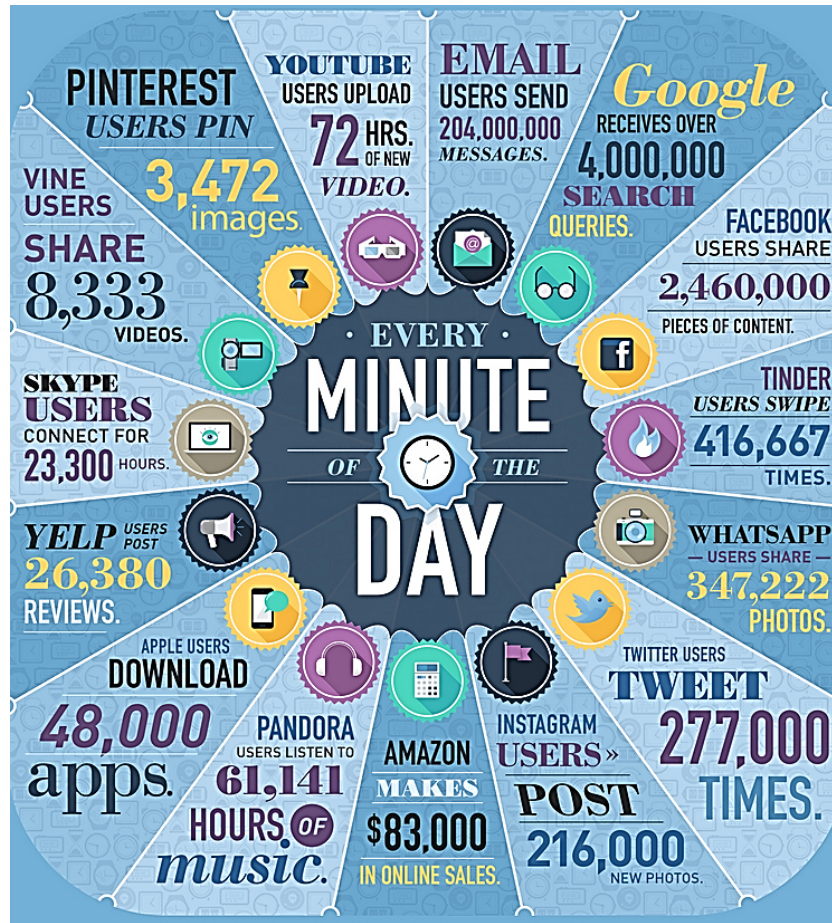

Alternative Metriken im Einsatz: Lessons Learned

Professorin Dr. Isabella Peters, Web Science

Ausgangssituation Ia: Soziale Medien durchdringen den Alltag



Quelle: <http://www.domo.com/learn/data-never-sleeps->

Ausgangssituation Ib: Soziale Medien durchdringen den Forschungsalltag

The image shows a Twitter search interface for the term 'econstor'. The search results display three tweets. The first tweet is from José Luis Cárdenas T (@PepoCardenasT) and links to a document on EconStor. A blue arrow points from this tweet to a larger, detailed view of the document on the right. The detailed view shows the title 'Buyer power and suppliers' incentives to innovate' by Köhler, Christian; Rammer, Christian. It is identified as a Working Paper (ZEW Discussion Papers, No. 12-058) provided in cooperation with ZEW - Zentrum für Europäische Wirtschaftsforschung / Center for European Economic Research. The document is available at <http://hdl.handle.net/10419/66126>. Below the title, there are sections for 'Nutzungsbedingungen' (Terms of Use) in German and 'Terms of use' in English.

Ausgangssituation IIa: Kritik an traditioneller Wissenschaftsevaluation



San Francisco Declaration of Research Assessment

(<http://am.ascb.org/dora>)

- “The declaration intends to halt the practice of correlating the journal impact factor to the merits of a specific scientist's contributions. [...] this practice creates biases and inaccuracies when appraising scientific research. [...] the impact factor is not to be used as a substitute ‘measure of the quality of individual research articles, or in hiring, promotion, or funding decisions”

Altmetrics Manifesto (<http://altmetrics.org/manifesto>)

- “Altmetrics expand our view of what impact looks like, but also of what's making the impact. [...] Unlike citation metrics, altmetrics will track impact outside the academy, impact of influential but uncited work, and impact from sources that aren't peer-reviewed. [...] The speed of altmetrics presents the opportunity to create real-time recommendation and collaborative filtering systems”

Ausgangssituation IIb: Verantwortung in der Bibliometrie

The Leiden Manifesto (<http://www.leidenmanifesto.org>)

- Quantitative evaluation should support **expert assessment**.
- Measure performance in accordance with the **research mission**.
- **Protect excellence** in locally relevant research
- Keep data collection and analytical **processes open, transparent and simple**.
- Allow for **data verification**
- Account for **variation** by field in publication and citation practices
- Data should be interpreted taking into account the difficulty of credit assignment in the case of **multi-authored publications**.
- Base assessment of **individual** researchers on **qualitative** judgment.
- **False precision** should be avoided (eg. the JIF).
- **Systemic effects** of the assessment and the indicators should be taken into account and **indicators** should be **updated regularly**

Ausgangssituation III: Open Science

Carlos Moedas

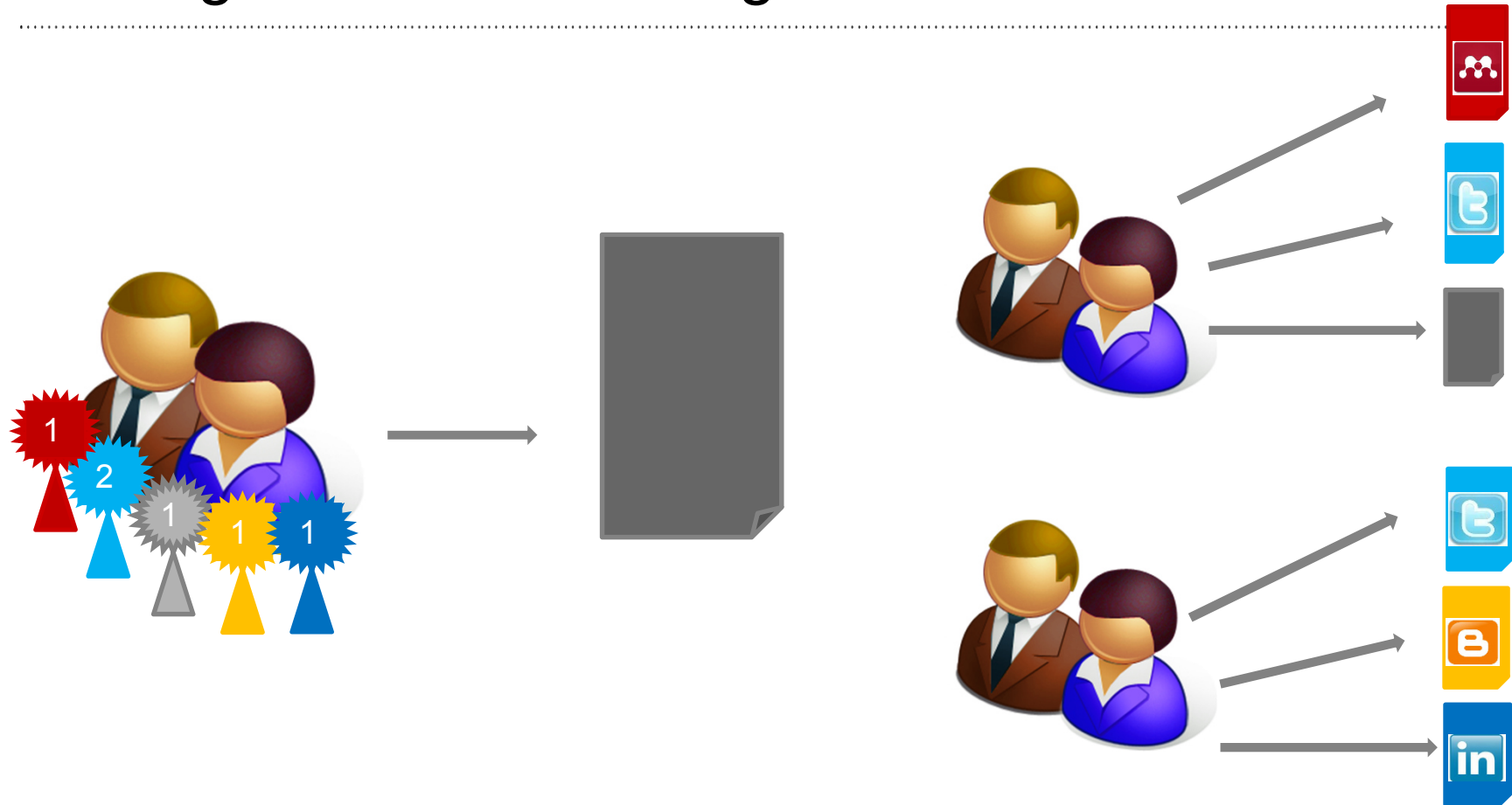
Commissioner for Research, Science & Innovation

„...the way that science works is fundamentally changing and an equally important transformation is taking place in how companies and societies innovate. Put simply, the advent of digital technologies is making science and innovation more open, collaborative, and global.“

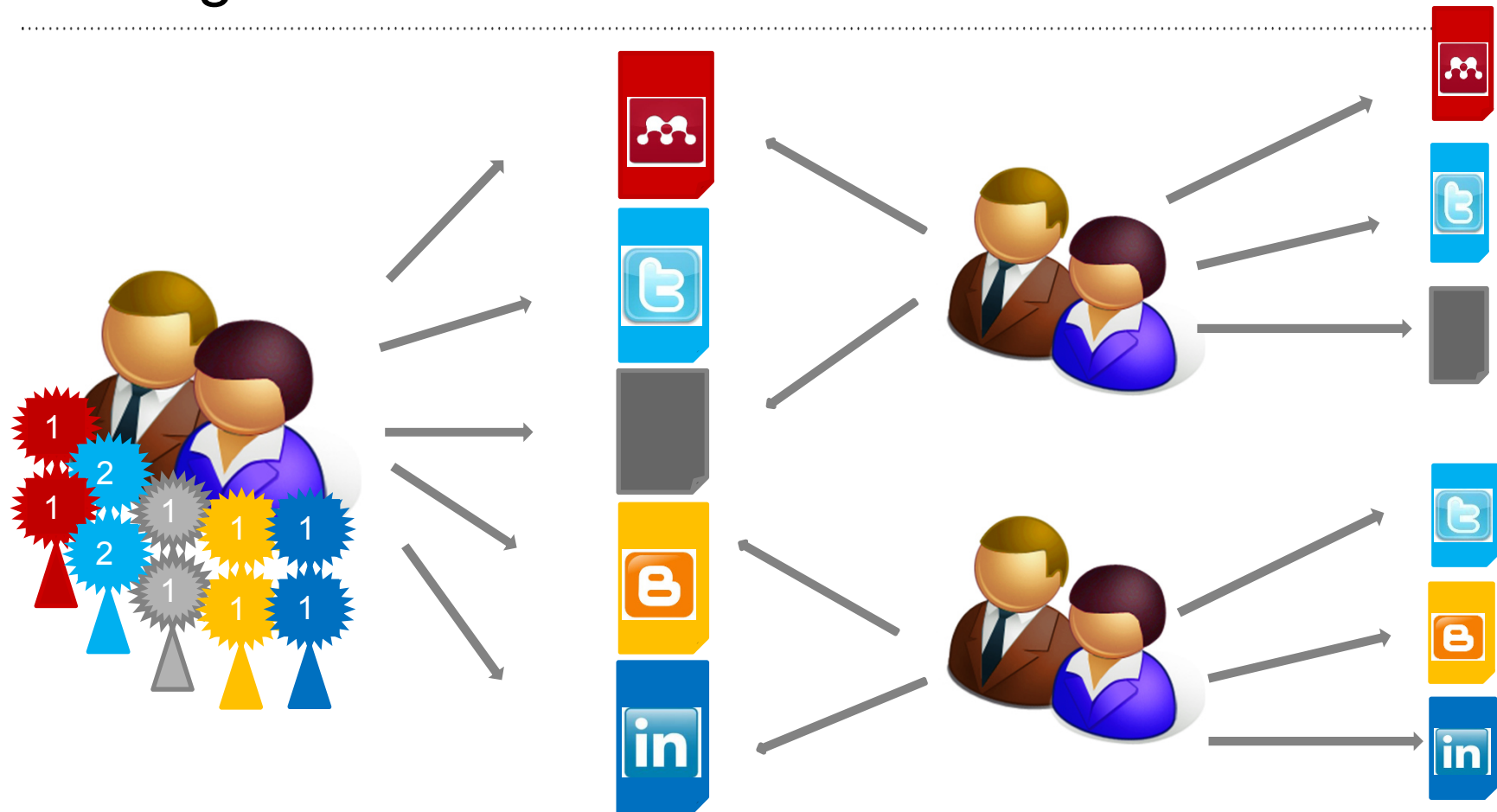
- Mai 2016
- Directorate-General for Research & Innovation
- DOI: 10.2777/061652



Lösung I: Altmetrics – enge Sicht



Lösung II: Altmetrics – breite Sicht



*metrics Forschung

Social Media Metrics

Open Metrics

Usage Metrics

Altmetrics in der Praxis

Webometrics?

Article Level Metrics

tweetations

NISO Working Group
Alternative Assessment Metrics (Altmetrics) Initiative

- Use cases
- Definitions
- Calculation
 - Quality
 - ...

*metrics Forschung: Zentrale Fragen

- Was ist der Zusammenhang zwischen Social Media und Zitationen?
- Wie unterscheiden sich die *metrics von einander?
- Warum werden Artikel getweetet, gebookmarkt, geliked...?
 - Was bedeuten *metrics? Welchen Wert haben sie?
 - Wer tweetet (liked, bookmarkt...) wissenschaftliche Artikel?
- Wie unterscheiden sich *metrics zwischen den Disciplinen?
- Theorie?

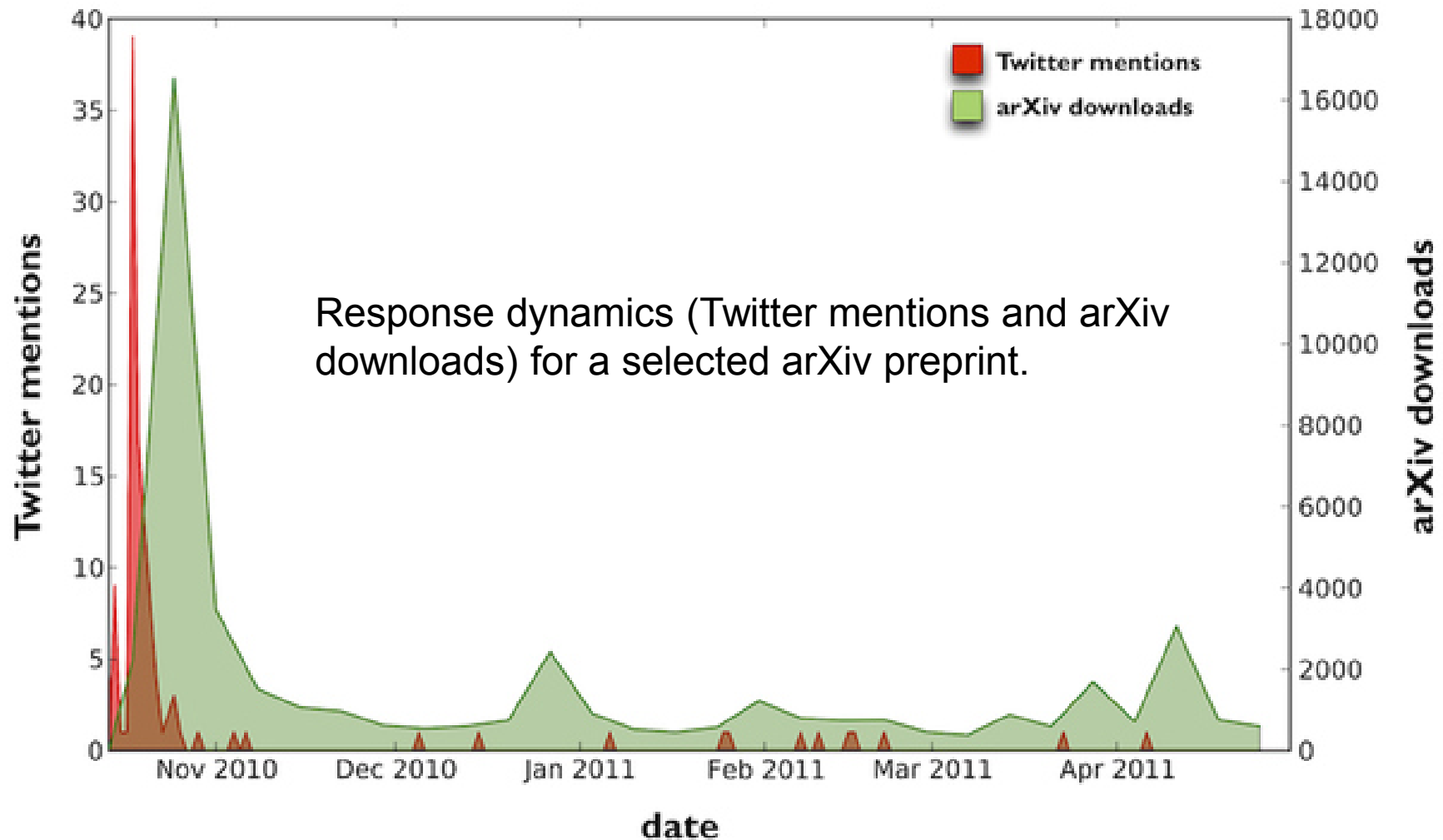
- **Aber:** Fast ausschließlich enge Sicht in der Forschung!!!

Haustein, S., & Larivière, V. (2013). Empirical Analysis of Social Media in Scholarly Communication. Overview of current altmetrics research projects at University of Montreal. Presentation at GESIS.

*metrics Forschung I

Shuai, Pepe, & Bollen (2012)

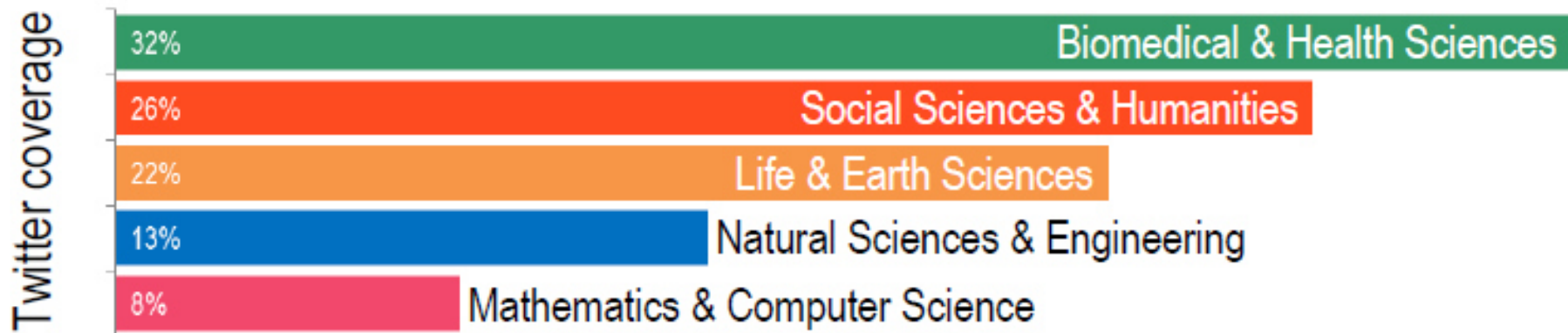
- Altmetrics sind schnell



*metrics Forschung II

Haustein (2015)

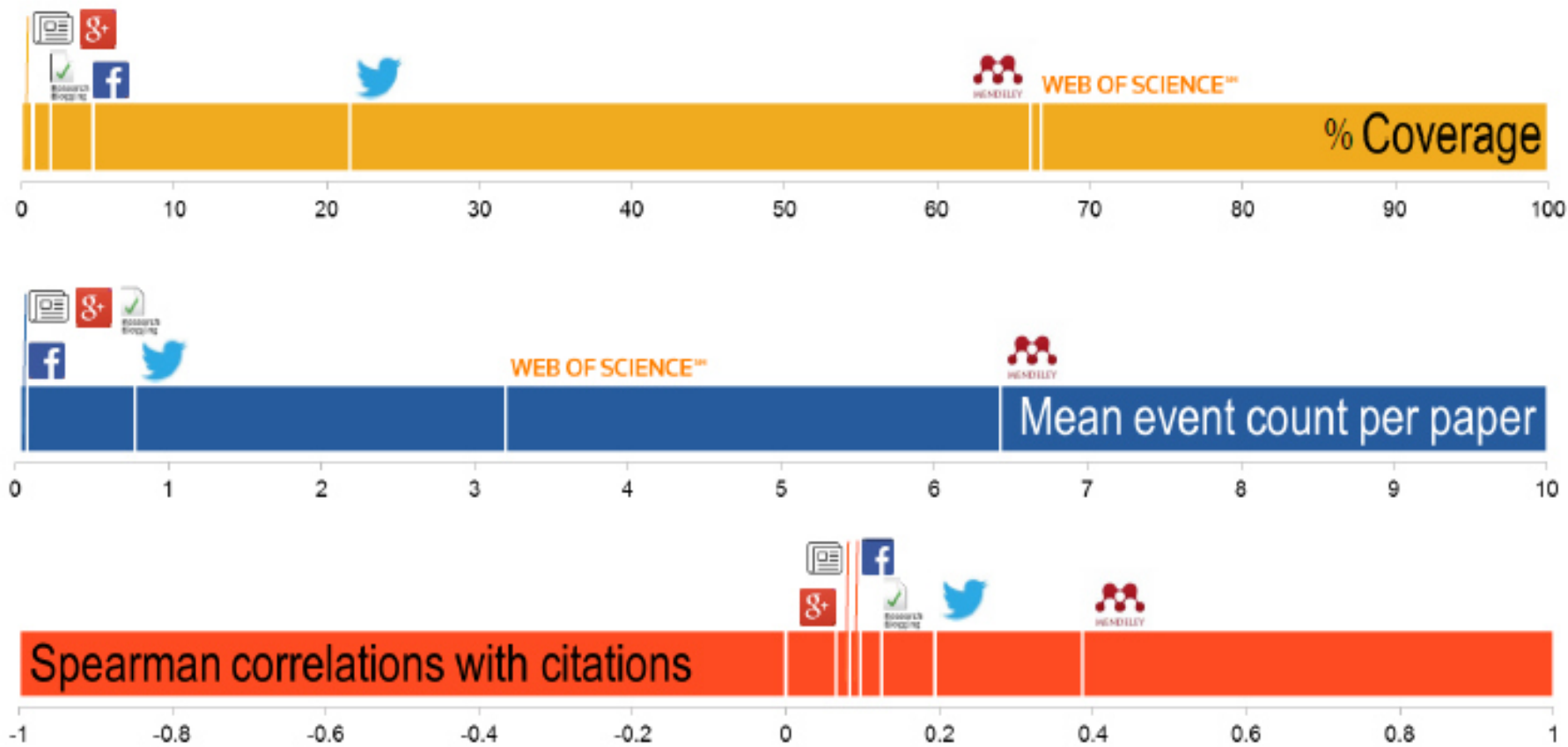
- *metrics sind disziplinabhängig



*metrics Forschung III

Haustein (2015)

- *metrics verhalten sich wie Zitationen, oder auch nicht



Haustein, S., Larivière, V., Thelwall, M., Amyot, D., & Peters, I. (2014). Tweets vs. Mendeley readers: How do these two social media metrics differ? *IT - Information Technology*, 56(5), 207–215. (for Mendeley reader counts only; 2010–2012 PubMed/WoS papers)

Haustein, S., Costas, R. & Larivière, V. (2015) Characterizing social media metrics of scholarly papers: The effect of document properties and collaboration patterns. *PLoS ONE*, 10(5), e0127830. (for all metrics except Mendeley reader counts: 2012 WoS papers with a DOI)

*metrics Forschung IV

Haustein et al. (2014e)

- Wer produziert altmetrics?
- Spamming und Bots

account type	number (%) of accounts	tweets	mean followers	mean following	% of 50,068 tweets
platform feed (bot)	43 (84.3%)	87,389	34.9	0.6	8.8%
topic feed (bot)	4 (7.8%)	10,040	527.0	491.5	0.1%
selective/qualitative	4 (7.8%)	3,081	361.8	50.5	1.0%
	51 (100%)	100,510	99.1	43.0	9.9%



arXiv hep-ex @hep_ex · 14h

[1406.5171] CMS Collaboration : Search for excited quarks in the photon+jet final state in proton-proton collisi...

arxiv.org/abs/1406.5171

High Energy Physics - Experiment

Search for excited quarks in the photon+jet final state in proton-proton collisions at $\sqrt{s} = 8$ TeV

CMS Collaboration

***metrics besser verstehen
und Empfehlungen zur
Nutzung geben**

Arbeitsgruppenaktivitäten I



EU Expert Group on Altmetrics (bis Ende 2016)

- DG Research and Innovation
- Altmetrics is a main topic of the European Open Science Agenda which will be further developed and implemented with support of the Open Science Policy Platform
- **Themen:**
- Categorise and review different altmetrics and their relationship to more established scientometrics
- Define the features of a 'responsible metrics' aimed at a responsible use of altmetrics to advance open science, able to track desirable impacts, and qualities of scientific research
- Develop an agenda for the development of such a 'responsible metrics'

http://ec.europa.eu/research/openscience/index.cfm?pg=altmetrics_eg

Arbeitsgruppenaktivitäten I



EU expert group members

James Wilsdon, University of Sheffield (chair);

Judit Bar-Ilan, Bar-Ilan University;

Robert Frodeman, University of Texas;

Elizabeth Lex, Graz University of Technology;

*Isabella Peters, ZBW Leibniz Information Centre for
Economics;*

Paul Wouters, Leiden University

*Team Leader-Open science policy coordination and
development: Rene von Schomberg*

Arbeitsgruppenaktivitäten II



Ligue des Bibliothèques Européennes de Recherche
Association of European Research Libraries

LIBER Working Group on Metrics (bis Juni 2017)

- Scholarly Communication and Research Infrastructures Steering Committee
- exchange best practices
- develop recommendations for the optimal use of metrics in research libraries and information infrastructures
 - regardless of its size, budget or experience level
- possibilities for Open Metrics and what this can entail

<http://libereurope.eu/strategy/strategic-direction-1-enable-open-science/wg-metrics/>

Arbeitsgruppenaktivitäten II



Ligue des Bibliothèques Européennes de Recherche
Association of European Research Libraries

LIBER Working Group on Metrics (bis Juni 2017)

- Prof Dr [Isabella Peters](#), ZBW Leibniz Information Centre for Economics, Germany (co-chair)
- Ms [Sarah Coombs](#), Saxion University of Applied Sciences, Netherlands (co-chair)
- Dr [Kasper Abcouwer](#), University of Amsterdam, Netherlands
- Dr [Isidro F. Aguillo](#), Cybermetrics Lab, CSIC, Spain
- [Nathalie Cornée](#), Information Research Analyst and LSE Open Access Officer, LSE Library, London
- Dr Ellen Fest, Wageningen University, Netherlands
- Dr [Juan Gorraiz](#), University Library Vienna, Austria
- Dr [Stefanie Haustein](#), University of Montréal, Canada
- Dr [Kim Holmberg](#), University of Turku, Finland
- [Najko Jahn](#), Project Coordinator and Innovation Management Officer, University of Bielefeld, Germany
- Dr [Peter Kraker](#), KNOW-CENTER, Austria
- Dr [Ania Lopéz](#), University of Duisburg-Essen, Germany
- [Marc Martinez](#), University III Lyon, France
- [Alenka Princic](#), Head of Research Support, Delft University of Technology Library, Netherlands
- Ms [Susan Reilly](#), Executive Director, LIBER Europe, Netherlands
- Dr [Birgit Schmidt](#), University of Goettingen, Germany

<http://libereurope.eu/strategy/strategic-direction-1-enable-open-science/wg-metrics/>

Ergebnisse der Arbeitsgruppen



Call for Evidence: June 13th-July 13th, 2016

Chapters of the report for the EC

Next generation metrics for open science

- Altmetrics fit within the broader EC vision & agenda for open science?
- Key policy opportunities and tensions?
- Role of the EU play in wider international debates?

Altmetrics: the emerging state of the art

- How to best categorise the current landscape for (alt)metrics?
- Robustness of altmetrics?
- New problems and pitfalls? Key questions?

Altmetrics in policy & practice

- How are altmetrics used in the EU?
- What roles do they play?
- Best practices?

Data infrastructures & standards

- What data infrastructure is required?
- Challenges of openness, transparency & ownership?
- Develop and improve standards? Role of EU?

Cultures of counting: metrics, ethics, & research

- How are new metrics changing research cultures?
- To what extent inhibit or encourage interdisciplinary research and wider societal impacts?

Next generation metrics: the way forward

- What can the EC do specifically to advance responsible metrics?

Answers to Call for Evidence

Respondents N =20, 19 valid responses



companies: 1



individuals: 4



publishers: 4



research
institutions: 4



associations, learned
societies: 6

Answers to Call for Evidence

Respondents N =19

Countries

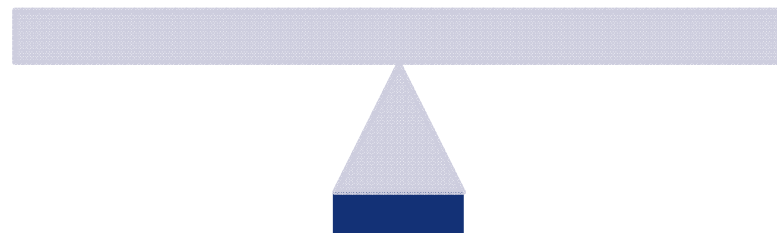
- 1 = Sweden, Switzerland, Poland, Romania, Belgium, Netherlands
- 3 = Germany, France
- 7 = UK





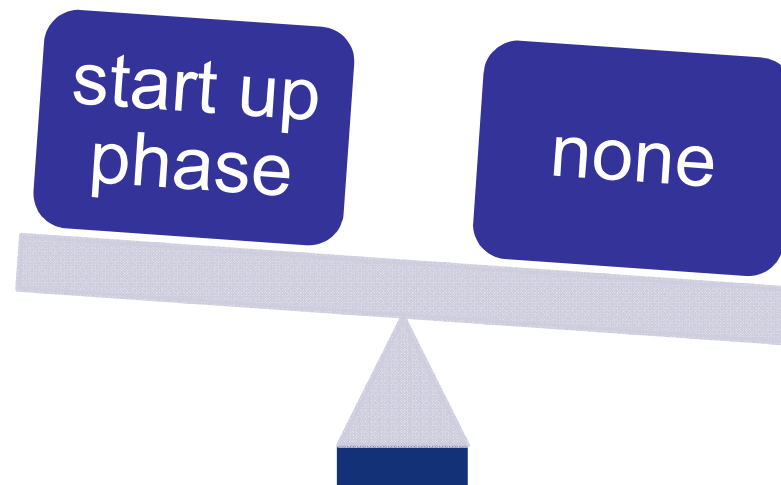
Answers to Call for Evidence

Which EU member states are using altmetrics & in what ways?



Answers to Call for Evidence

Which EU member states are using altmetrics
& in what ways?



Answers to Call for Evidence

Reasons for not using altmetrics

no dynamics
skewness of data
no substitute for peer review
limited uptake of social media
biases
misuse gaming
flatten science
no standards
closed metrics
no one-fits-all
lack of reproducibility
not well studied
need to keep pace
never neutral
do not acknowledge diversity
what to infer
misleading term
citations are gold-standard





Answers to Call for Evidence

Potential for altmetrics

research emergencies
trending topics
foresight vision
addition to citations
post-hoc assessment
self-assessment
information about users & beneficiaries
acknowledge diversity
faster
applicable to various research outputs & activities
options for text and data mining
public engagement
policy relevance
budget allocation
interdisciplinarity
track dissemination of concepts & results
author-level metrics
impact on society & economy





Answers to Call for Evidence

How to make metrics work? Prerequisites

full access for everybody
individual responsibility
developed & validated by community
transparency
open data
social contract
intensify usage of tools
reduce risk of gaming
reliability
serve needs of academia & society
legal & technical support
reproducibility
cultural change
interoperability & cooperation
persistent identifiers
responsible & trained users





Answers to Call for Evidence

Conclusions

- › Metrics are drivers + outcome of open science
 - › Should be integrated into the reward system of science
 - › Rewards for behaviour related to open science
 - › Way to promote open science

- › Research on research needed
 - › There is no alternative for qualitative assessment, such as peer review
 - › Stop using inappropriate metrics (M.Taylor, Digital Science)

- › Culture of evaluation needed (C. Neylon)





Answers to Call for Evidence

Conclusions

- › EU should lead by example
 - › Develop flanking policy to reach goals of open science
 - › Use Goodhart's Law for you – but do not increase burden

- › If closed shop → no open science
 - › Open data and transparency on all levels
 - › Ensure reproducibility and audit of data & methods
 - › Tear down walled (proprietary) gardens



Answers to Call for Evidence

Conclusions

- › EU should lead by example
 - › Develop flanking policy to reach goals of open science
 - › Use Goodhart's Law for you – but do not increase burden
- › **If closed shop → no open science**
 - › Open data and transparency on all levels
 - › Ensure reproducibility and audit of data & methods
 - › Tear down walled (proprietary) gardens

Arbeitsgruppenaktivitäten II

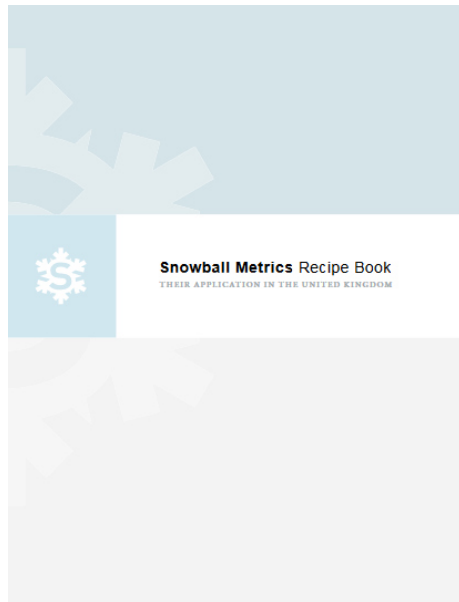


responsiblemetrics.org

Responsible metrics

- Robustness: basing metrics on the best possible data in terms of accuracy and scope;
 - Humility: recognizing that quantitative evaluation should support – but not supplant – qualitative, expert assessment;
 - Transparency: keeping data collection and analytical processes open and transparent, so that those being evaluated can test and verify the results;
 - Diversity: accounting for variation by field, using a variety of indicators to reflect and support a plurality of research & researcher career paths;
 - Reflexivity: recognizing the potential & systemic effects of indicators and updating them in response.
-

Arbeitsgruppenaktivitäten II

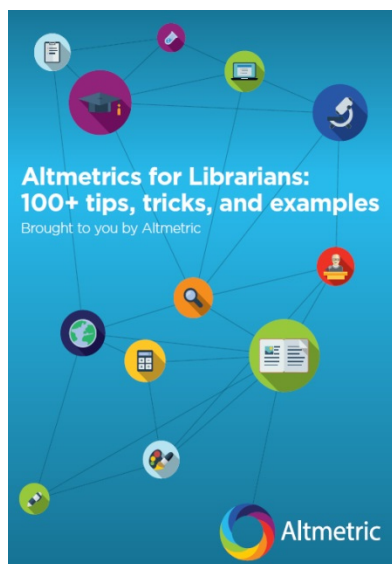


snowballmetrics.com

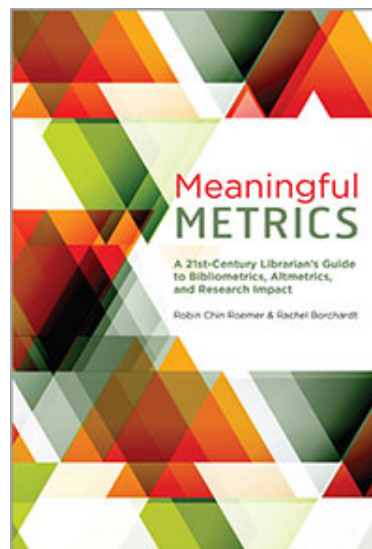
Snowball Metrics

- The Snowball Metrics project partners commit to publish the methodologies for agreed and tested Snowball Metrics without applying any charges, so that any organization will be able to use the framework for their own purposes.
- Agreeing methodologies, which can be consistently applied to research management information, creates consistency and facilitates benchmarking between peer institutions.
- “Always use at least two indicators for assessments”.

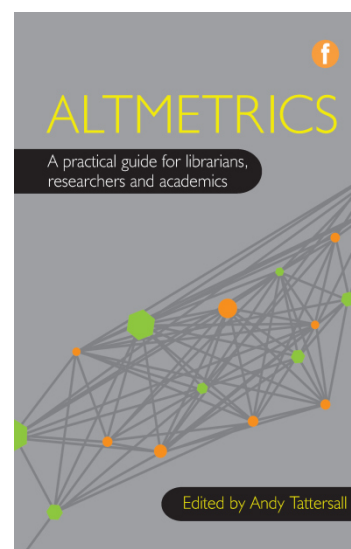
Arbeitsgruppenaktivitäten II



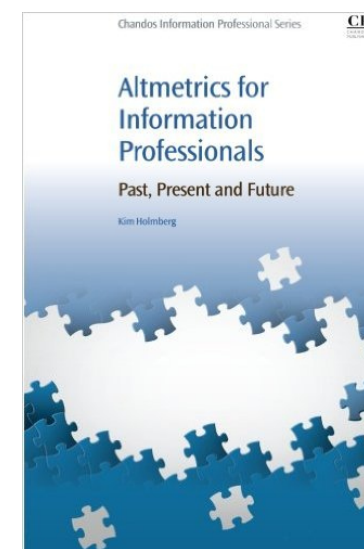
altmetric.com/libraries-ebook



ISBN-13: 978-0-8389-8755-1

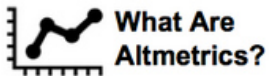


ISBN-10: 9781783300105



ISBN-13: 978-0081002735

Arbeitsgruppenaktivitäten II



Home What are altmetrics? Who uses altmetrics? V

www.whatarealtmetrics.com

libraryconnect.elsevier.com/sites/default/files/ELS_LC_metrics-poster_June-23-2016.pdf

Librarian Quick Reference Cards for Research Impact Metrics

Find a printable version of larger cards on www.libraryconnect.com

Metrics illuminate the impact of research outputs. When meeting with students, researchers, deans or department heads, the metrics — found on Elsevier products or via other sources — on these quick reference cards can help you see

PRIORITIZE READING Impact per Publication Indexed Impact Factor Citation Index Proprietary benchmarks	RECOMMEND WHERE TO PUBLISH Impact per Publication JCR, SCImago Journal Rank Citation Index Journal Impact Factor	ADD TO ONLINE RESEARCHER PROFILES A badge Proprietary benchmarks Citation Index Citation Index Journal Impact Factor Citation Index	ENRICH PROMOTION & TENURE PORTFOLIO A badge Proprietary benchmarks Citation Index Citation Index Journal Impact Factor Citation Index	DEVELOP COLLECTIONS Impact per Publication JCR, SCImago Journal Rank Citation Index Journal Impact Factor Citation Index	RECOMMEND A COLLECTION OF RESEARCH OUTPUTS Proprietary benchmarks Citation Index Citation Index Journal Impact Factor Citation Index
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DOCUMENT | AUTHOR | JOURNAL | *Denotes the definitions used to primary document types such as journal articles, books, and conference papers. See Scopus Content Coverage Guide (page 4) for a full list of document types. <http://www.scopus.com>

CITATION COUNT
of citations received over publication
Attributed measure of attention for a specific article, book

DOCUMENT COUNT
of items published by an individual or group of individuals
Builds the growth of an ORCID ID
Open Access Researcher ID

FIELD-WEIGHTED CITATION IMPACT (FWCI)
of citations received by a document
of citations in the same field
Weighted documents are given the same weight as the number of citations they receive and the weight of the citation. The FWCI is a measure that the impact of a paper is weighted against the field average. When the score is greater than 1.00, it indicates above average influence, and less than one below average influence.

IUPUI University Library Center for Digital Scholarship: Metrics for Scholarly Products

Metric	How Calculated	Update Frequency	Source	Keep in mind	Use it For
Journal Impact Factor (JIF)	Calculated annually from average number of citations received per paper during the 2 preceding years Calculation is based only on journals indexed by Thomson Reuters (citation-based)	Full year's data necessary before calculating 2011-2012 data will not be ready until summer 2013	Proprietary algorithm Publisher (JCR) http://www.journals.org/journal	Journal level metric	To compare journals in which to
Eigenfactor Score	Based on the number of times articles from the journal published in the past five years have been cited in the JCR year and takes into account which (highly cited or less highly cited) journals have contributed to these citations Journal self-citations are removed (citation-based)	Updated with each new release of JCR Impact Factors	Algorithmic website http://www.eigenfactor.org Publisher (Eigenfactor)		
Article Influence Score	Calculated from the journal's Eigenfactor Score divided by the normalized fraction of all articles published in all journals. The mean score is 1.00, greater than 1.00 indicates above average influence, and less than one below average influence. (citation-based)	Updated with each new release of JCR Impact Factors	Algorithmic website http://www.eigenfactor.org Publisher (Eigenfactor)		

the Bibliomagician

Comment & practical guidance from the LIS-Bibliometrics community

Home About the Group Committee Resources Useful Information

thebibliomagician.wordpress.com

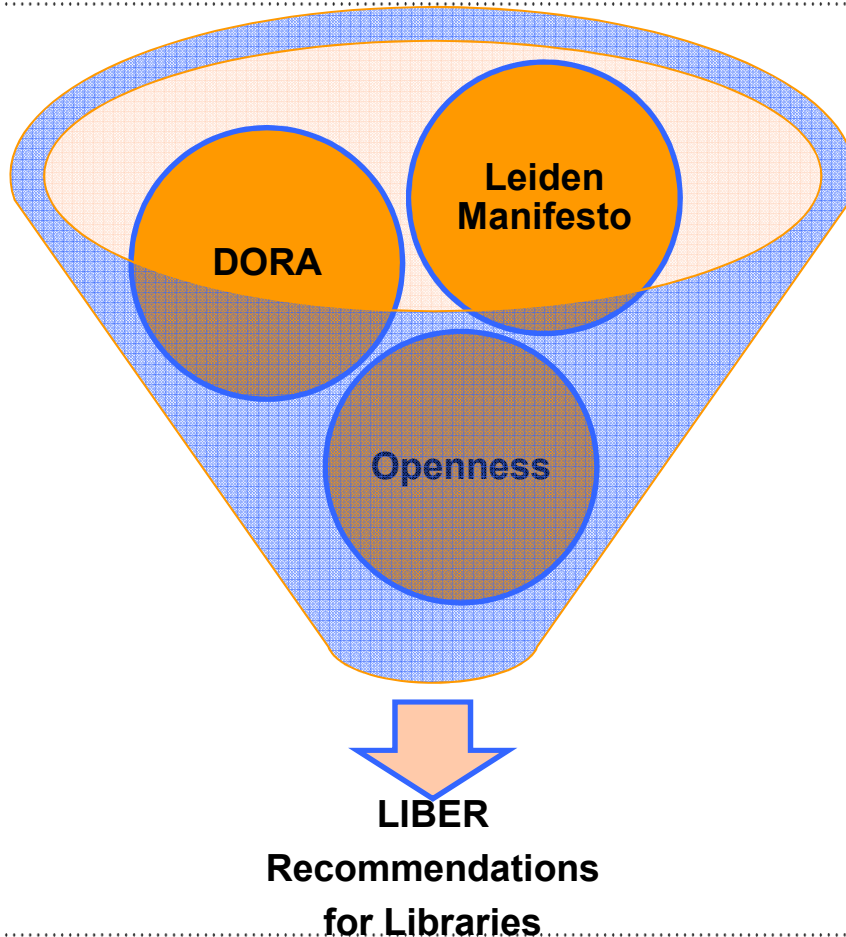
About the Group

The *Bibliomagician* is the blog run by members of the [Lis-Bibliometrics](#) Committee, responsible for overseeing the activities of the Lis-Bibliometrics Forum on Jiscmail. Lis-Bibliometrics was set up in 2010, with a particular focus on supporting LIS (Library and Information Science) professionals with the increasing volume of bibliometric queries and training they were called upon to deliver. Increasingly, members are joining from other settings – such as Research and Planning Offices – too. A list of current Committee members (with short biographies) is available on the [Meet the Committee](#) page.

slideshare.net/goldenphizzwizards/documenting-excellence-metric-comparison20150515



Arbeitsgruppenaktivitäten II



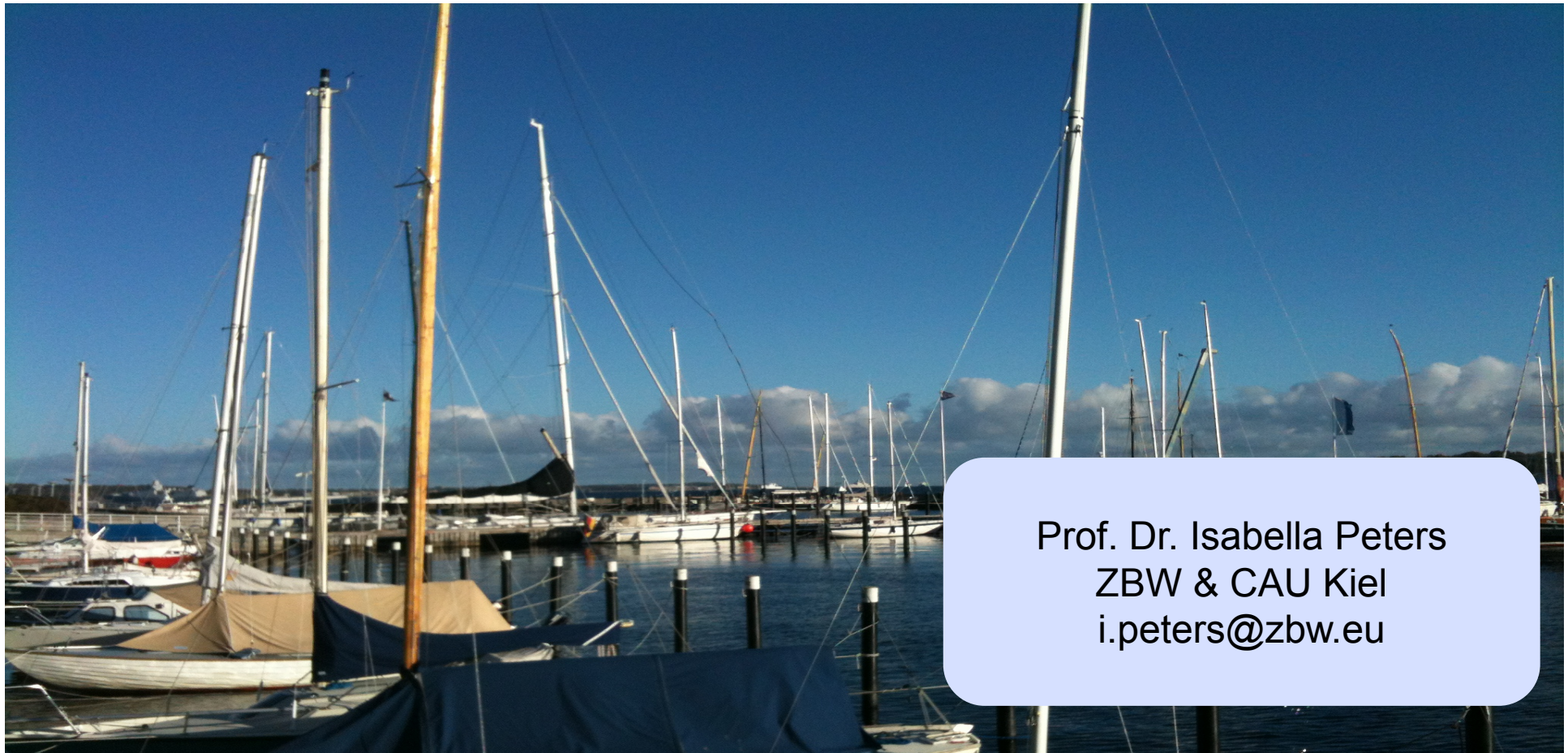
Vorgehen:

- Bewertung, ob relevant für Bibliotheken
- Wie umzusetzen?
- Welche offenen Datenquellen können genutzt werden?

Ergebnisse:

- Workshop bei LIBER 2017 in Patras
- Artikel in Special Issue von Digital Library Perspectives

Vielen Dank! Fragen?



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ZBW & CAU Kiel
i.peters@zbw.eu