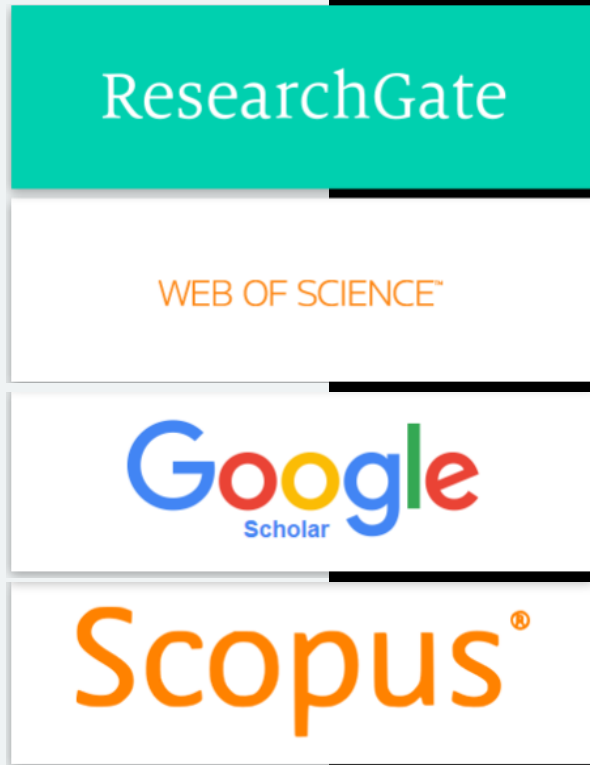
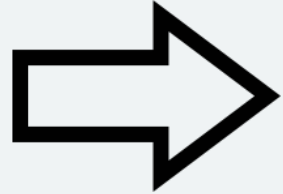
MD Roblyer, J Edwards, MA Havriluk - 2006 - lavoisier.fr

... Imprimer la notice. Integrating **educational technology** into teaching (4th ed ). Auteur : ROBLYER Margaret. Prix indicatif 89,72 €. Disponible chez l'éditeur (délai d'approvisionnement : 10 jours). ...  
Paperback. Sommaire d'Integrating **educational technology** into teaching (4th ed ) : ...  
Cited by 1314 Related articles All 14 versions Cite More ▾

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1 2 3 4 5 6 7 8 9 10

[Weiter](#)



**WALLOF  
DARK  
KNOW  
LEDGE**

## SEARCH

# Making it easier to discover datasets

**Natasha Noy**

Research Scientist, Google  
AI

Published Sep 5, 2018

In today's world, scientists in many disciplines and a growing number of journalists live and breathe data. There are many thousands of data repositories on the web, providing access to millions of datasets; and local and national governments around the world publish their data as well. To enable easy access to this data, we launched [Dataset Search](#), so that scientists, data journalists, data geeks, or anyone else can [find the data](#) required for their work and their stories, or simply to satisfy their intellectual curiosity.

Similar to how [Google Scholar](#) works, Dataset Search lets you find datasets wherever they're hosted, whether it's a publisher's site, a digital library, or an author's personal web page. To create Dataset search, we developed [guidelines for dataset providers](#) to describe their data in a way that Google (and other search engines) can





**Peter Kraker** @PeterKraker · 10 Sep 2018



So, @Google is building a search engine for research data.

Yet another proprietary index on top of our data that nobody can reuse & another inferior list-based interface pushed onto scientists by Google's market dominance.

This is detrimental to science! #DontLeaveltToGoogle

**#DontLeaveltToGoogle**



13



157

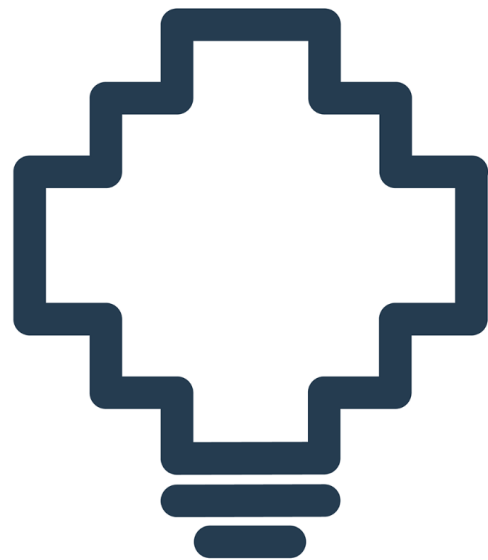


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Identify relevant concepts

irrelevant



# OPEN KNOWLEDGE MAPS

LWL, KNN,  
K-nearest neighbour

Document Term Matrix,  
Support Vector Machine,  
Feature Extraction

Text Mining,  
Classification,  
Social Networking Sites

Text Documents,  
Text Mining,  
Affinity Propagation

CSI, Distributed  
Data mining, Privacy  
preserving data mining

Frequent patterns,  
Meta data conceptual  
mining

K-means,  
J48, Hotspot

Cooperation,  
Figure,  
Networks

Loan Default,  
Time series,  
Tax administration

Web Structural Mining  
(WSM), Data mining,  
Hyperlink

@OK\_Maps



# Who we are



**Charitable Nonprofit**  
**Revolutionize Discovery**  
**For Science And Society**

# Overview of heart diseases





# Map a research topic beta

Get an overview - Find papers - Identify relevant concepts

**PubMed** (life sciences)

**BASE** (all disciplines)

[Refine your search](#) ▾

Enter your search term

**GO**

Try out: [sugar](#) [digital education](#)

[What is Open Knowledge Maps?](#)



Based on  
**100+ million**  
documents

<https://openknowledgemaps.org>

# Advantages



# Open science, all the way



open content



open data



open source



open roadmap

# Largest visual search engine for research

First 2.5 years:  
**½ million** visits on the site  
**100,000+** maps created  
**1000+** participants in workshops





# Core Team



**Peter Kraker**  
Founder & Chairman



**Maxi Schramm**  
UX Designer & Treasurer



**Christopher Kittel**  
Data Scientist & Secretary



**Asura Enkhbayar**  
Software Architect



**Scott Chamberlain**  
Data Sources



**Rainer Bachleitner**  
Frontend Developer



**Fabian Kraut**  
Marketing



**Najmeh Shaghaei**  
Community Coordinator



**Björn Brembs**  
Requirements & Evaluation



**Thomas Arrow**  
Frontend Developer



**Know Center**  
Organizational member



Ludwig Boltzmann Gesellschaft

**Ludwig Boltzmann Gesellschaft**  
Supporting member

# Advisors



**Peter  
Murray-Rust**



**Stefanie  
Lindstaedt**



**Natalia  
Manola**



**Klaus  
Tochtermann**



**Bertil F.  
Dorch**



**Katja Mayer**



**Falk  
Reckling**



**Claudia  
Garád**



**Birgit  
Schmidt**



**Daniel  
Mietchen**



**Isabella  
Peters**



**Michael E.  
Karpeles**



**Elisabeth  
Lex**



**Osman  
Aldirdiri**



**Lambert  
Heller**



**Michela  
Vignoli**



**Christian  
Schlögl**



**Stefan  
Kasberger**



**Stefanie  
Haustein**



**Andreas  
Ferus**



**Tony Ross-  
Hellauer**



**Christine  
Zhang**



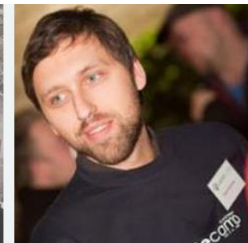
**Sebastian  
Dennerlein**



**Antica  
Culina**



**Florian Heigl**



**Robert  
Gutounig**



**Daniel  
Dörler**



**Christian  
Kaier**

# Enthusiasts



**Girija Goyal**

Co-founder  
ReFigure.org



**Ricardo Hartley Belmar**

Academic  
Universidad Central de Chile



**Amie Fairs**

PhD candidate  
Max Planck Institute for Psycholinguistics



**Jeremiah Pietersen**

Digital Scholarship Specialist  
University of Cape Town Libraries



**Mari Plaza**

Data Scientist



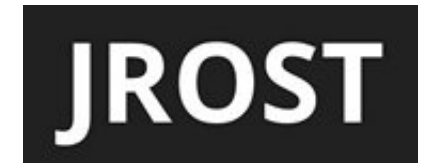
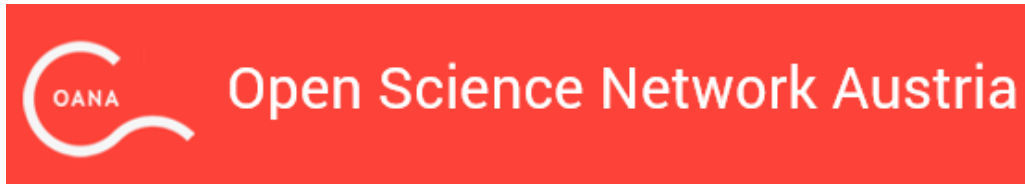
**Benedikt Fecher**

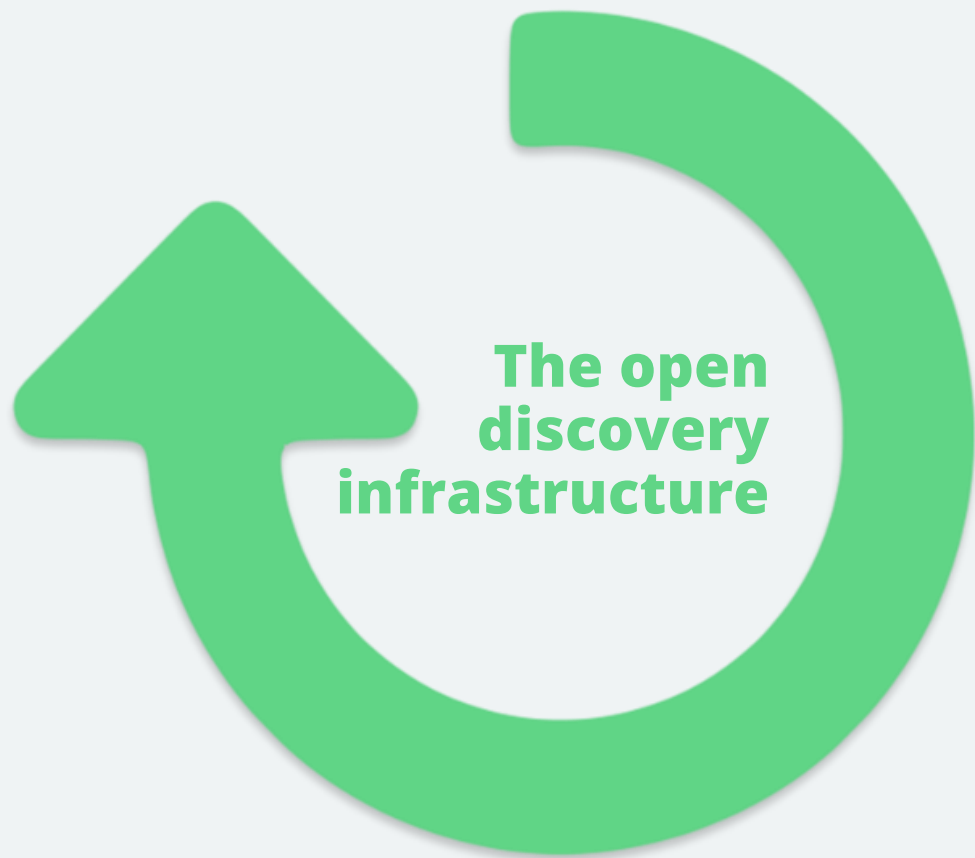
Program Director  
Humboldt-Institut for Internet and Society

# Partners



# Networks





**The open  
discovery  
infrastructure**

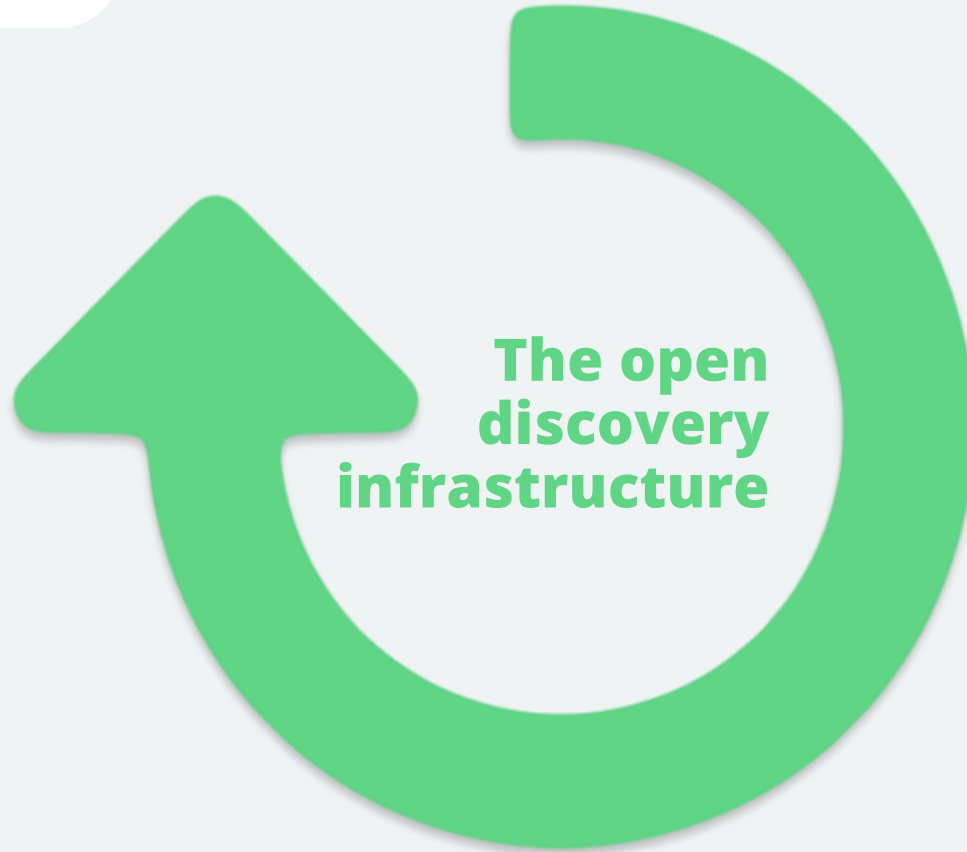
# A cycle of continuous innovation



Institutions, Researchers,  
Publishers



Libraries,  
Archives,  
Repositories,  
Aggregators



The open  
discovery  
infrastructure

Meta aggregators



Value added  
services





# DISCOVERY



OPEN  
KNOWLEDGE MAPS





Four principles of...



...the information system supporting research



# Black hole of dark knowledge

WIKIPEDIA

Crossref

GitHub

SYMPLECTIC

PubMed

Altmetric

**Control  
User Data  
Governance  
Innovation**

arXiv.org

ORCID

Summon 2.0

SCHOLIX

OpenAIRE

Bookmetrix



ELSEVIER

**A:** 0.5% of RELX's CEO's yearly salary

**B:** Google's revenue from advertising, every 25 milliseconds

**C:** Est. revenue of Nature Communications every two days

= €95,000?

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**B:** Google's revenue from advertising, every 25 milliseconds

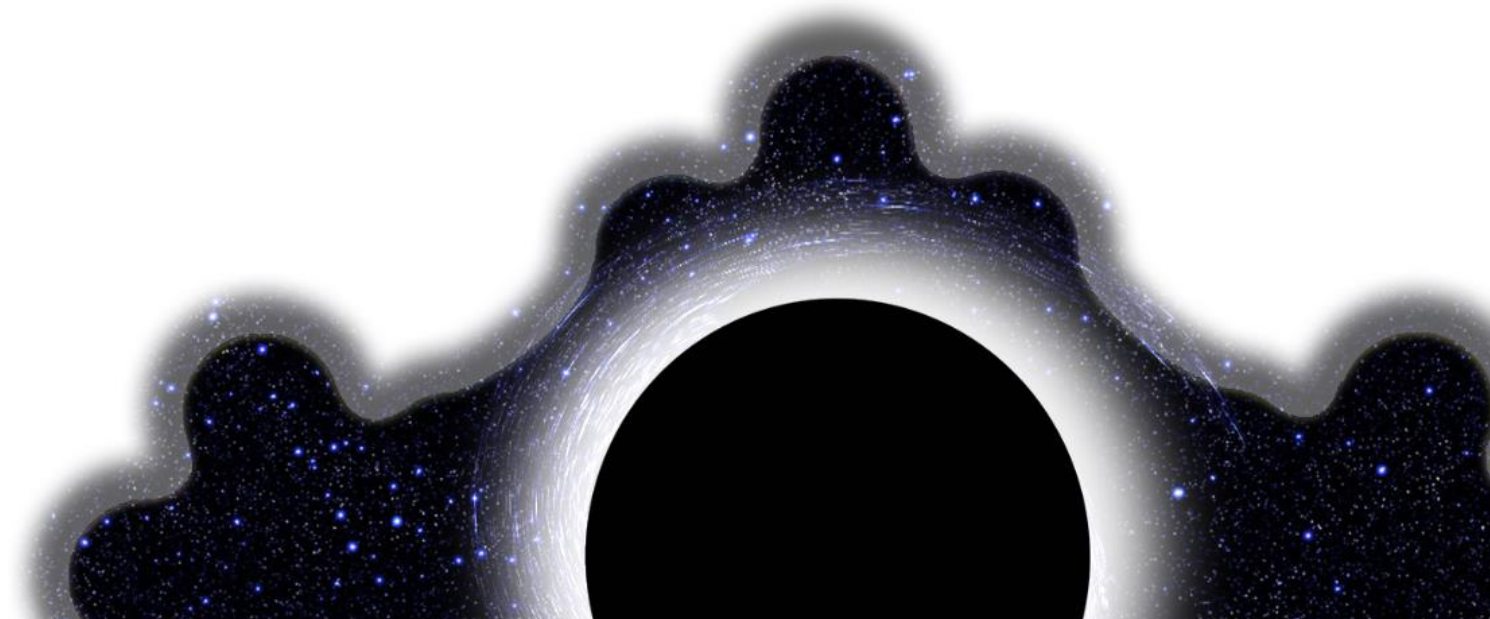
**C:** Est. revenue of Nature Communications every two days

**= €95,000!**

**D:** The total budget of Open Knowledge Maps, including collaboration projects ... in the past 2.5 years

# **No funding for user interfaces =**

- = no control over algorithms
- = all (user) data in the hands of for-profits
- = no governance over our services
- = no innovation



**Let's make the open infrastructure sustainable!**

**DontLeaveItToGoogle**

**DontLeaveItToSpringerNature**

**DontLeaveItToElsevier**

# Membership-based Funding

**We propose to fund Open Knowledge Maps in a collective effort:** organizations become supporting members and provide a yearly contribution

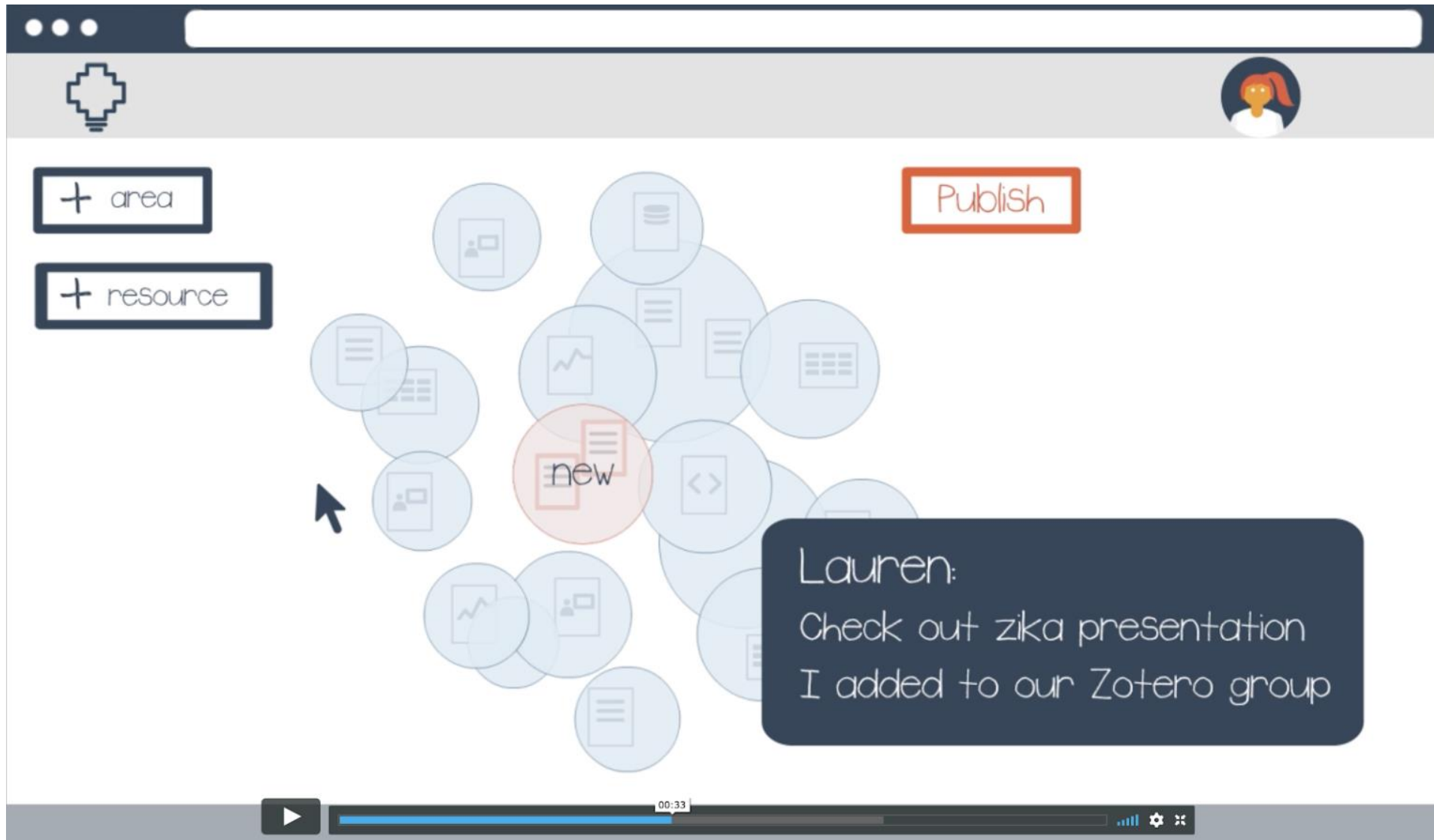
**This is not a one-way street:** we invite our members to co-create the platform with us. More info:

<https://openknowledgemaps.org/supporting-membership>

Category	Membership Fee
Supporting members	EUR 2,800/year
Sustaining members	EUR 4,800/year (or more)
Sustaining members – higher support	EUR 9,800/year (or more)



# Our vision



<https://vimeo.com/188647919>



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# Thank you for your attention!

Contact:

[twitter.com/PeterKraker](https://twitter.com/PeterKraker)

[pkraker@openknowledgemaps.org](mailto:pkraker@openknowledgemaps.org)

