



# Transforming analytics for better research governance: Connecting the dots in the scholarly ecosystem to gather tangible insights and deliver value, an institutional (user) perspective

Presentation for:

24th Annual EARMA Conference 2018

Brussels, 17 April 2018

**Wilfred Mijnhardt**

**&**

**Bo Alroe**

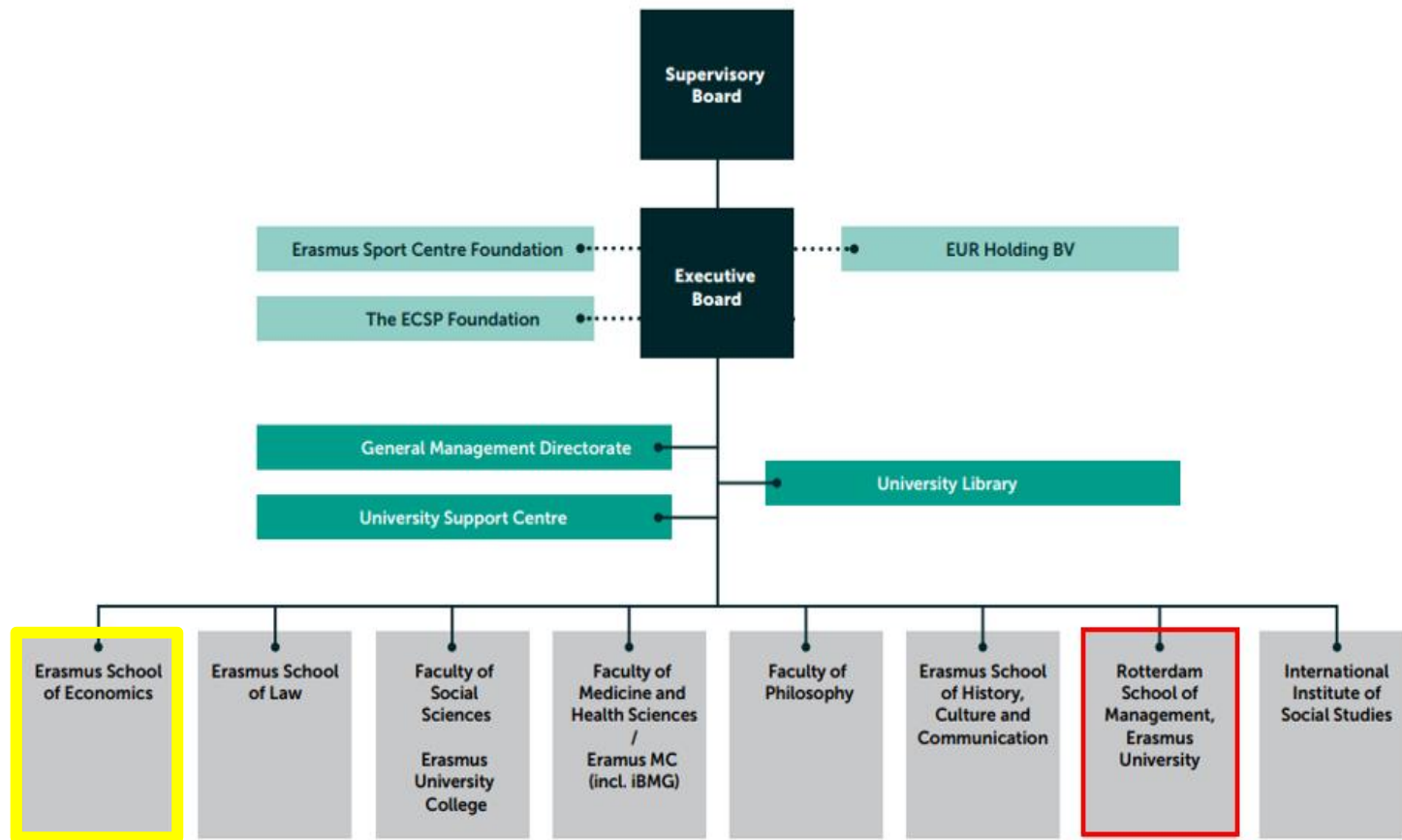
Policy Director RSM  
Rotterdam School of Management – RSM

Director Strategy  
Digital Science

## Agenda for today

- 1) Introduction
- 2) Erasmus University: business & economics field
- 3) Strategic user case: Faculty Careers
- 4) RIS Ecosystem thinking
- 5) Dimensions: next generation RIS platform: connections key
- 6) Connecting the dots: Career dimensions
- 7) Conclusions





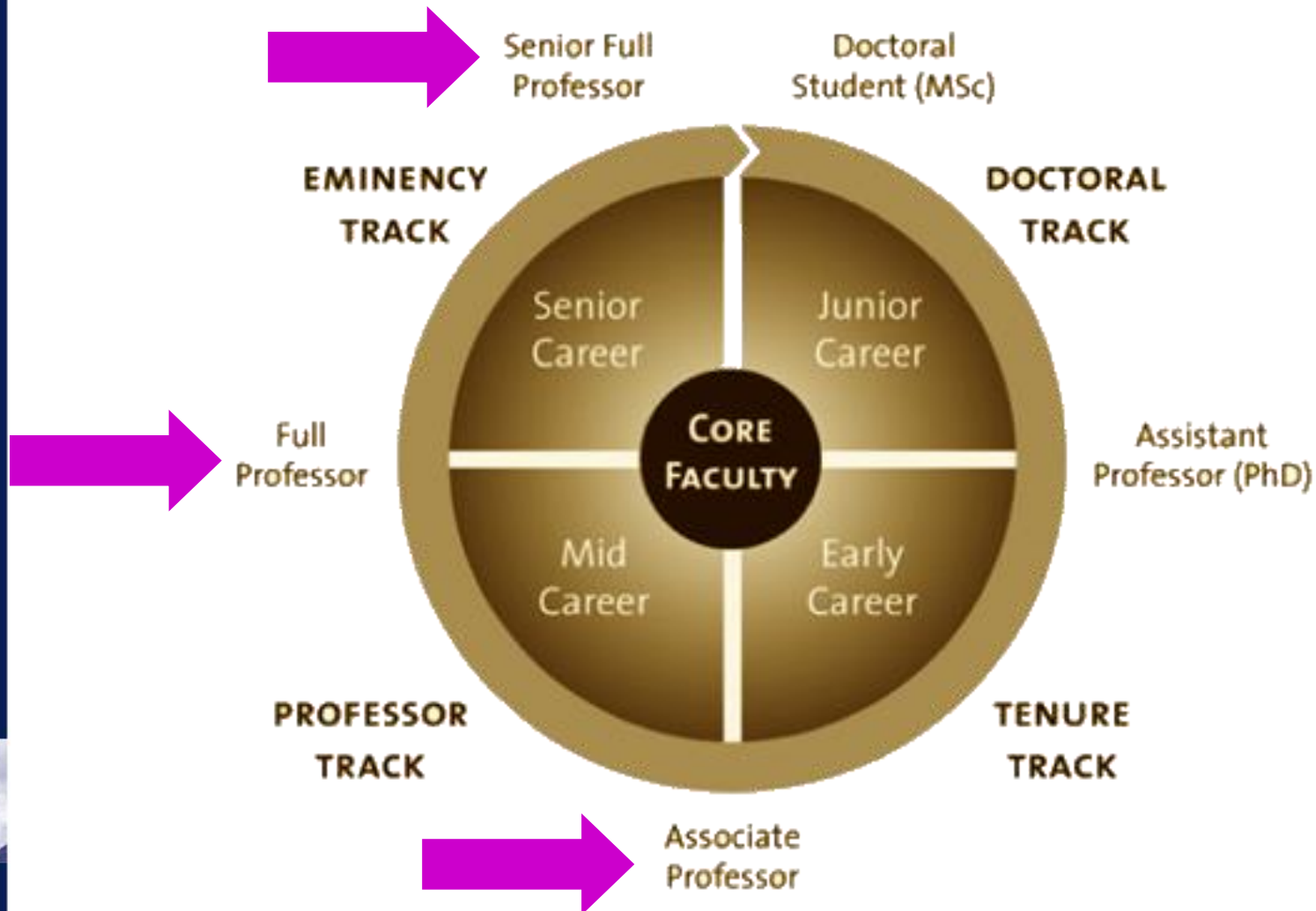
## Erasmus University, Economics & Business



**User case:**

## **Faculty Careers & Impact Metrics**

## Strategic perspective: Academic Career focus on 4 faculty development 'tracks'



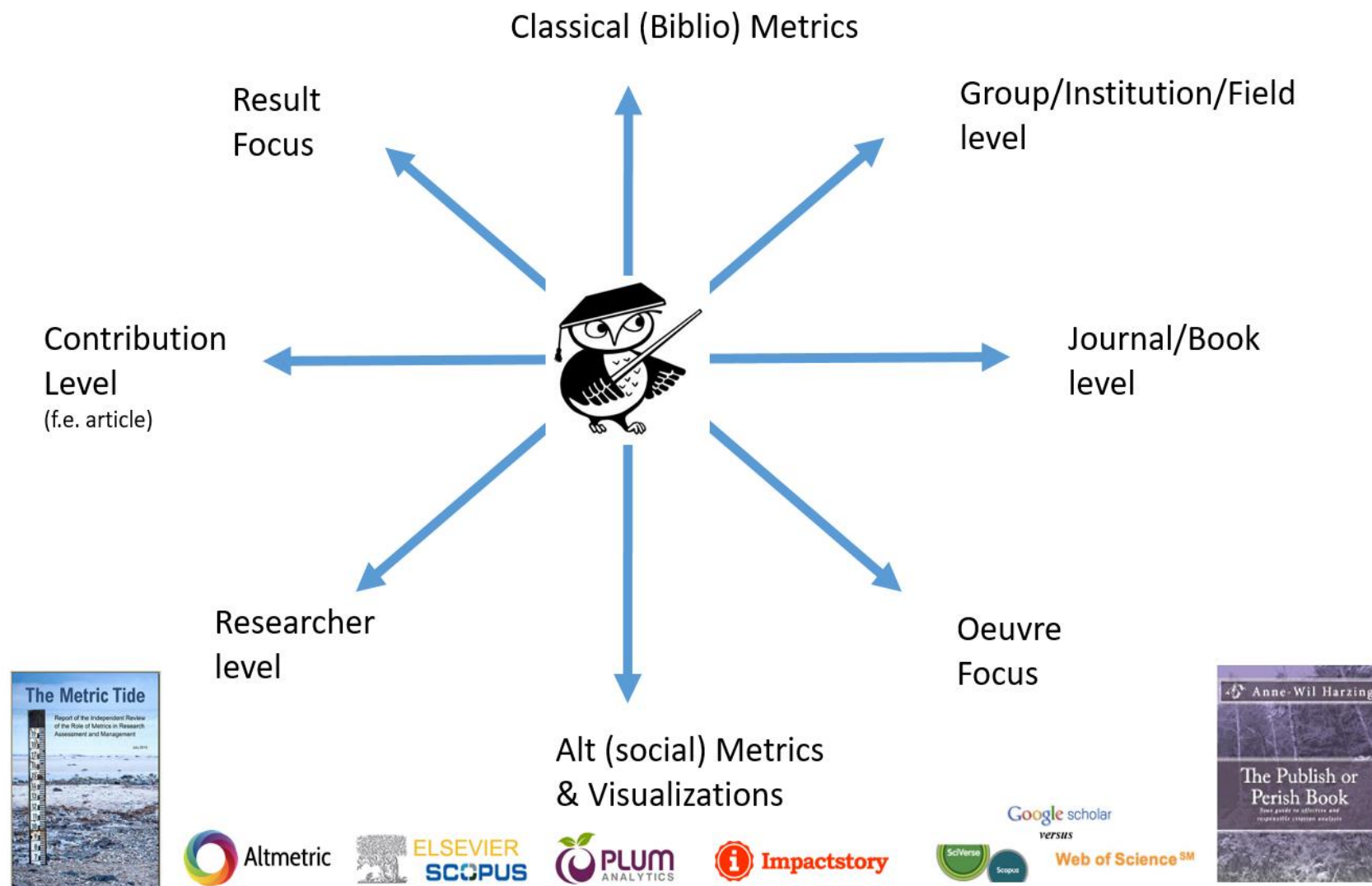
# Goal: Career Impact

## Types of Impact: Diversity



# Impact Assessment?

## Towards (responsible) Impact Performance Metrics



# **Matching user perspective to Research Intelligence Systems**

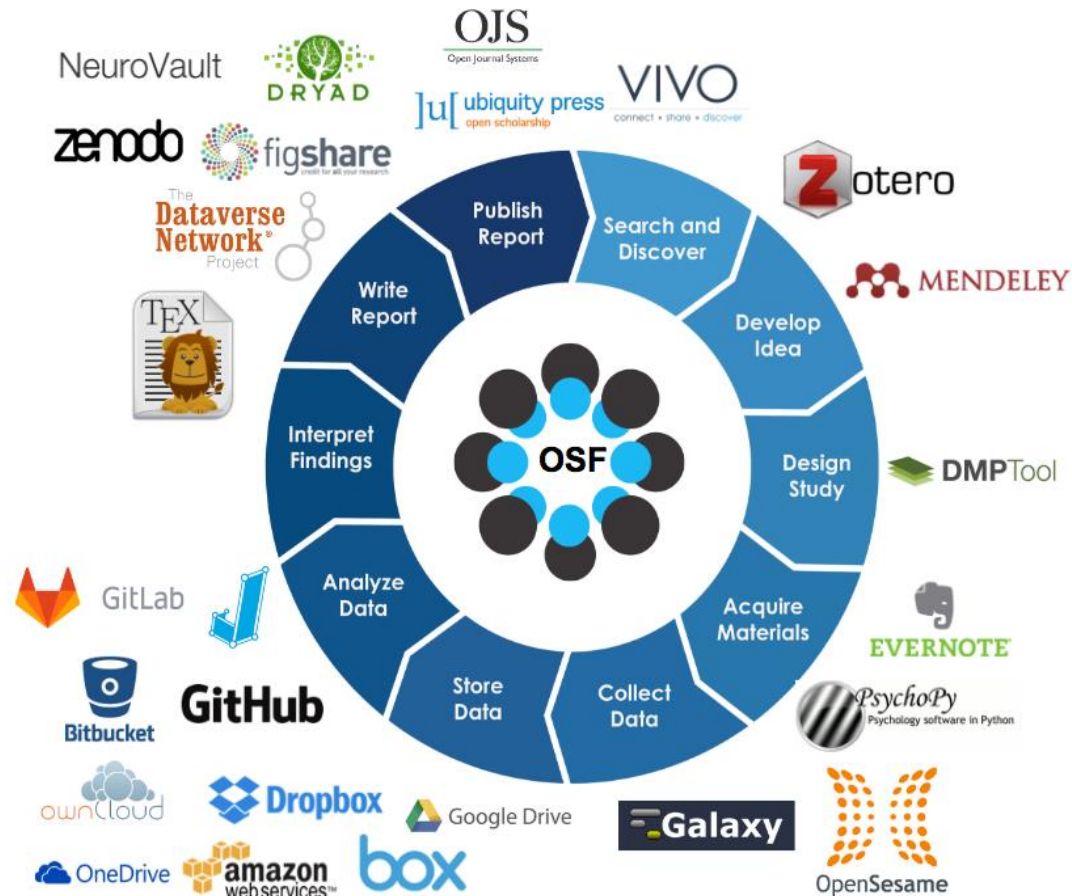




Personal view: All-In-One systems for Research Intelligence don't exist

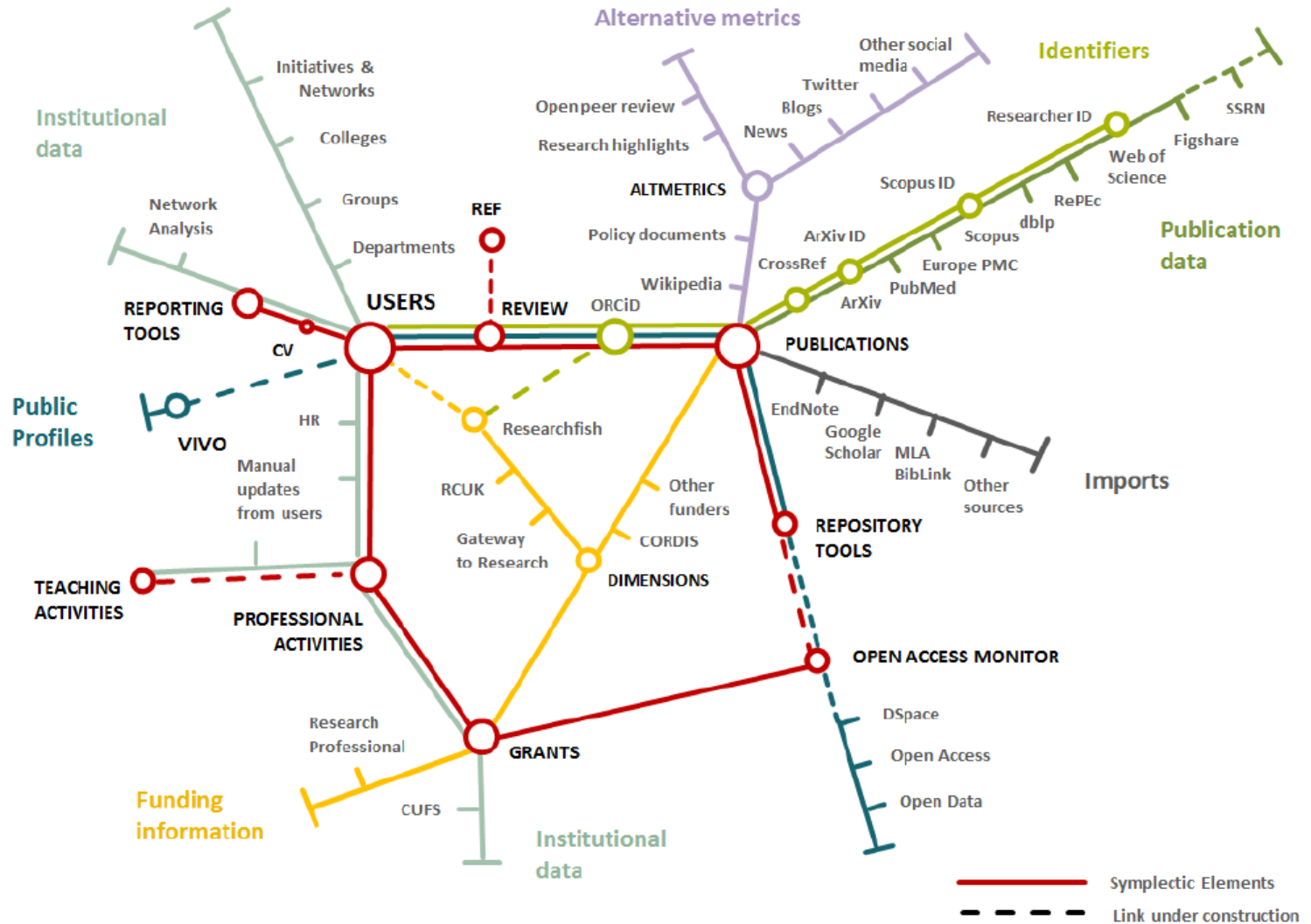


# RIS Ecosystem thinking: Open Science Framework Ecosystem

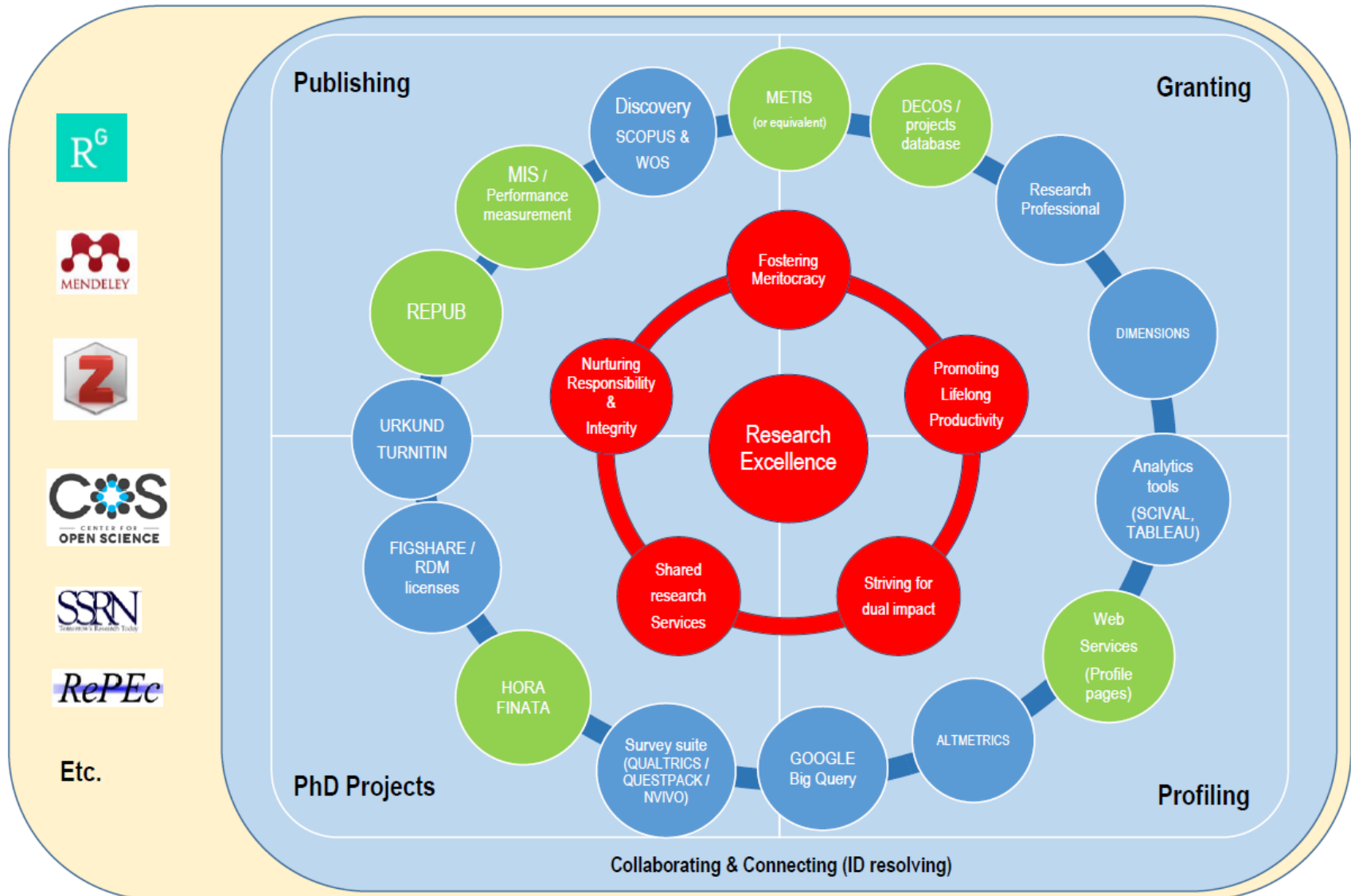
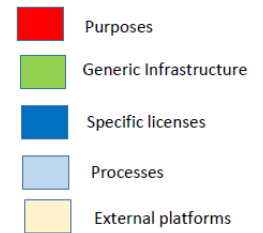


<https://cos.io/our-products/open-science-framework/>

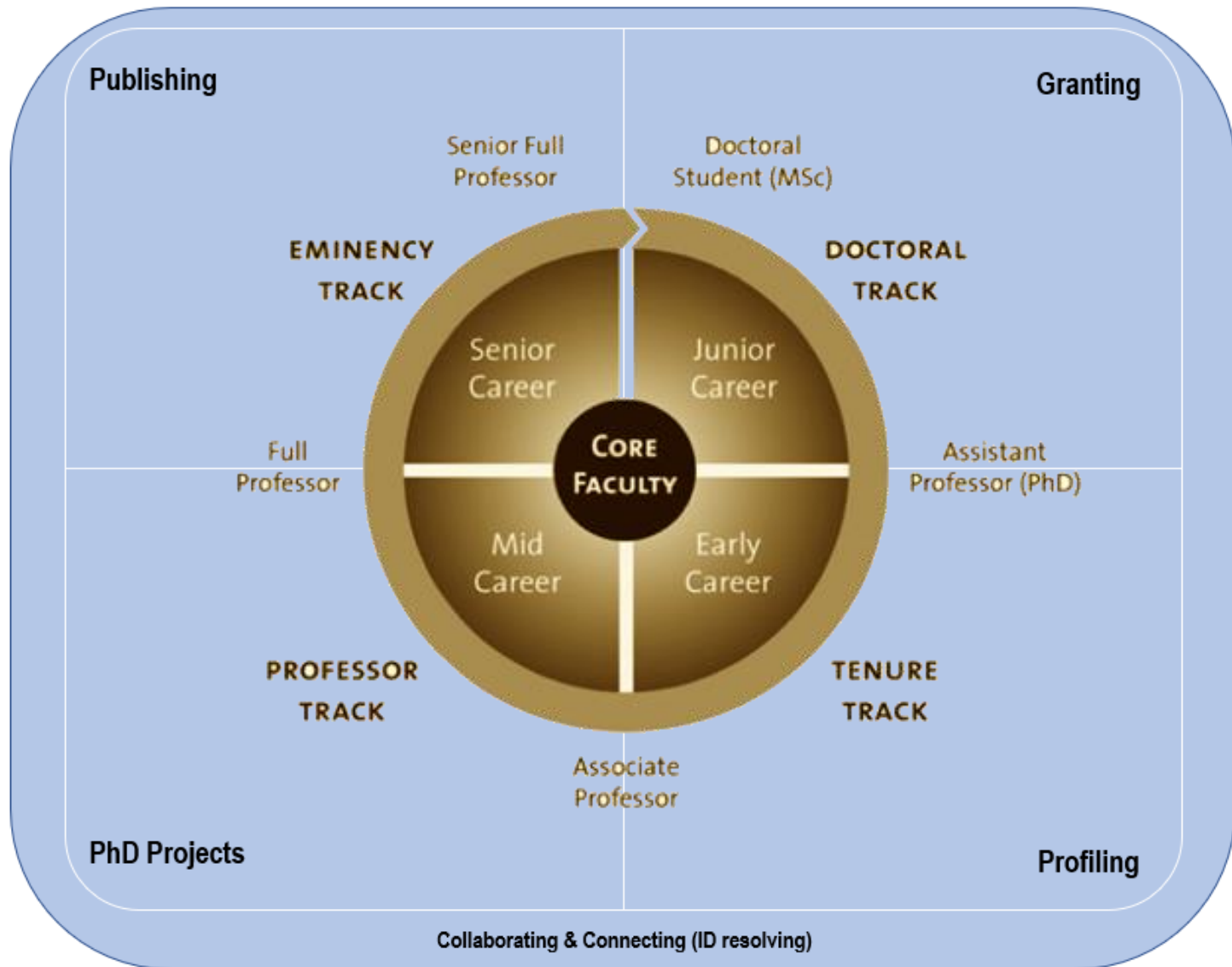
## RIS Ecosystem services example: Mindmap Cambridge



# Ecosystem thinking (personal view): Purpose driven, core processes and connections



# Strategic perspective: connecting processes and tracks



# **Next generation RIS platform:**

## **Dimensions**

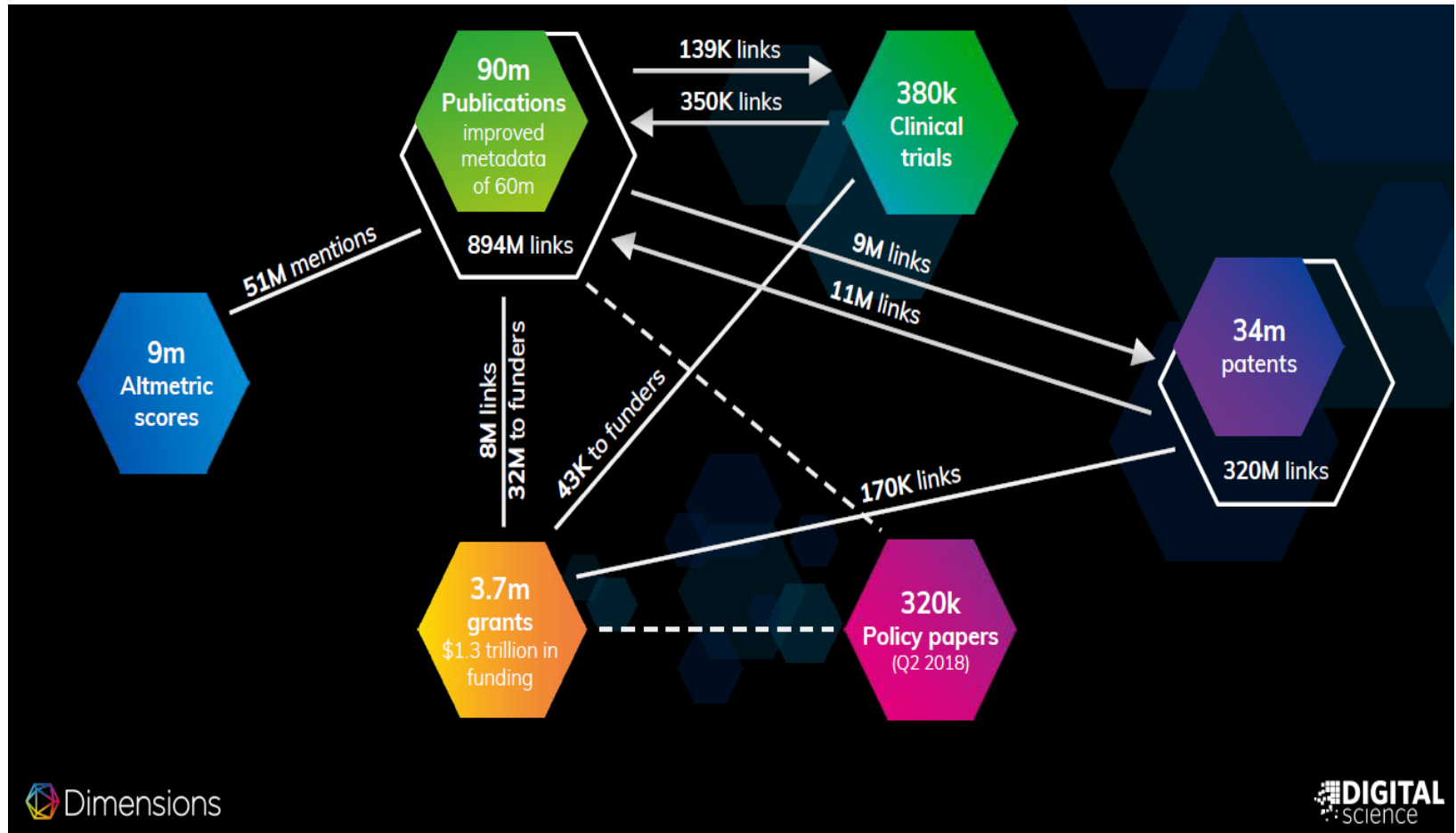
**By:**





## Ecosystem platform: Dimensions

### Data and connections



# Why Dimensions = Product innovation & Business Model Innovation

## Product innovation

- Broad view on research; pubs, grants, patents, trials, policy docs
- Links between all types of content
- Article-level classifications (not journal level)
- New human-friendly API language
- Built-in analytics (not a separate application)
- Built-in full-text access (both to OA-articles and subscribed articles)

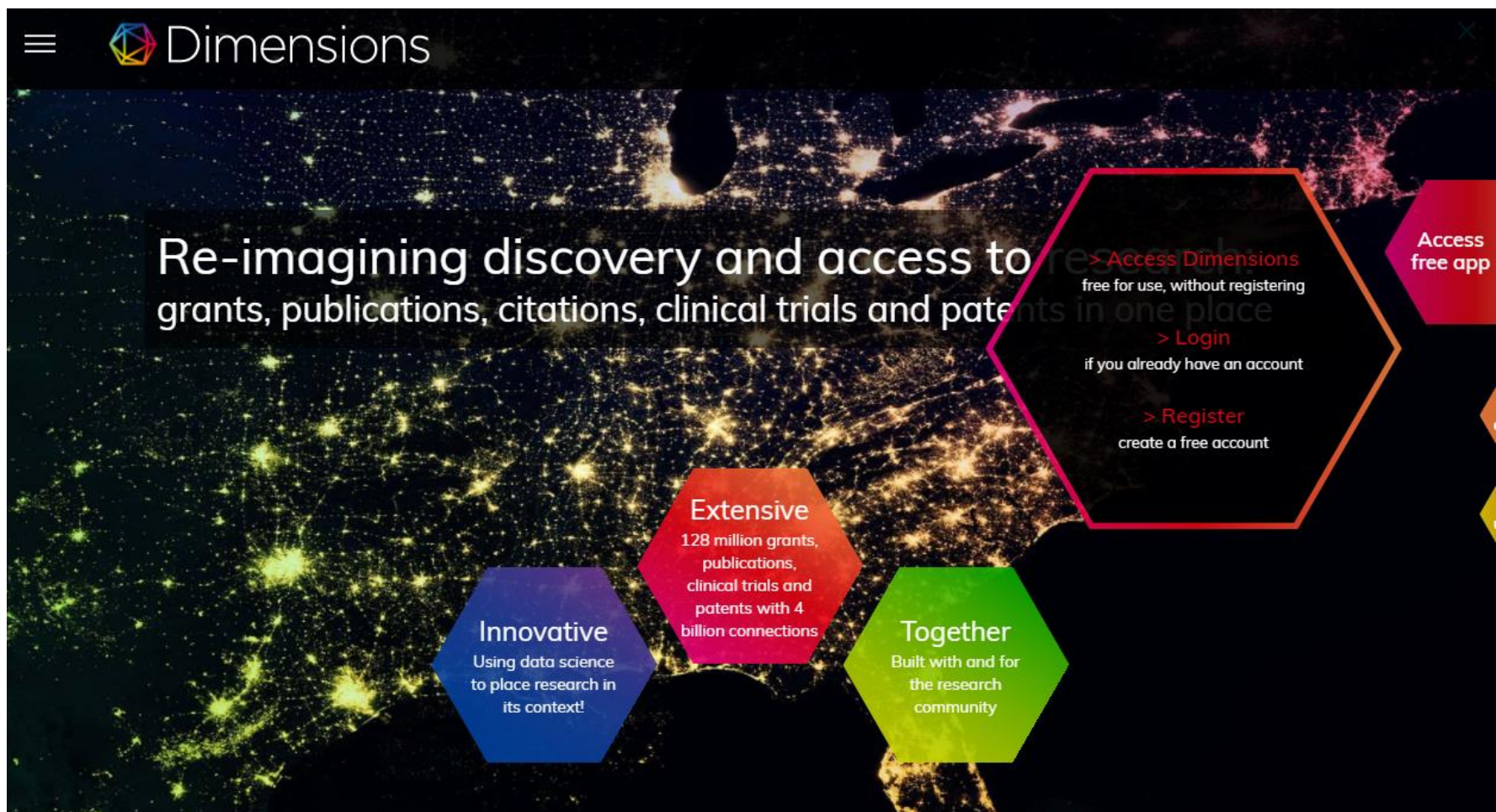
## - Business model innovation

- Free version for personal use with all pubs and citations (not grants, etc.)
- Free citations and badges for non-commercial use
- No restrictions on internal use of data from API
- Lower-than-normal pricing ("sustainable" pricing)





Free versions of Dimensions: [app.dimension.ai](https://app.dimension.ai) & [dimensions.ai](https://dimensions.ai)

The image shows the landing page of the Dimensions app. The background is a dark space with a network of glowing yellow and orange nodes and lines, resembling a complex data graph. At the top left, there is a hamburger menu icon and the Dimensions logo, which consists of a colorful geometric shape followed by the word "Dimensions". The main heading in the center reads "Re-imagining discovery and access to grants, publications, citations, clinical trials and patents in one place". To the right of this heading, there are three call-to-action buttons: "> Access Dimensions" (free for use, without registering), "> Login" (if you already have an account), and "> Register" (create a free account). Below the main heading, there are three hexagonal callouts. The first is blue and says "Innovative" with the subtext "Using data science to place research in its context!". The second is red and says "Extensive" with the subtext "128 million grants, publications, clinical trials and patents with 4 billion connections". The third is green and says "Together" with the subtext "Built with and for the research community". On the far right, there is a red hexagon that says "Access free app".

≡ Dimensions

# Re-imagining discovery and access to grants, publications, citations, clinical trials and patents in one place

- > Access Dimensions  
free for use, without registering
- > Login  
if you already have an account
- > Register  
create a free account

**Innovative**  
Using data science to place research in its context!

**Extensive**  
128 million grants, publications, clinical trials and patents with 4 billion connections

**Together**  
Built with and for the research community

**Access free app**

# Dashboard: starting point of discovery process

Save / Export
Workflow
Support
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FILTERS

PUBLICATION YEAR

2018

992,604

2017

4,394,565

2016

4,053,749

2015

3,963,248

2014

3,825,263

2013

3,666,847

2012

3,417,620

2011

3,296,895

2010

2,894,971

2009

2,783,455

More

RESEARCHER (BETA)

FUNDER

FUNDER GROUP

COUNTRY OF FUNDER

RESEARCH ORGANIZATION

COUNTRY

STATE/REGION

CITY

FIELDS OF RESEARCH

RESEARCH, CONDITION, AN...

PUBLICATIONS

91,516,808

GRANTS

3,982,261

PATENTS

34,697,128

CLINICAL TRIALS

390,733

ANALYTICAL VIEWS

RESEARCH CATEGORIES

1103 Clinical Sciences

4,938,851

0601 Biochemistry and Cell Biology

2,818,959

1117 Public Health and Health Servi...

2,562,663

0306 Physical Chemistry (incl. Struct...

2,482,180

0912 Materials Engineering

2,179,255

OVERVIEW

RCR Mean

0.76

FCR Mean

1.31

5,000,000

2,500,000

0

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

Publications

RESEARCHERS (BETA)

K Cenzual

University of Geneva, Switzerland

7,706

Thomas Gornall, S J

7,555

I Cibulka

University of Chemistry and Technology, Czechia

5,975

Ch Wohlfarth

Martin Luther University Halle-Wittenberg, Germ...

4,901

Hans-Otto Kalinowski

University of Giessen, Germany

3,573

Sort by: Publication Date

Title, Author(s), Bibliographic reference - About the metrics

Task-Sharing Approaches to Improve Mental Health Care in Rural and Other Low-Resource Settings: A Systematic Review

Theresa J. Hoeft, John C. Fortney, Vikram Patel, Jürgen Unützer

2018, The Journal of Rural Health - Article

Citations

4

Altmetric

3

Open Access

Add to Library

A preliminary account of the Cucurbitariaceae

W.M. Jaklitsch, J. Checa, M.N. Blanco, I. Olariaga, S. Tello, H. Voglmayr

2018, Studies in Mycology - Article

Citations

1

Altmetric

1

View PDF

Add to Library

Learning a variational network for reconstruction of accelerated MRI data

Kerstin Hammernik, Teresa Klatzer, Erich Kobler, Michael P. Recht, Daniel K. Sodickson, Thoma...

2018, Magnetic Resonance in Medicine - Article

Citations

2

Altmetric

5

Open Access

Add to Library

Density-weighted concentric circle trajectories for high resolution brain magnetic resonance spectroscopic imaging at 7T

Lukas Hingerl, Wolfgang Bogner, Philipp Moser, Michal Považan, Gilbert Hangel, Eva Heckova, ...

2018, Magnetic Resonance in Medicine - Article

Altmetric

1

Open Access

Add to Library

3D diffusion-weighted 129Xe MRI for whole lung morphometry

Ho-Fung Chan, Neil J Stewart, Graham Norquay, Guilhem J Collier, Jim M Wild

2018, Magnetic Resonance in Medicine - Article

Altmetric

1

Open Access

Add to Library

Ghost reduction in echo-planar imaging by joint reconstruction of images and line-to-line delays and phase errors

Julianna D. Ianni, E. Brian Welch, William A. Grissom

## About Metrics in Dimensions

### Publication citations

Citation Count is the number of times that this paper has been cited by other published papers in the database.

### Altmetric Attention Score

The Altmetric Attention Score is a weighted count of all of the online attention Altmetric have found for an individual research output. This includes mentions in public policy documents and references in Wikipedia, the mainstream news, social networks, blogs and more. More detail on the weightings of each source and how they contribute to the attention score is available

### Relative Citation Ratio (RCR)

The Relative Citation Ratio (RCR) indicates the relative citation performance of an article when comparing its citation rate to that of other articles in its area of research. A value of more than 1.0 shows a citation rate above average. The article's area of research is defined by the articles that have been cited alongside it. The RCR is normalized to 1.0 for all articles.

### Field Citation Ratio (FCR)

The Field Citation Ratio (FCR) is an article-level metric that indicates the relative citation performance of an article, when compared to similarly-aged articles in its subject area. A value of more than 1.0 indicates higher than average citation, when defined by FoR Subject Code, publishing year and age. The FCR is calculated for articles published in 2000 and later.

### Citation Recency

The recent citations value is the number of citations that were received in the last two years. It is currently reset at the beginning of each calendar year.

### Patent citations

Patent citations is the number of times that this record has been cited by other published patents. Patents may be registered in several offices, and this may effect patent citation data.



## Field choice: Business and management, Sorted by RCR (or other metric)

**Dimensions** 1503 Business and Management Fields of Research Save / Export Workflow Support Wilfred Mijnhardt

**FILTERS** FAVORITES

- PUBLICATION YEAR
- RESEARCHER (BETA)
- FUNDER
- FUNDER GROUP
- COUNTRY OF FUNDER
- RESEARCH ORGANIZATION
- COUNTRY
- STATE/REGION
- CITY
- ✓ **FIELDS OF RESEARCH**
  - 1503 Business and Management 337,713
  - 1701 Psychology 24,540
  - 1402 Applied Economics 23,531
  - 0806 Information Systems 22,478
  - 1605 Policy and Administration 8,595
  - 1117 Public Health and Health Sciences 7,186
  - 1608 Sociology 5,381
  - 1502 Banking, Finance and Investment 3,649
  - 0801 Artificial Intelligence and Information Systems 2,673
  - 1699 Other Studies In Human Sciences 2,371

[More](#)

**PUBLICATIONS** 337,713 **GRANTS** 26,847 **PATENTS** 17,092 **CLINICAL TRIALS** 38

Sort by: RCR

Title, Author(s), Bibliographic reference - [About the metrics](#)

**Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations**  
 TRISHA GREENHALGH, GLENN ROBERT, FRASER MACFARLANE, PAUL BATE, OLIVIA KYRIAKIDOU  
 2004, The Milbank Quarterly - Article  
 Citations 2.6k Altmetric 94 Open Access Add to Library

**Linearity of the Frank-Starling relationship in the intact heart: the concept of preload recruitable stroke work.**  
 D D Glower, J A Spratt, N D Snow, J S Kabas, J W Davis, C O Olsen, G S Tyson, D C Sabiston, J S Rankin  
 1985, Circulation - Article  
 Citations 663 Altmetric 29.96 Open Access Add to Library

**Disseminating Innovations in Health Care**  
 Donald M Berwick  
 2003, JAMA: The Journal of the American Medical Association - Article  
 Citations 1k Altmetric 36 Add to Library

**Safety climate in industrial organizations: Theoretical and applied implications.**  
 Dov Zohar  
 1980, Journal of Applied Psychology - Article  
 Citations 957 Altmetric 28.17 Add to Library

**How Can Research Organizations More Effectively Transfer Research Knowledge to Decision Makers?**  
 JOHN N. LAVIS, DAVE ROBERTSON, JENNIFER M. WOODSIDE, CHRISTOPHER B. McLEOD, JULIA ABELSON  
 2003, The Milbank Quarterly - Article  
 Citations 505 Altmetric 16.49 Open Access Add to Library

**ANALYTICAL VIEWS**

**RESEARCH CATEGORIES**

Category	Count
1503 Business and Management	337,713
1701 Psychology	24,540
1402 Applied Economics	23,531
0806 Information Systems	22,478
1605 Policy and Administration	8,595

**OVERVIEW**

RCR Mean 0.55 FCR Mean 1.31


Publications


**RESEARCHERS (BETA)**


Researcher	Institution	Count
Amrik S Sohal	Monash University, Australia	141
Angappa Gunasekaran	California State University, Bakersfield, United States	130
Joseph Sarkis	Worcester Polytechnic Institute, United States	123
Roger J Calantone		103



## Article level view 1: Article Level Metrics: citations and altmetrics


**Dimensions**


 1503 Business and Management  
Fields of Research

[Workflow](#)
[Support](#)
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Publication - Article

## Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations

[The Milbank Quarterly](#), 82(4), 581-629, 2004  
<https://doi.org/10.1111/j.0887-378x.2004.00325.x>

**Authors**  
 TRISHA GREENHALGH - [University College London](#)  
 GLENN ROBERT - [University College London](#)  
 FRASER MACFARLANE - [University of Surrey](#)  
[more](#)

**Abstract**  
 This article summarizes an extensive literature review addressing the question, How can we spread and sustain innovations in health service delivery and organization? It considers both content (defining and measuring the diffusion of innovation in organizations) and process (reviewing the literature in a systematic and reproducible way). This article discusses (1) a parsimonious and evidence-based model for considering the diffusion of innovations in health service organizations, (2) clear knowledge gaps where further research should be focused, and (3) a robust and transferable methodology for systematically reviewing health service policy and management. Both the model and the method should be tested more widely in a range of contexts.

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**Publication metrics** [About](#)

**Dimensions Badge**



	<b>2.6k</b>	Total citations
	<b>704</b>	Recent citations
	<b>424</b>	Field Citation Ratio
	<b>85</b>	Relative Citation Ratio

**Altmetric**



	Blogs (1)
	Policy documents (6)
	Twitter (98)
	Wikipedia (1)
	Mendeley (187)
	CiteULike (6)

## Article level view 2: Publication References

### Publication references - 78



Sorted by: Date

#### Funded by

Department of Health

#### Research Categories

1503 Business and Management

1605 Policy and Administration

#### External sources

➤ Full text at publisher site

➤ Abstract at PubMed

#### Determinants of innovation within health care organizations Literature review and Delphi study

Margot Fleuren, Karin Wiefferink, Theo Paulussen

2004, International Journal for Quality in Health Care - Article

Citations 320

Altmetric 6

Open Access

➤ Add to Library

#### Effectiveness and efficiency of guideline dissemination and implementation strategies.

J M Grimshaw, R E Thomas, G MacLennan, C Fraser, C R Ramsay, L Vale, P Whitty, M P Eccles, L Matowe, L Shirran, M Wensing, R ...

2004, Health Technology Assessment - Article

Citations 1.7k

Altmetric 7

Open Access

➤ Add to Library

#### Receptivity to Change in a General Medical Practice

John Newton, Joanne Graham, Kevin McLoughlin, Alice Moore

2003, British Journal of Management - Article

Citations 14

➤ Add to Library

#### Developing and Testing a Model to Predict Outcomes of Organizational Change

David H Gustafson, François Sainfort, Mary Eichler, Laura Adams, Maureen Bisognano, Harold Steudel

2003, Health Services Research - Article

Citations 138

Altmetric 3

Open Access

➤ Add to Library

#### Clinical Team Functioning and IT Innovation: A Study of the Diffusion of a Point-of-care Online Evidence System

A. Sophie Gosling, Johanna I. Westbrook, Jeffrey Braithwaite

2003, Journal of the American Medical Informatics Association - Article

Citations 39

Open Access

➤ Add to Library

More

## Article level view 3: Publication Citations


Publication citations - 2585



Sorted by: Date


### Advances in Perioperative Quality and Safety

Kathryn T. Anderson, Rachel Appelbaum, Marisa A. Bartz-Kurycki, KuoJen Tsao, Marybeth Browne  
2018, Seminars in Pediatric Surgery - Article

 [Add to Library](#)


### Dentists' opinions on using digital technologies in dental practice

Marieke M van der Zande, Ronald C Gorter, Josef J M Bruers, Irene H A Aartman, Daniel Wismeijer  
2018, Community Dentistry and Oral Epidemiology - Article

 [Add to Library](#)


### Psychometric Testing of the Smoking Cessation Counseling Scale Among Magnet® Hospital Nurses.

Wen Liu, Meg Johantgen, Robin Newhouse  
2018, Western Journal of Nursing Research - Article

 Open Access  [Add to Library](#)

### Applying theories to better understand socio-political challenges in implementing evidence-based work disability prevention strategies

Christian Ståhl, Katia Costa-Black, Patrick Loisel  
2018, Disability and Rehabilitation - Article

 1  [Add to Library](#)

### Is innovative workforce planning software the solution to NHS staffing and cost crisis? An exploration of the locum industry

Iakovos Theodoulou, Akshaya Mohan Reddy, Jeremy Wong  
2018, BMC Health Services Research - Article

 View PDF  [Add to Library](#)

[More](#)



## Article level view 4: Linked Clinical Trials

## Linked clinical trials - 3



Sorted by: Date Funding period

[HPV Vaccination: Evaluation of Reminder Prompts for Doses 2 & 3](#)

2015 - 2016

Regenstrief Institute - Indiana University System

[HPV Vaccination: An Investigation of Physician Reminders and Recommendation Scripts](#)

2014 - 2015

Regenstrief Institute - Indiana University System

[Implementing Tobacco Use Treatment Guidelines in Dental Public Health Clinics](#)

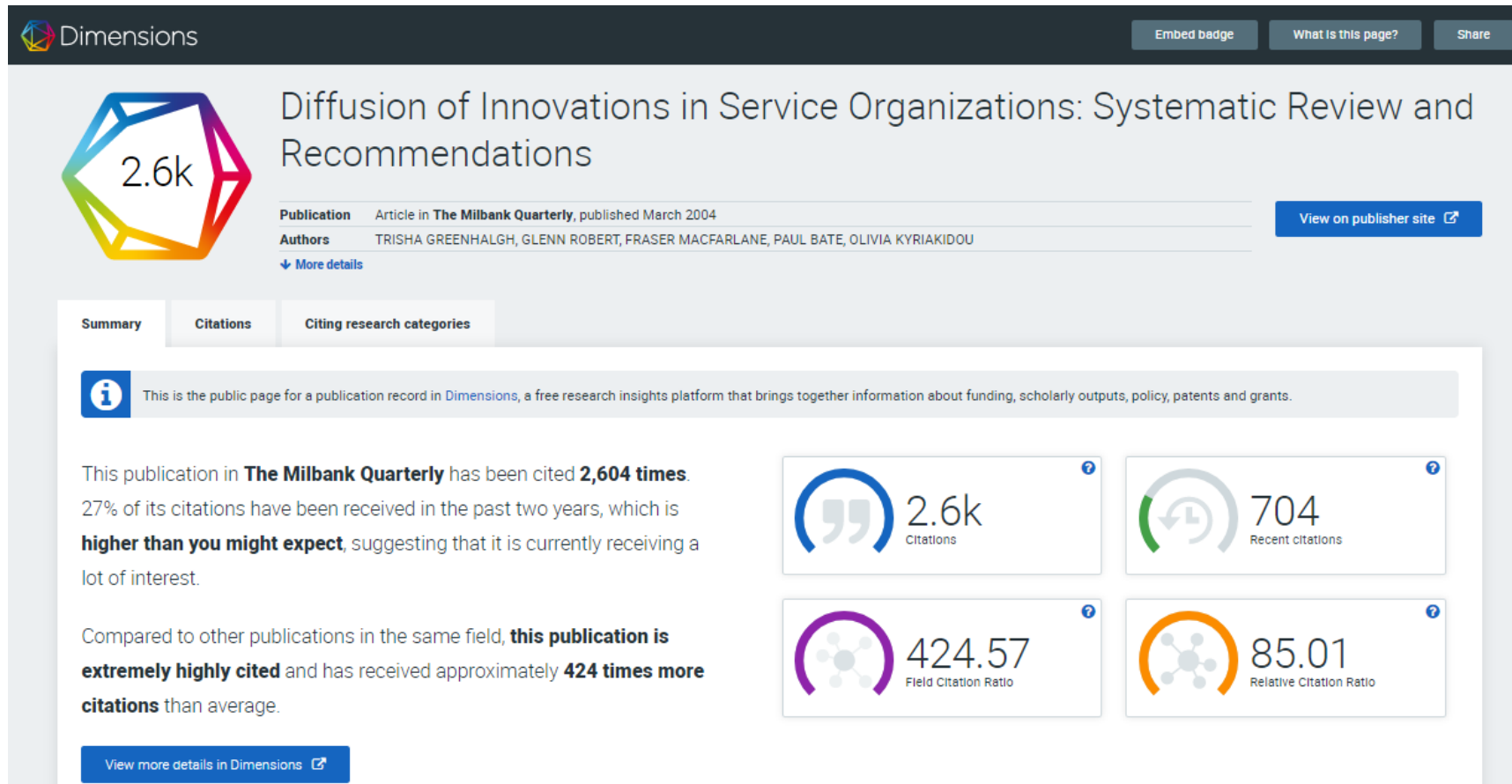
2013 - 2018

New York University - New York University, Memorial Sloan Kettering Cancer Center

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## Article level view 5: Impact Summary – available for each publication with citations



## Article level view 6: Article level citations pattern


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## Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations

**Publication** Article in *The Milbank Quarterly*, published March 2004

**Authors** TRISHA GREENHALGH, GLENN ROBERT, FRASER MACFARLANE, PAUL BATE, OLIVIA KYRIAKIDOU

[More details](#)

[View on publisher site](#)
[Summary](#)
[Citations](#)
[Citing research categories](#)

**2,604**  
CITATIONS

Dimensions has found a total of **2,604** citations of this research output. The most recent **3** are shown below. To view the rest you can visit its [publication page](#) on Dimensions.

[View in Dimensions](#)

### Applying theories to better understand socio-political challenges in implementing evidence-based work disability prevention strategies

Article in *Disability and Rehabilitation*, published April 2018

**Authors:** Christian Ståhl, Katia Costa-Black, Patrick Lolsel

**PURPOSE:** This article explores and applies theories for analyzing socio-political aspects of... [\[ show more \]](#)

### Psychometric Testing of the Smoking Cessation Counseling Scale Among Magnet® Hospital Nurses.

Article in *Western Journal of Nursing Research*, published April 2018

**Authors:** Wen Liu, Meg Johantgen, Robin Newhouse

Psychometrics of the Smoking Cessation Counseling Scale, which measures adherence to evidence... [\[ show more \]](#)

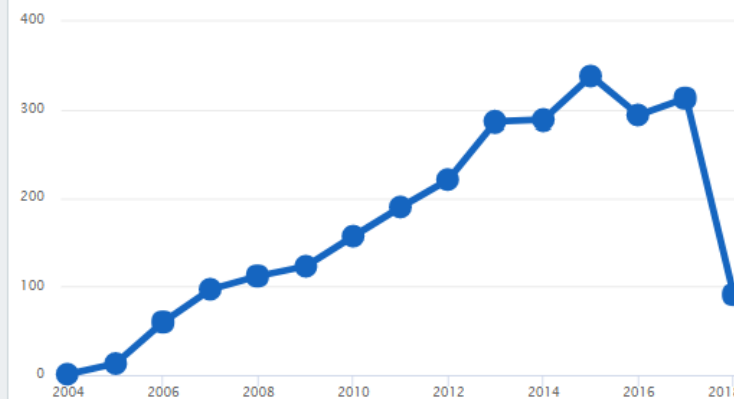
### Dentists' opinions on using digital technologies in dental practice

Article in *Community Dentistry and Oral Epidemiology*, published April 2018

**Authors:** Marieke M van der Zande, Ronald C Gorter, Josef J M Bruers, Irene H A Aartman, Daniel Wismeijer

**OBJECTIVES:** To investigate which opinions among dentists are associated with level of technology... [\[ show more \]](#)

Citations by year



## Article level view 7: Citing Research Categories (interdisciplinary citations)


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## Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations

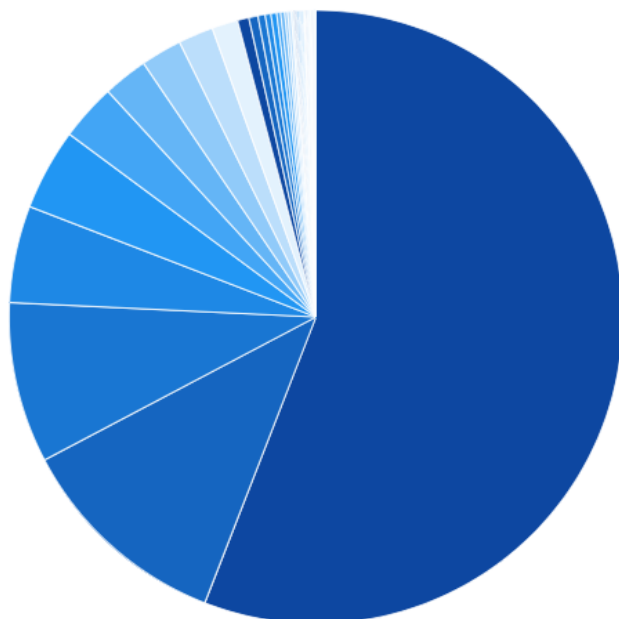
**Publication** Article in *The Milbank Quarterly*, published March 2004

**Authors** TRISHA GREENHALGH, GLENN ROBERT, FRASER MACFARLANE, PAUL BATE, OLIVIA KYRIAKIDOU

[↓ More details](#)

[View on publisher site](#)
[Summary](#)
[Citations](#)
[Citing research categories](#)
**46**
**CATEGORIES**

Research in one subject may be applicable to other areas. The visualization below shows which research fields may be finding this publication relevant, based on a simple count of the subject areas of the publications citing this one.

[View in Dimensions](#)

[\[ Show 31 more categories \]](#)
**Research Category (FOR code)**
**%**

1117 Public Health and Health Services	55.91
1503 Business and Management	11.37
1701 Psychology	8.48
1605 Policy and Administration	5.11
0806 Information Systems	4.29
1110 Nursing	3.00
1103 Clinical Sciences	2.35
1608 Sociology	2.18
1303 Specialist Studies In Education	1.84
1402 Applied Economics	1.36
1302 Curriculum and Pedagogy	0.61
1607 Social Work	0.48
1112 Oncology and Carcinogenesis	0.37
0801 Artificial Intelligence and Image Processing	0.31
1102 Cardiorespiratory Medicine and Haematology	0.31

[\[ Show 31 more categories \]](#)



## Some conclusions

- 1) RiS systems are strategic instruments
- 2) All-in-1 does not exist
- 3) Ecosystem approach is more realistic
- 4) Connecting careers and impact to RIS is challenge
- 5) New generation RIS connect results of 4 core research processes
- 6) Dimensions is example of “responsible RIS”: article level thinking
- 7) Product and business model innovator
- 8) Next-generation research databases like Dimensions provide a broader view on research than the traditional abstract- and citation-based view
- 9) Dimensions is valuable for both individual researchers and institutional use



## Contact

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<https://twitter.com/wmijnhardt>