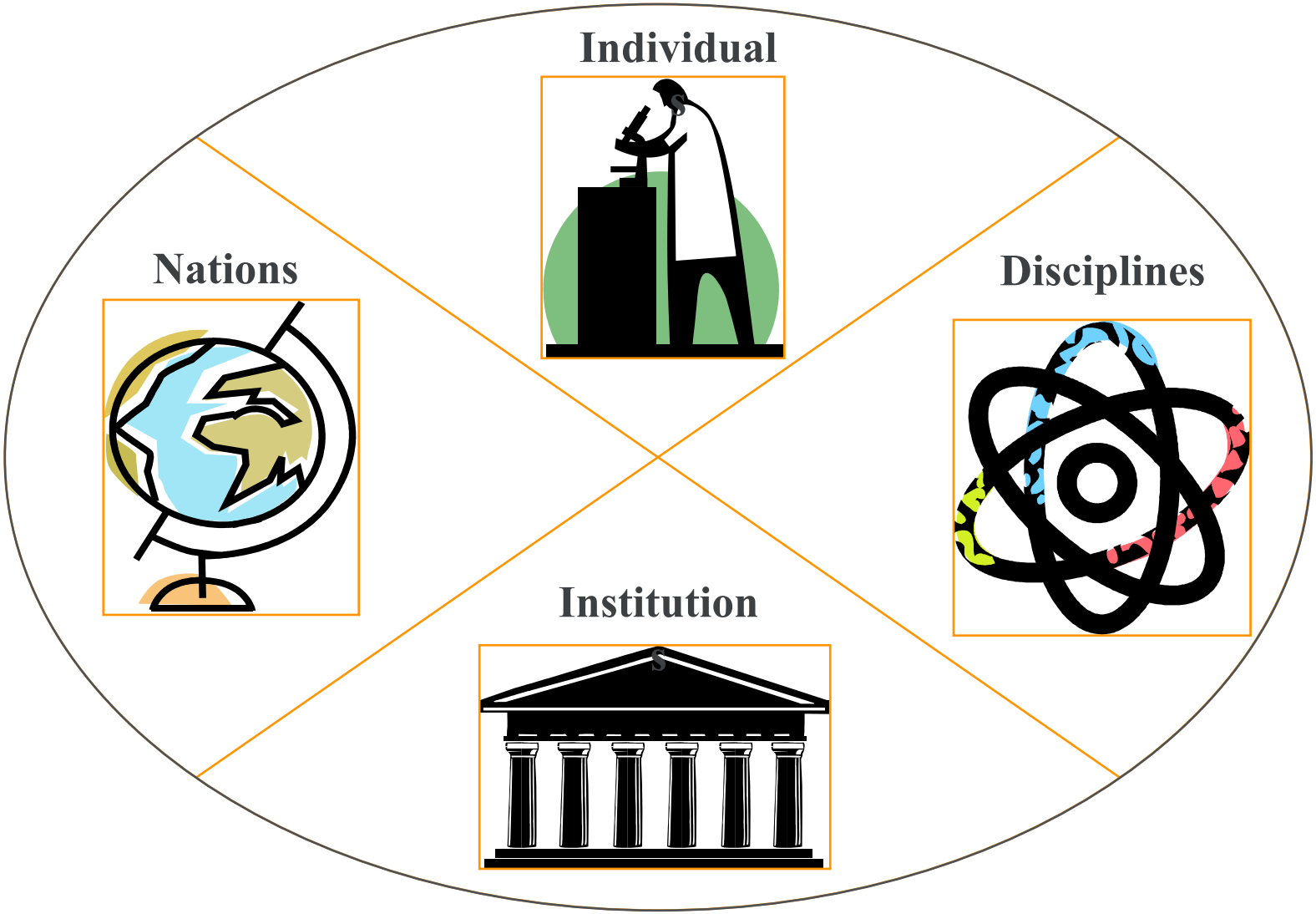
Driving innovation in the right direction: critical role of analytical and information systems in innovation management

Endre Beky, Regional Director for EU and Russian Federation

Enformation Conference, Timisoara, Romania

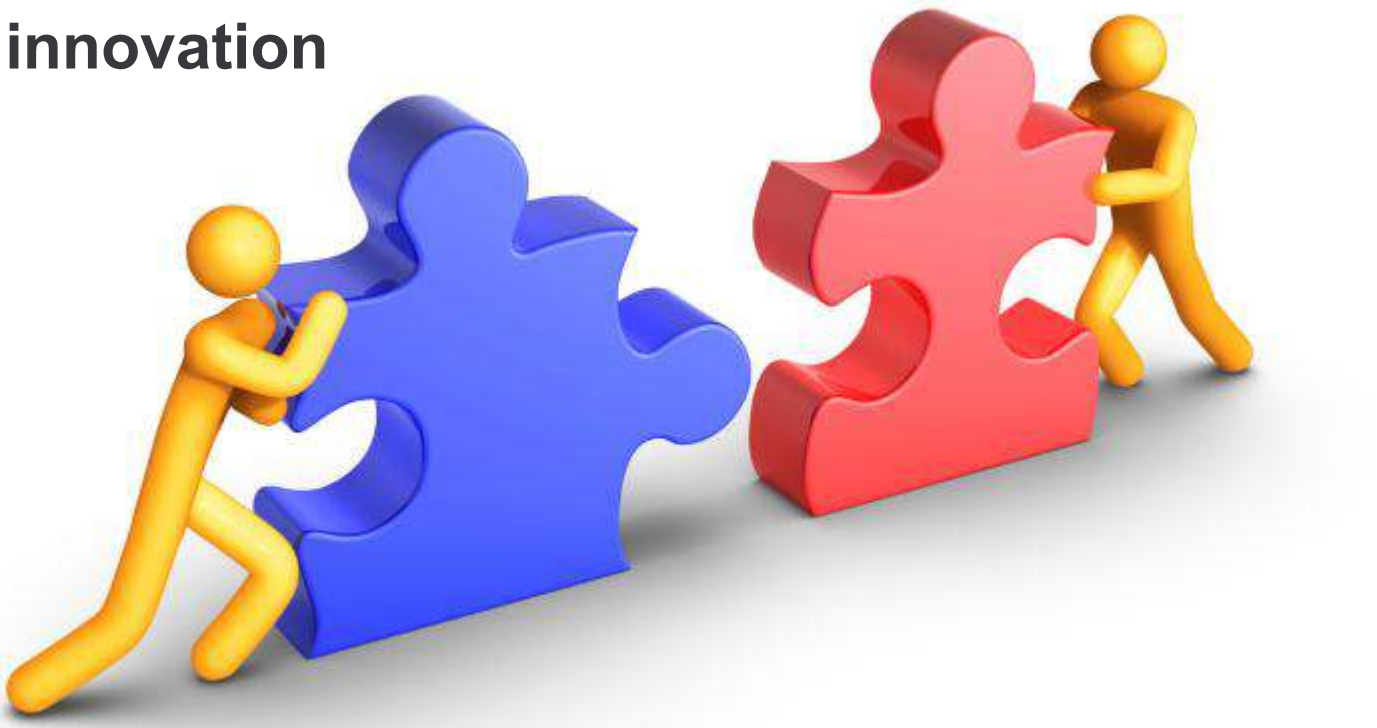
October 29th, 2015

Dissolving boundaries in research

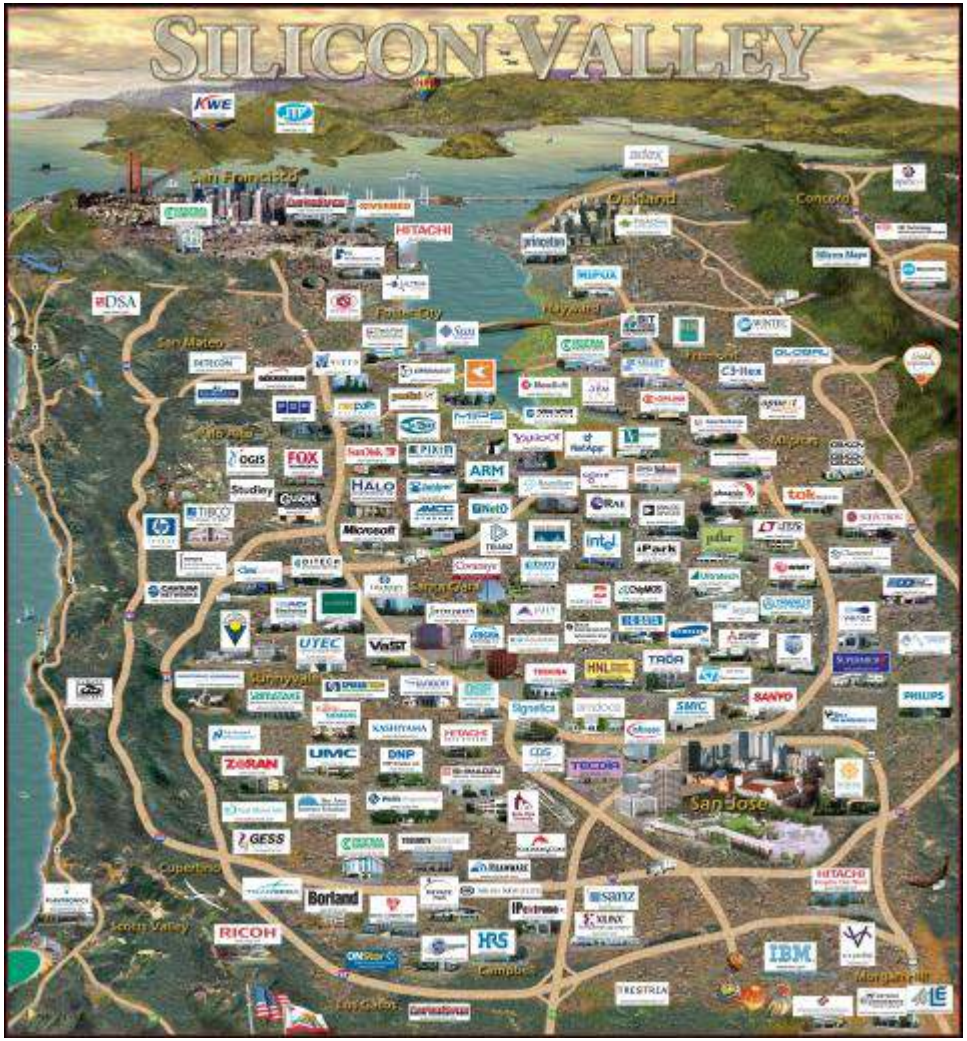


Outcomes of cross-sector collaboration

1. Business success
2. Social good
3. Civic innovation



Outcome #1: Business success



Sources: Cloudfront.net, Techfluff.tv

From article to enterprise

Google

Sources: PicPicX, Wikimedia Commons

Contents lists available at SciVerse ScienceDirect

Computer Networks

journal homepage: www.elsevier.com/locate/comnet

Reprint of: The anatomy of a large-scale hypertextual web search engine

Sergey Brin, Lawrence Page

Computer Science Department, Stanford University, Stanford, CA 94305, USA

ARTICLE INFO

Article history:
Available online 23 October 2012

Keywords:
World Wide Web
Search engines
Information retrieval
Pagerank
Google

ABSTRACT

In this paper, we present Google, a prototype of a large-scale search engine which makes heavy use of the structure present in hypertext. Google is designed to crawl and index the Web efficiently and produce much more satisfying search results than existing systems. The prototype with a full text and hyperlink database of at least 24 million pages is available at http://google.stanford.edu/

To engineer a search engine is a challenging task. Search engines index tens to hundreds of millions of web pages involving a comparable number of distinct terms. They answer tens of millions of queries every day. Despite the importance of large-scale search engines on the web, very little academic research has been done on them. Furthermore, due to rapid advance in technology and web proliferation, creating a web search engine today is very different from 3 years ago. This paper provides an in-depth description of our large-scale web search engine – the first such detailed public description we know of to date.

Apart from the problems of scaling traditional search techniques to data of this magnitude, there are new technical challenges involved with using the additional information present in hypertext to produce better search results. This paper addresses this question of how to build a practical large-scale system which can exploit the additional information present in hypertext. Also we look at the problem of how to effectively deal with uncontrolled hypertext collections, where anyone can publish anything they want.

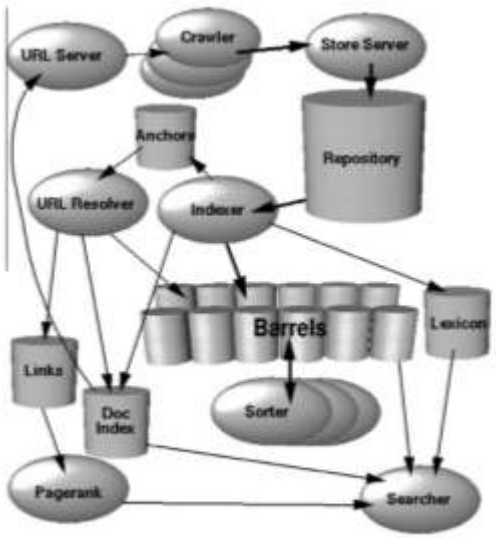
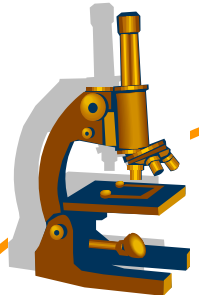


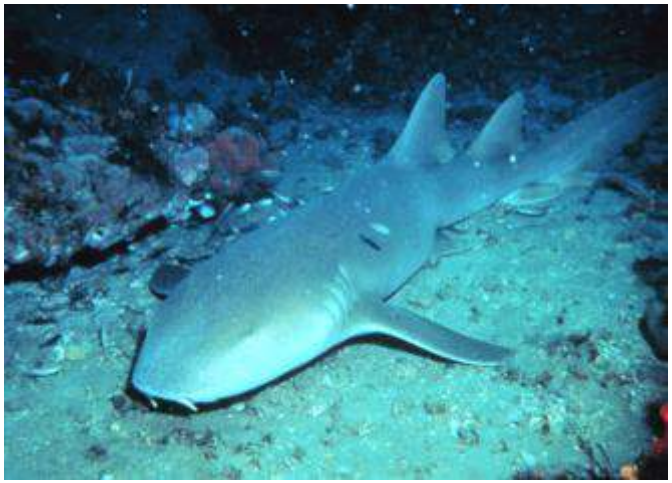
Fig. 1. High level Google architecture.

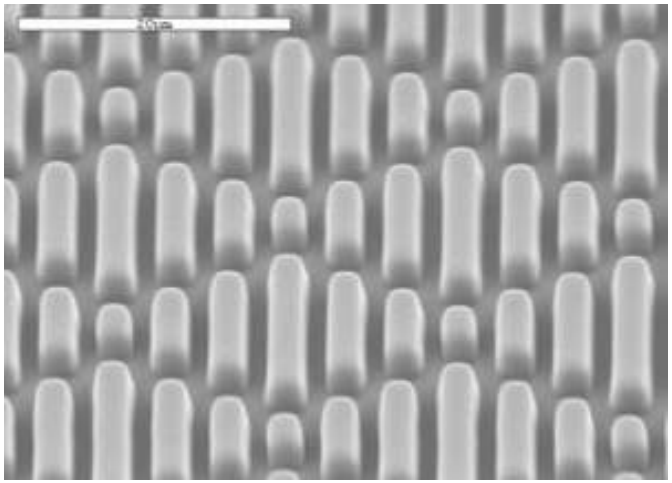
Fig. 2. Sample results from Google.

Outcome #2: Social good



Sharklet Technologies



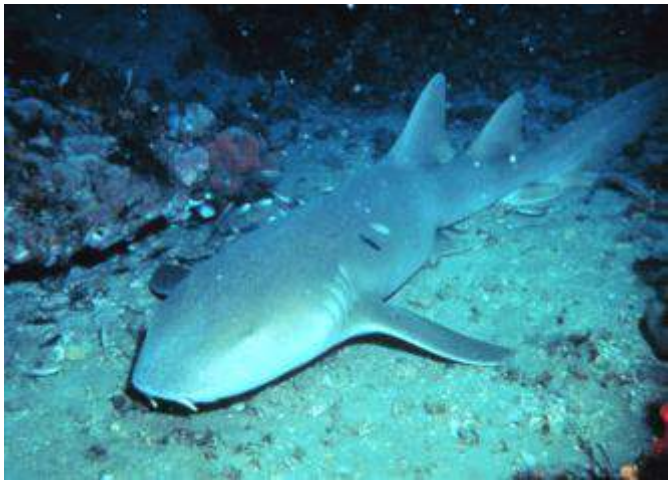


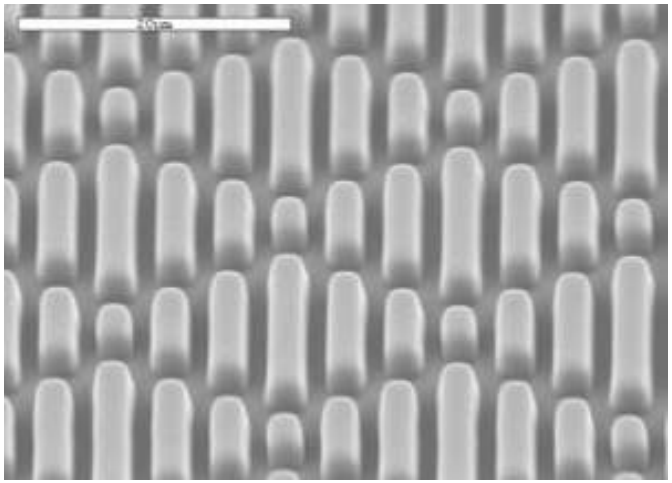
Sharklet™ Technologies, Inc.

Office of Naval Research ONR Science & Technology

Sources: Currie Communications, University of Florida, United States Department of the Navy, Wikipedia

Sharklet Technologies





Sharklet™
Technologies, Inc.

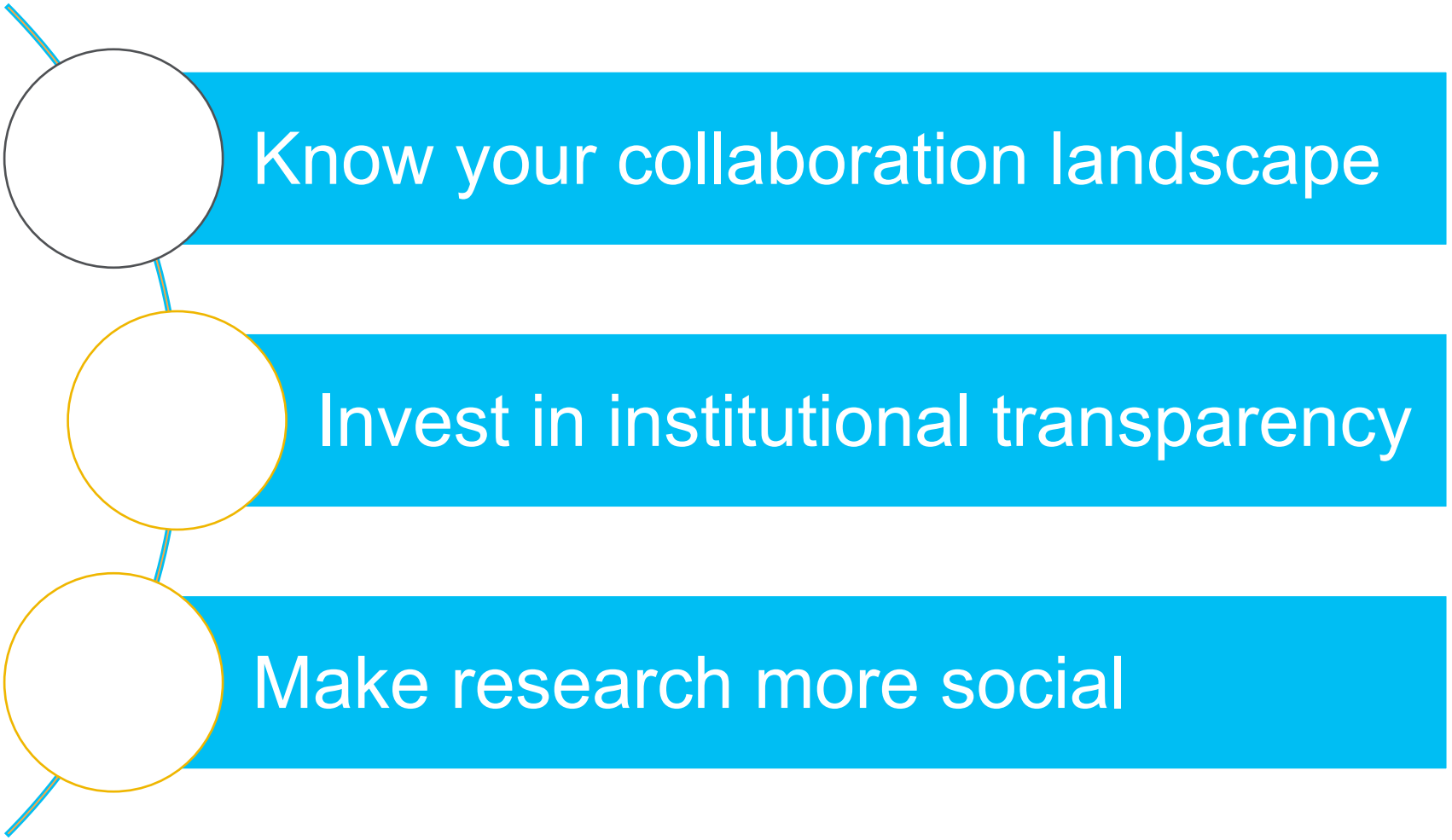
Sources: InnovatioNews, Coursey Enterprises, ForCivilMinds.org

Outcome #3: Civic innovation

Source: Wikipedia, Urban Innovation Network

***Mapping Research and Innovation: Understanding Amsterdam's Competitive Advantage*; a collaborative report from Elsevier, UIN, and the City of Amsterdam**

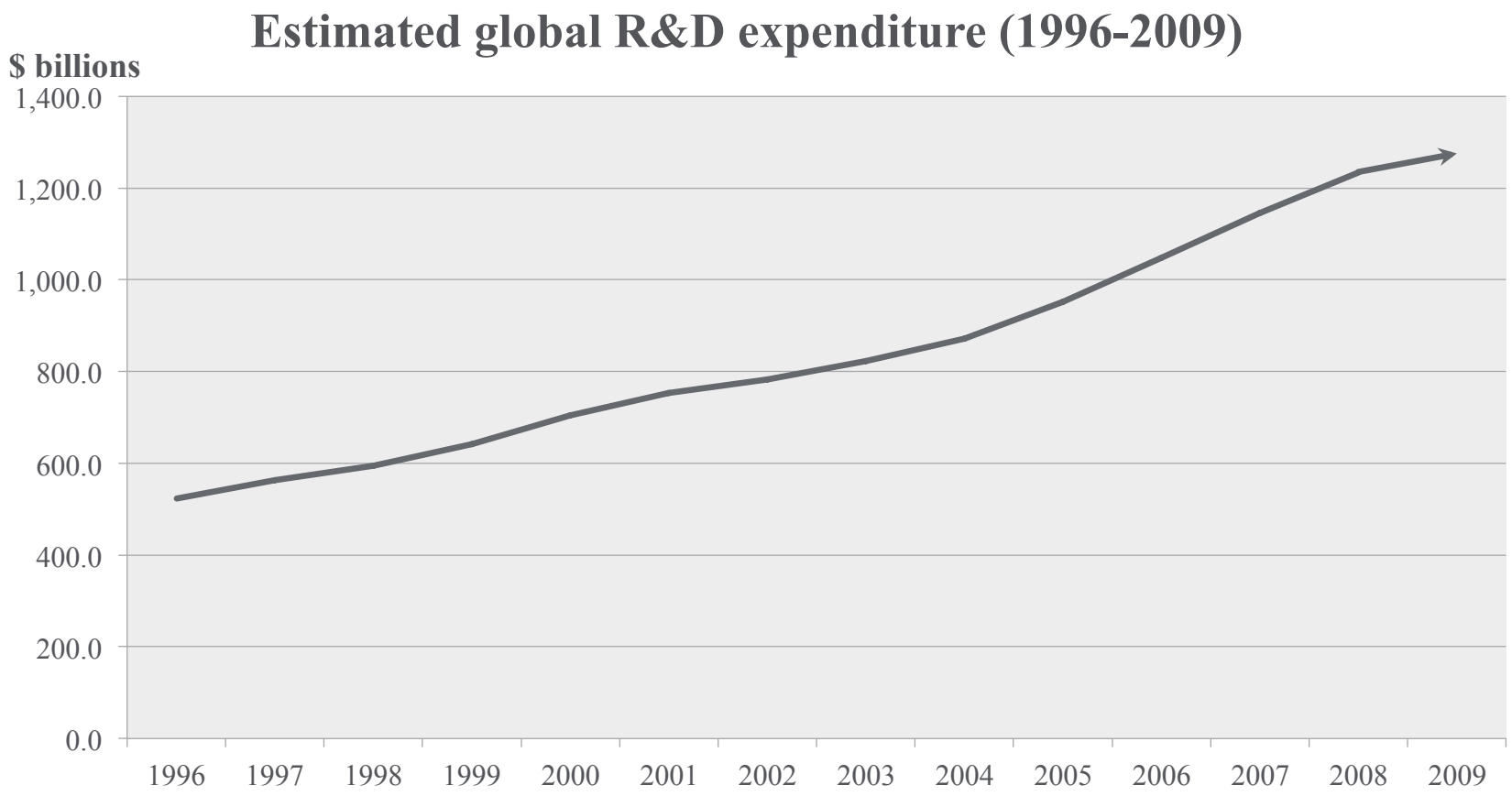
Strategies for collaboration



Strategies for collaboration

- Know your collaboration landscape
- Invest in institutional transparency
- Make research more social

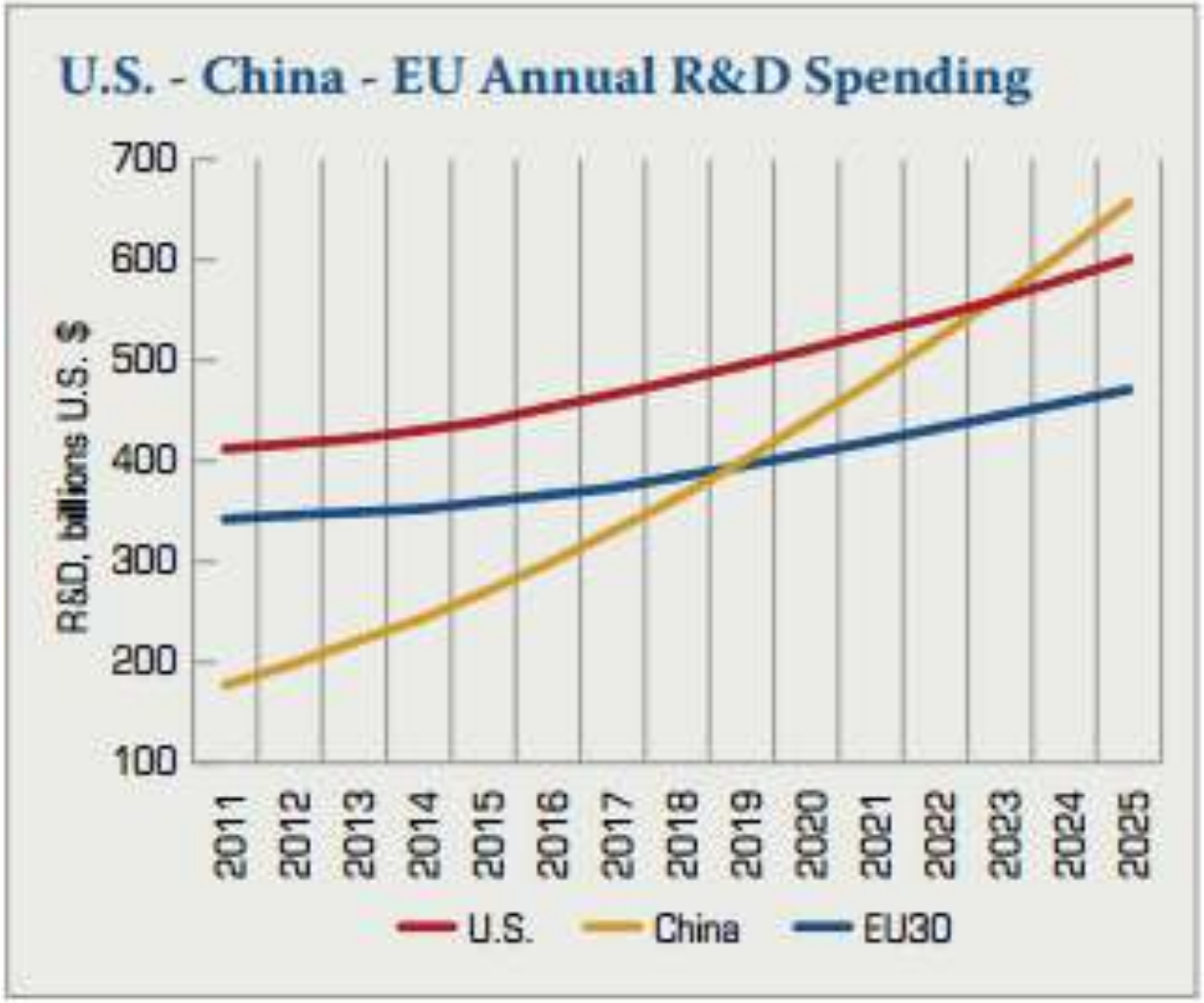
Global growth in R&D spending



2014: $1.6 trillion in Global R&D spending

Source: NSF Science and Engineering Indicators, 2012

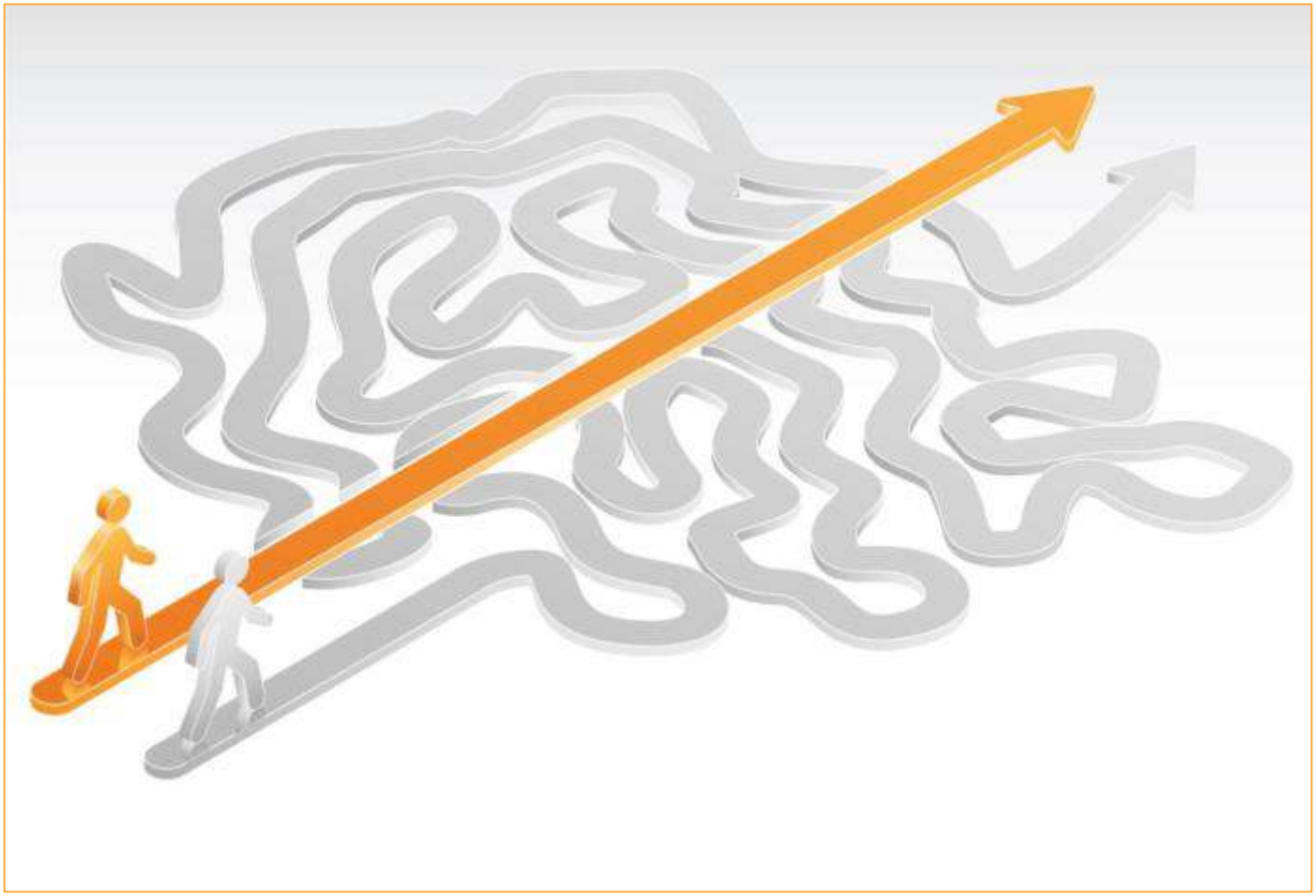
Global big spenders



Source: Battelle and R&D Magazine's "2013 Global R&D Funding Forecast"

Building your collaboration roadmap

Established Relationships + New Relationships

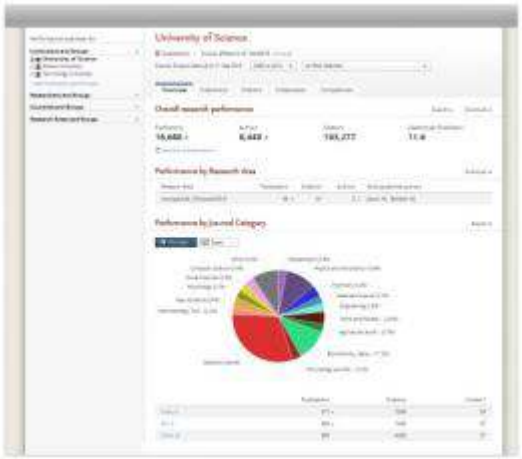


SciVal

Data from 220 nations and 4,600 research institutions worldwide

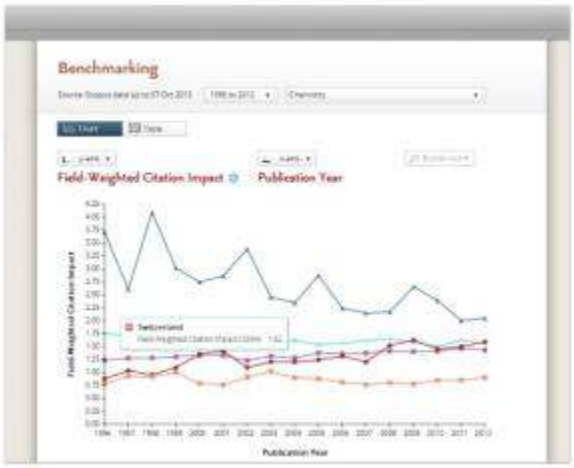
Overview

Snapshots of any selected entity



Benchmark

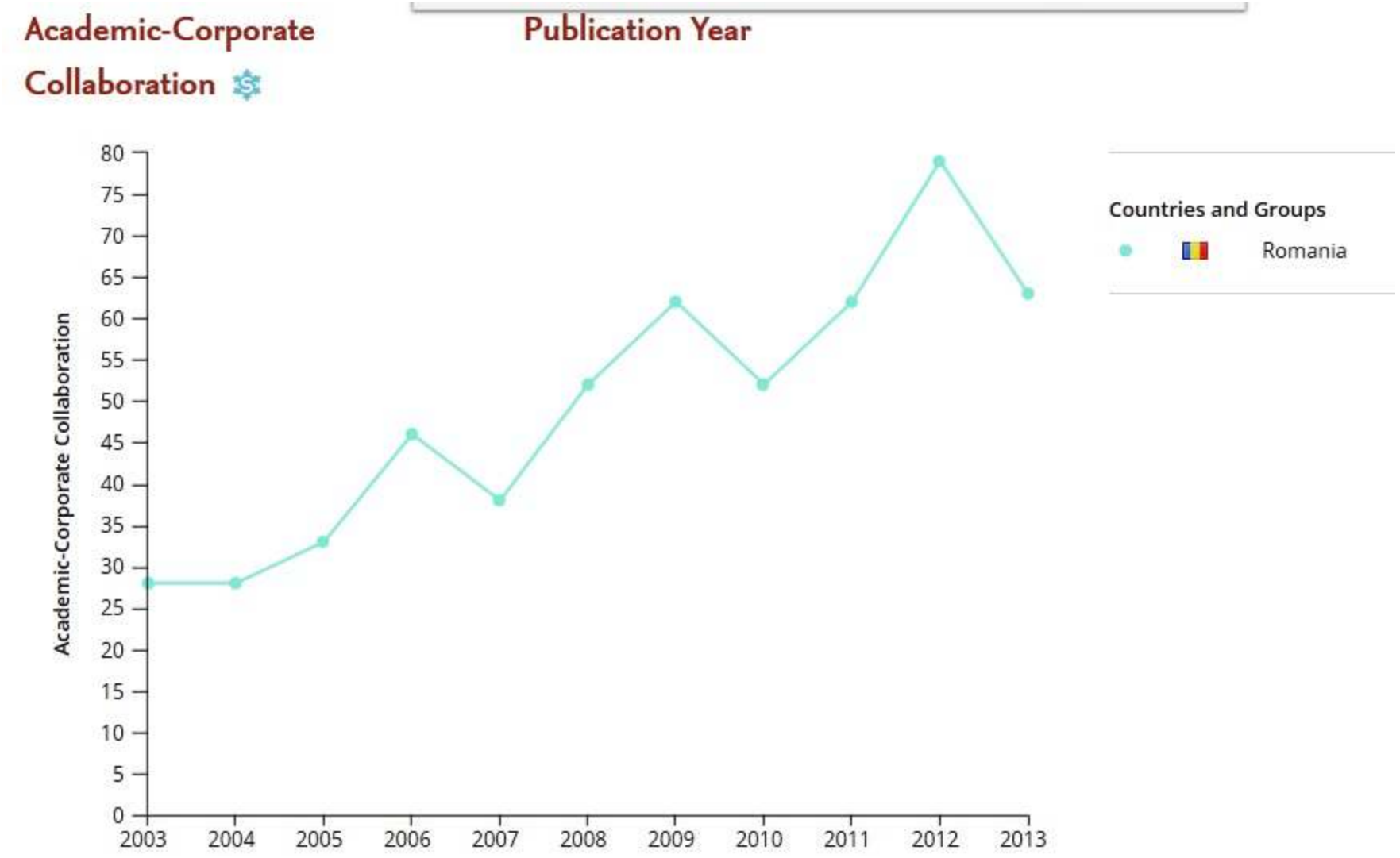
Create and compare groups of entities



Collaboration

Identify and analyze collaboration partners

Academic – Corporate collaboration



Academic – Corporate collaboration – Babes-Bolyai University

Institutions collaborating with Babes-Bolyai University

Worldwide | Corporate | ← Filter for more (regional) detail or filter by field at the top of the page

14 collaborating Institutions | 36 co-authored publications

Difference in citation behavior - UBB

Publications at Babes-Bolyai University, by amount of international, national and institutional collaboration

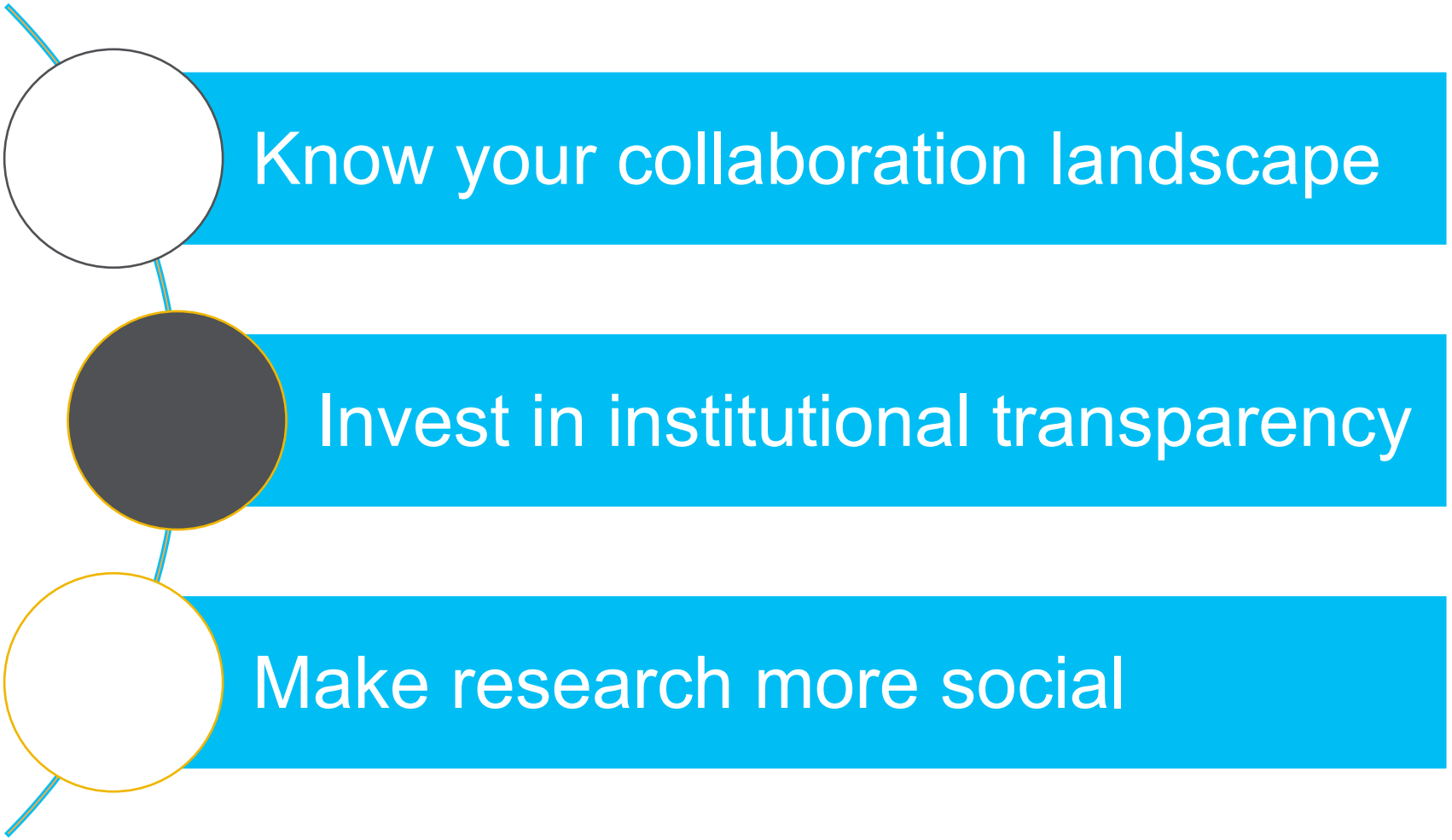
Metric		Publications	Citations	Citations per Publication	Field-Weighted Citation Impact
International collaboration	43.1%	2,216	15,647	7.1	1.48
Only national collaboration	14.8%	758	2,087	2.8	0.63
Only institutional collaboration	27.9%	1,432	3,821	2.7	0.65
Single authorship (no collaboration)	14.3%	734	1,191	1.6	0.63

Academic-Corporate Collaboration

Publications at Babes-Bolyai University with both academic and corporate author affiliations

Metric		Publications	Citations	Citations per Publication
Academic-corporate collaboration	0.7%	36	1,679	46.6
No academic-corporate collaboration	99.3%	5,104	21,067	4.1

Strategies for collaboration

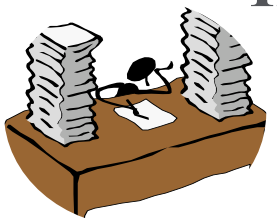


Transparency improves workflows

Internal benefits

Researcher

Better Information



Administrator

Department Head

External benefits

Better promotion

Better partners

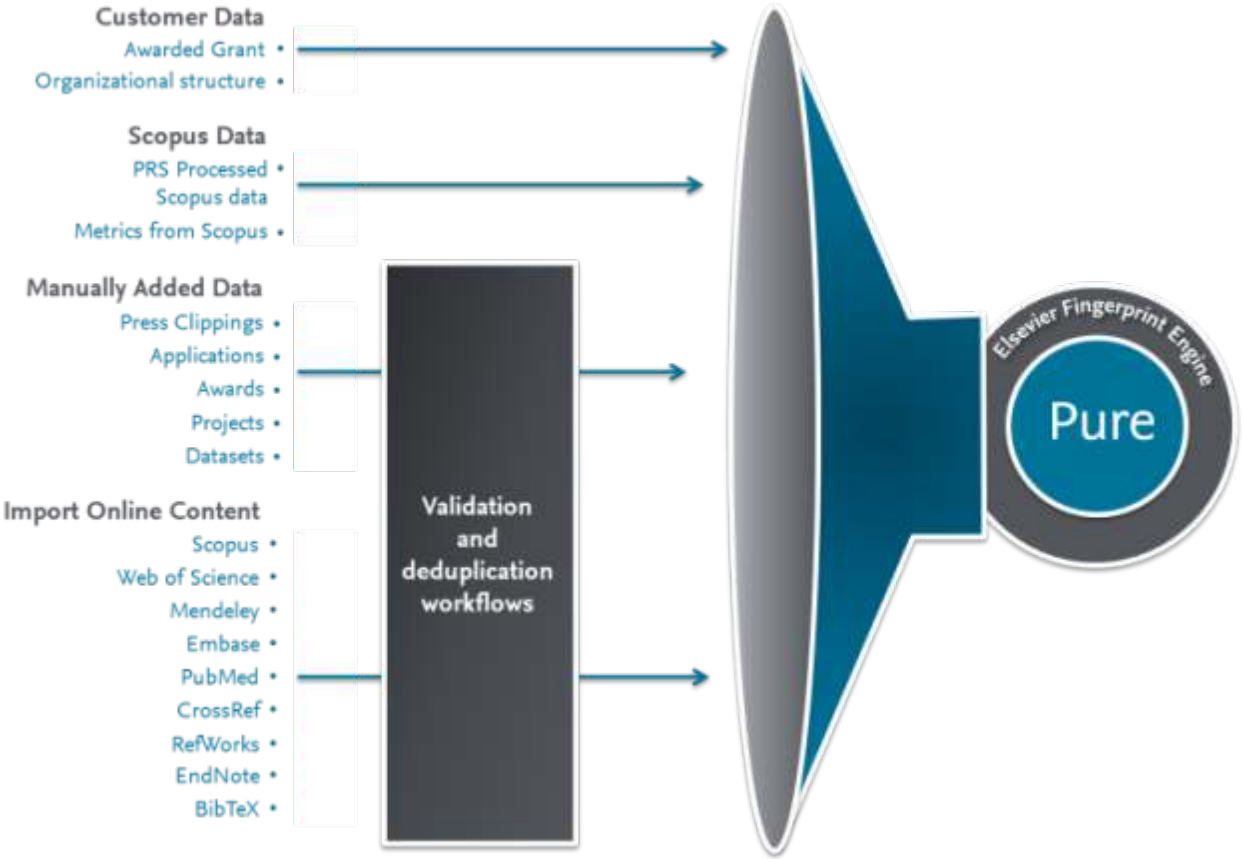
Better quality research

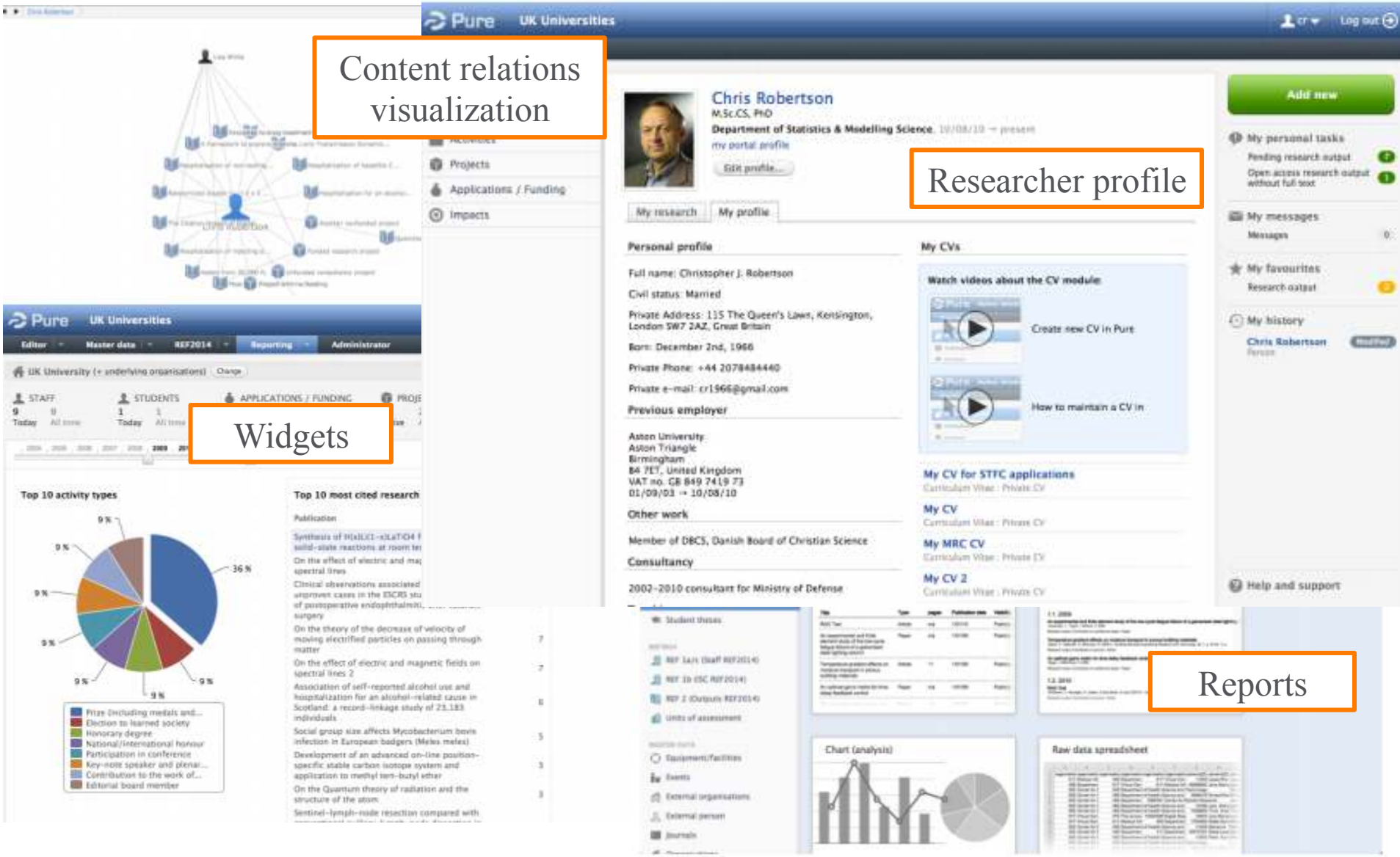
Better funding

Attract ever more competitive funding grants

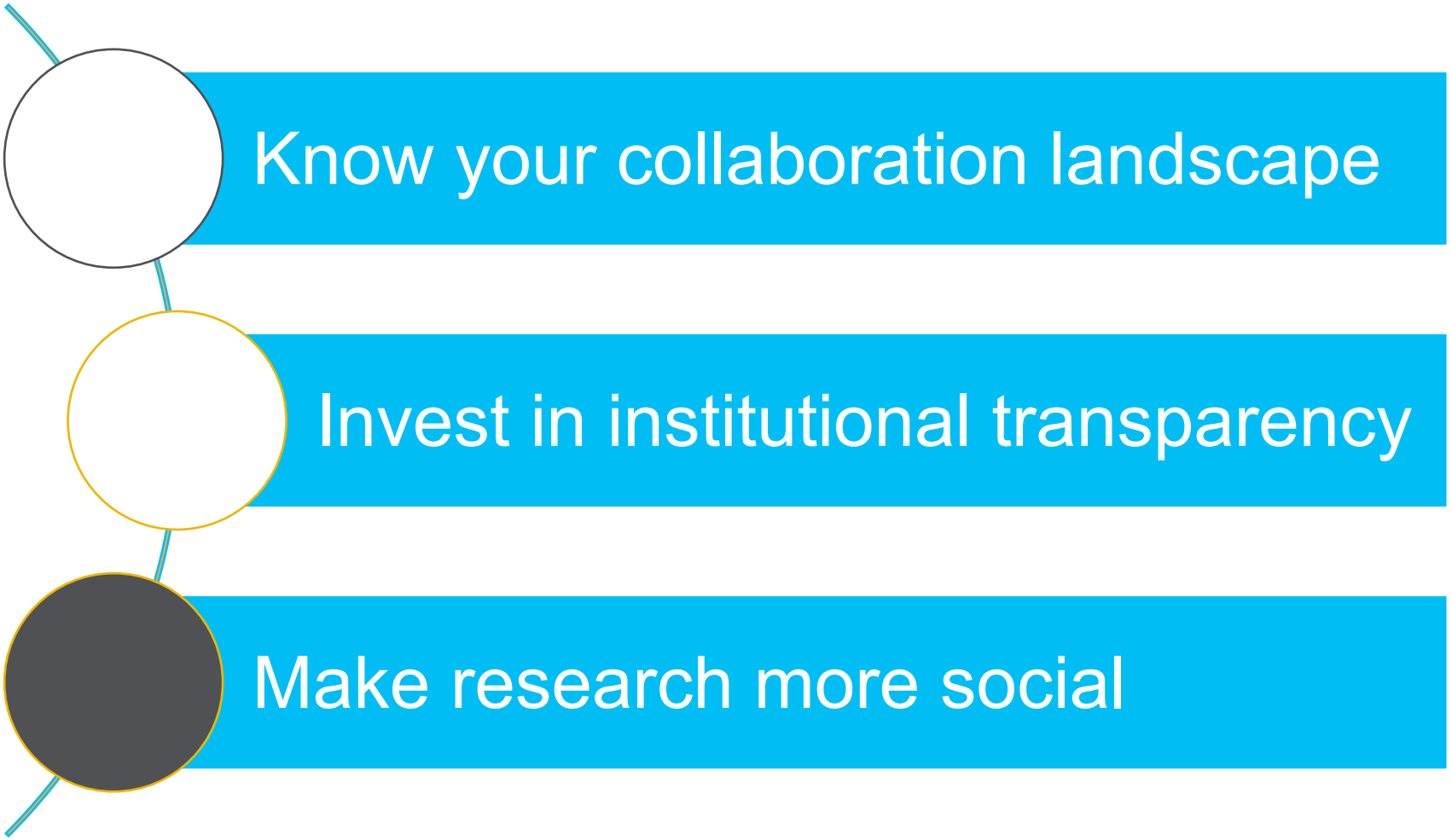
Report and promote research success and expertise

Identify the right research collaboration partners




Content relations visualization
Pure
UK Universities
Chris Robertson
M.Sc.CS, PhD
Department of Statistics & Modelling Science
Projects
Applications / Funding
Impacts
Researcher profile
Add new
My personal tasks
My messages
My favourites
My history
Help and support
Personal profile
My CVs
Watch videos about the CV module
Create new CV in Pure
How to maintain a CV in
Previous employer
Other work
Consultancy
Widgets
Top 10 activity types
Top 10 most cited research
Reports
Chart (analysis)
Raw data spreadsheet

Strategies for Collaboration



Social media and social networks

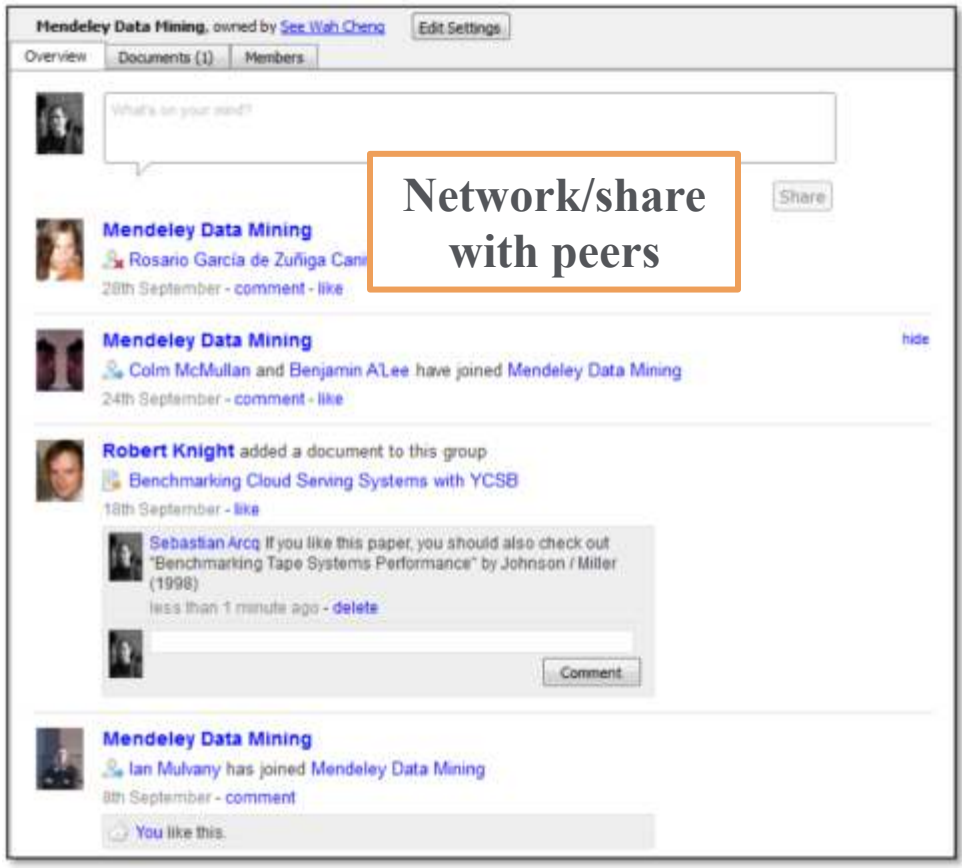
ResearchGate
SCIENTIFIC NETWORK

facebook

twitter

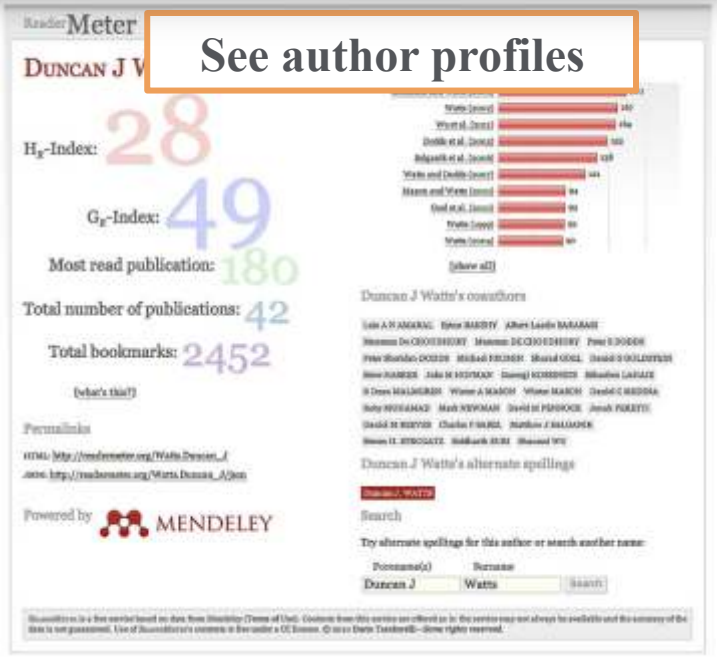
Mendeley

MENDELEY



Network/share with peers

Collaborate within groups



See author profiles

Start collaborating!

Thank you!

ELSEVIER