Let's All Agree on What We're Counting and How:

Progress on standards for new metrics in scholarship

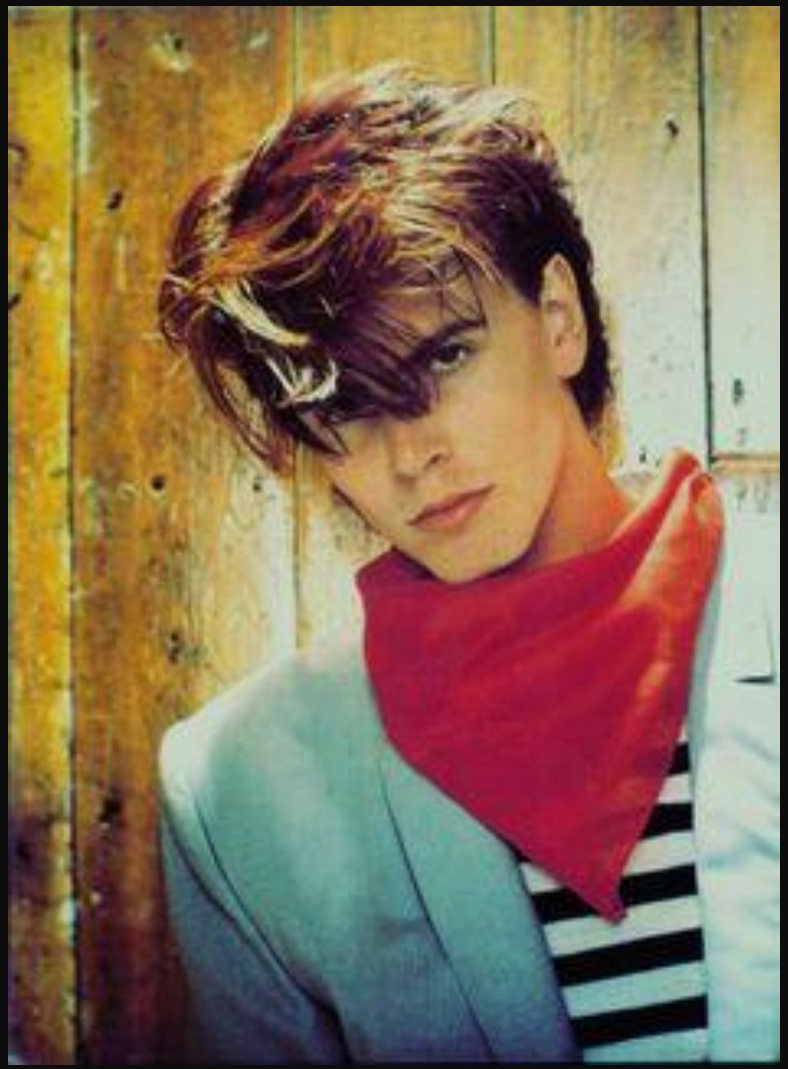
Todd A. Carpenter
Executive Director, NISO
@TAC_NISO
August 19, 2015

About NISO

How the information world CONNECTS

- Non-profit industry trade association accredited by the American National Standards Institute
- Mission of developing and maintaining technical standards related to information, documentation, discovery and distribution of published materials and media
- Volunteer driven organization: 400+ contributors spread out across the world
- Responsible (directly and indirectly) for standards like ISSN, DOI, Dublin Core metadata, DAISY digital talking books, OpenURL, MARC records, and ISBN

1980s Alternative



John Taylor,
Duran Duran

Since Jason Priem coined the term "altmetrics"

- There have been some 1,170 articles and posts (per Google Scholar) on the topic of altmetrics
- There have been eight altmetrics conferences
- There are now at least four companies focused on providing altmetrics-style analytics

When it becomes a standard, its just not “alterative” any more…

But what's the value in counting Tweets and Facebook likes?

More than just popularity

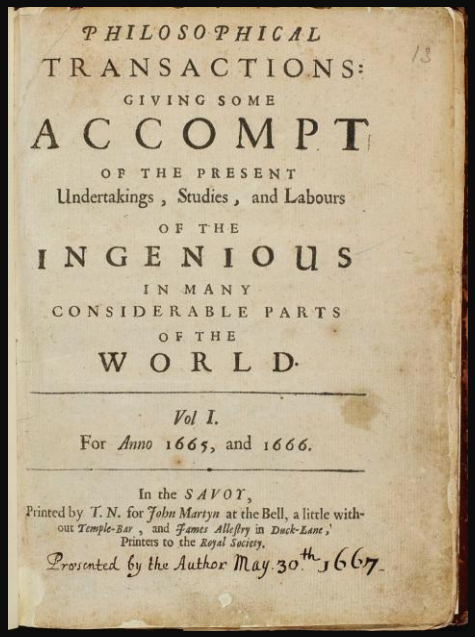
Research is pointing to the fact that there is a modest positive correlation between early-signal metrics (altmetrics) and later-signal metrics (citations)

Do altmetrics correlate with citations? Extensive comparison of altmetric indicators with citations from a multidisciplinary perspective **by** Rodrigo Costas, Zohreh Zahedi, Paul Wouters

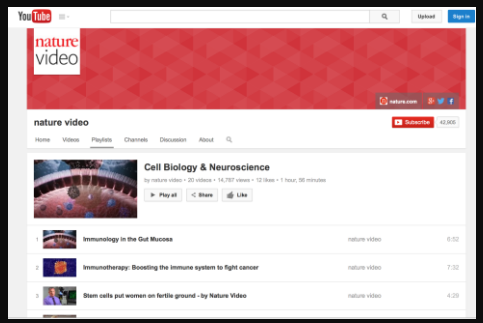
Do Altmetrics Work? Twitter and Ten Other Social Web Services by Mike Thelwall , Stefanie Haustein, Vincent Larivière, & Cassidy R. Sugimoto

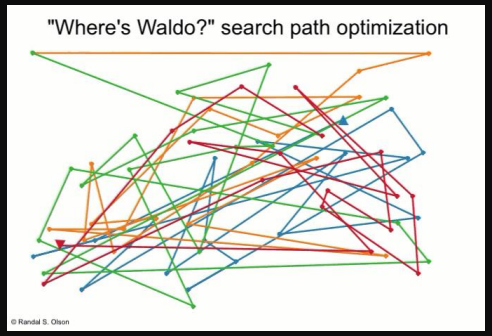
(2006) Earlier web usage statistics as predictors of later citation impact by Brody T, Harnad S & Carr L

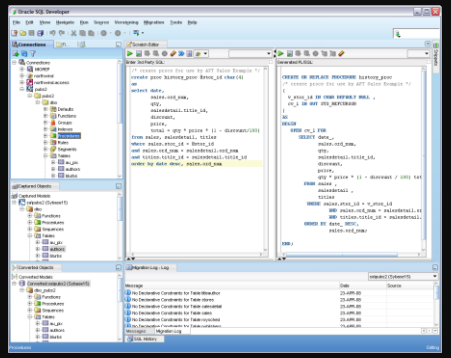
More importantly: Scholarship today is much more than journals


PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.
Vol I.
For Anno 1665, and 1666.
In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane,
Printers to the Royal Society.
Presented by the Author May 30th 1667.

The United States of America
The Commissioner of Patents and Trademarks
United States Patent

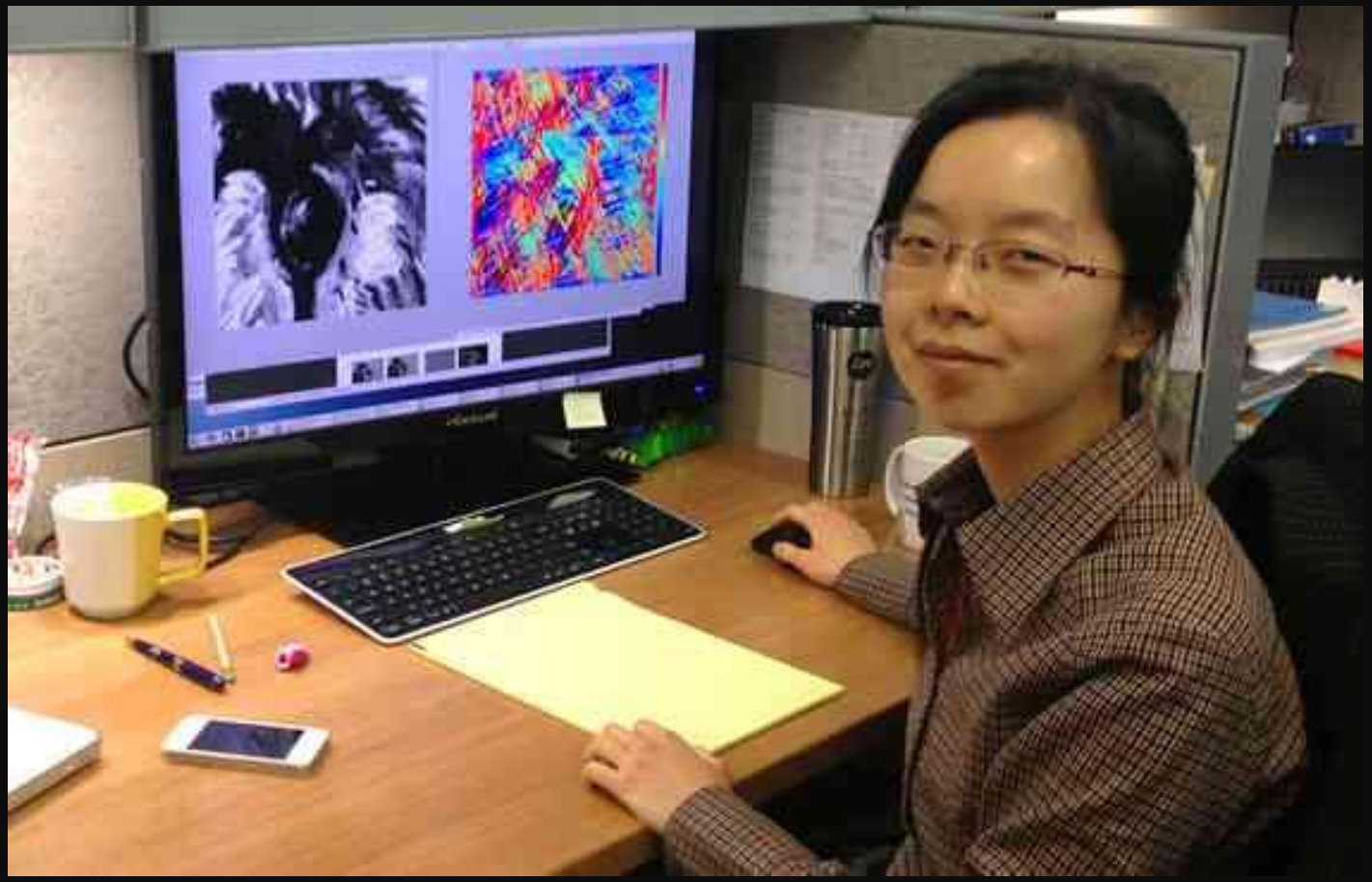






How do we measure the impact of these different forms of output?

Would a researcher focus on only one data source or methodological approach?

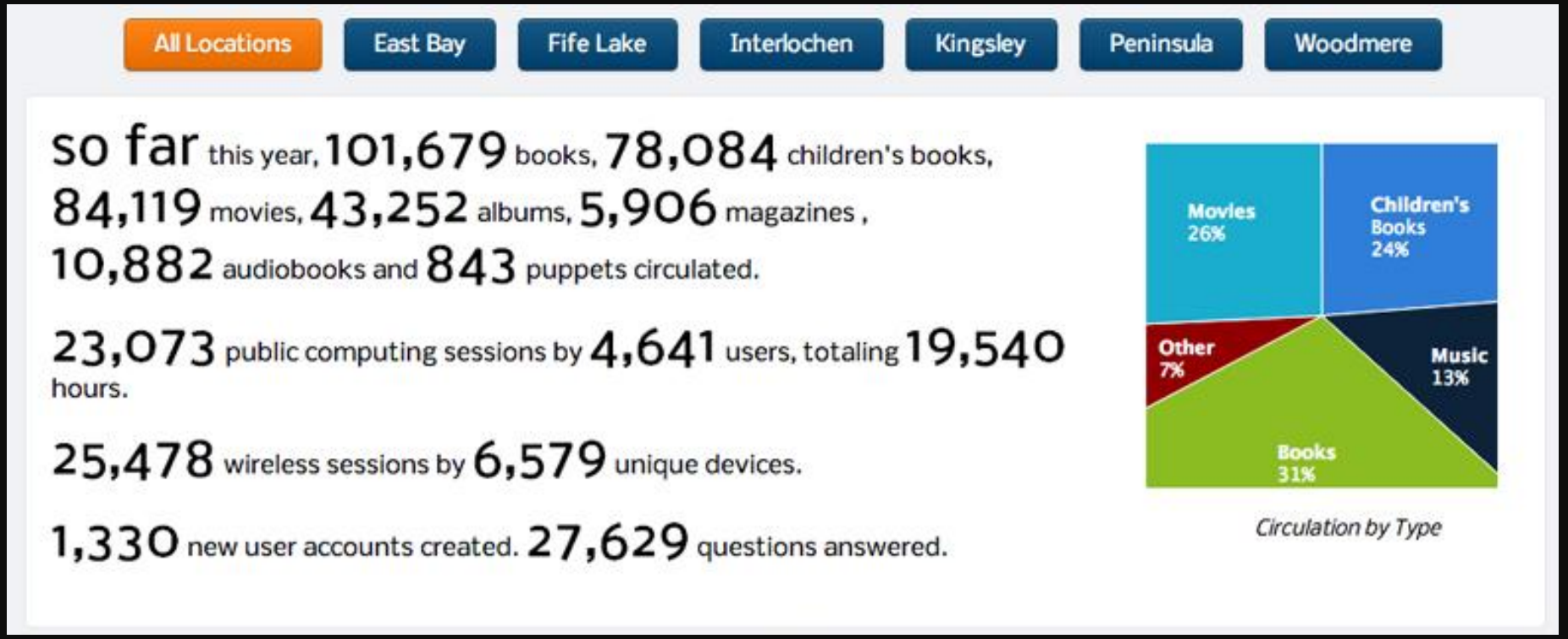


Duke University - Information Initiative at Duke (IID)

There aren't metrics and "altmetrics"; there are only metrics!

We have been using non-citation-based metrics for decades

COUNTER Counting Online Usage of NeTworked Electronic Resources



Traverse Area District Library (TADL)

What has changed
is our ability to
collect and analyze data
in new ways

=

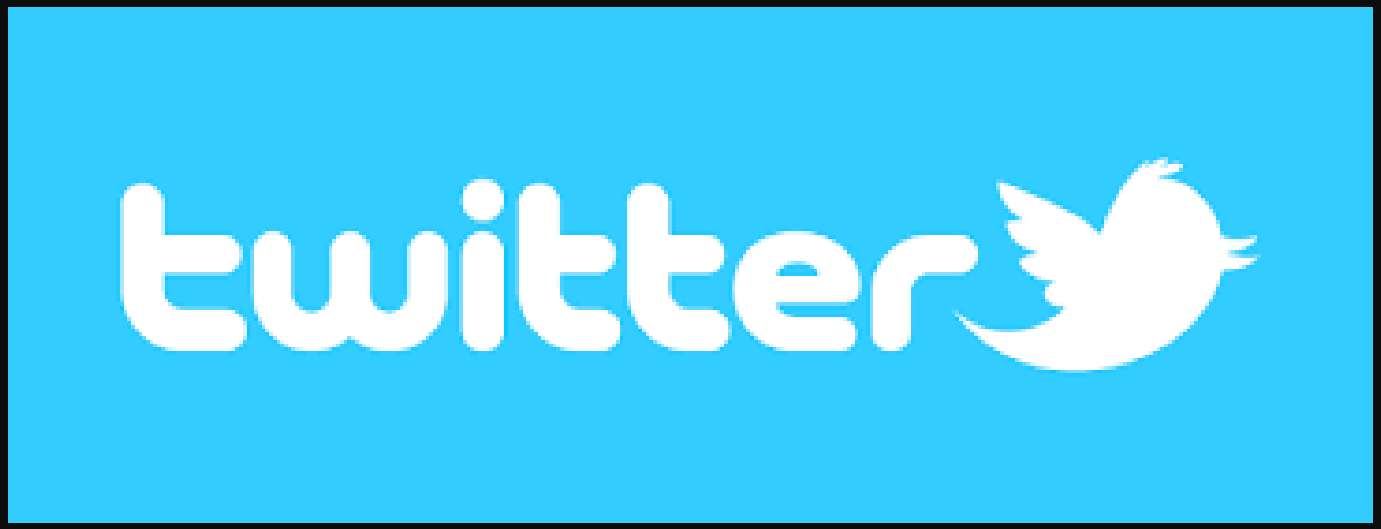
What are we lacking?

=

TRUST

Different totals isn't necessarily a sign of an error

Simply because two methods of calculation don't yield the same result doesn't mean that something nefarious is going on



Inconsistency on Twitter? Who knew?

For Details see: Zhiwu Xie's (Virginia Tech) Lightening Talk: Twitter Inconsistency

What are the elements of metrics that we need to build trust?

Definitio n

metric

noun | met·ric | \'me-trik\

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Definition of METRIC

1 *plural* : a part of prosody that deals with metrical structure

2 : a standard of measurement <no *metric* exists that can be applied directly to happiness — *Scientific Monthly*>

True or False? **Play our trivia game for a fun break.** »

3 : a mathematical function that associates a real nonnegative number analogous to distance with each pair of elements in a set such that the number is zero only if the two elements are identical, the number is the same regardless of the order in which the two elements are taken, and the number associated with one pair of elements plus that associated with one member of the pair and a third element is equal to or greater than the number associated with the other member of the pair and the third element

Examples of METRIC

<according to the usual *metrics* by which we judge fiction, this novel is an utter failure>

Origin of METRIC

Greek *metrikē*, from feminine of *metrikos* in meter, by measure, from *metron* measure — more at measure

First Known Use: 1760

Related to METRIC

Identificatio n

ORCID

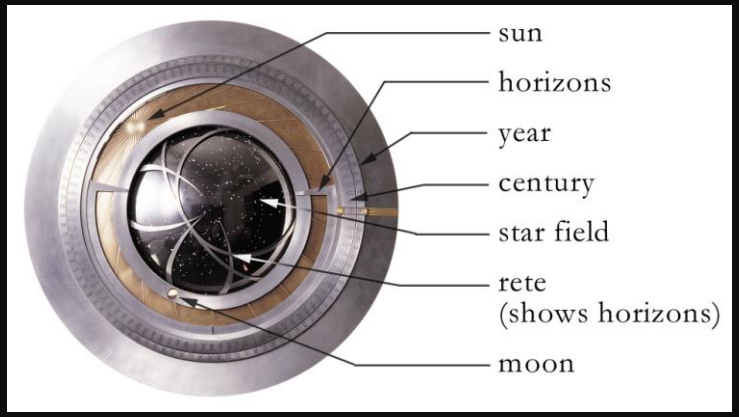
isni

fundref

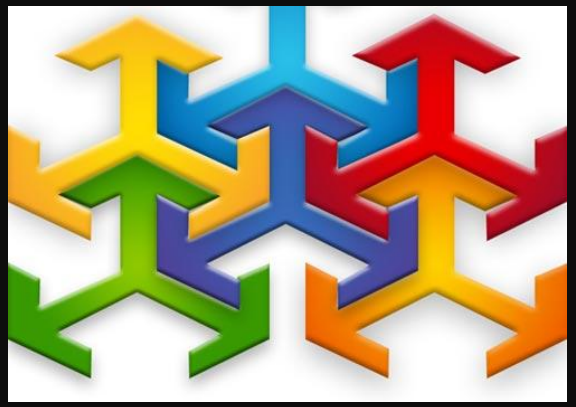
doi®

Granularity

Time Scale



Exchange



I often sound like a broken record

- Defining what is to be counted = standards
- How to describe what to count = standards
- Identification of what to count = standards
- Procedures for counting or not = standards
- Aggregating counts from network = standards
- Exchange of what was counted = standards

Phase I Discussion Forums

NISO Alternative Assessment Metrics Initiative

ALFRED P. SLOAN FOUNDATION

Phase 1: Brainstorm

NISO
How the information world CONNECTS

Phase 1 Meetings

October 9, 2013 - San Francisco, CA

December 11, 2013 - Washington, DC

January 23-24, 2014 - Philadelphia, PA

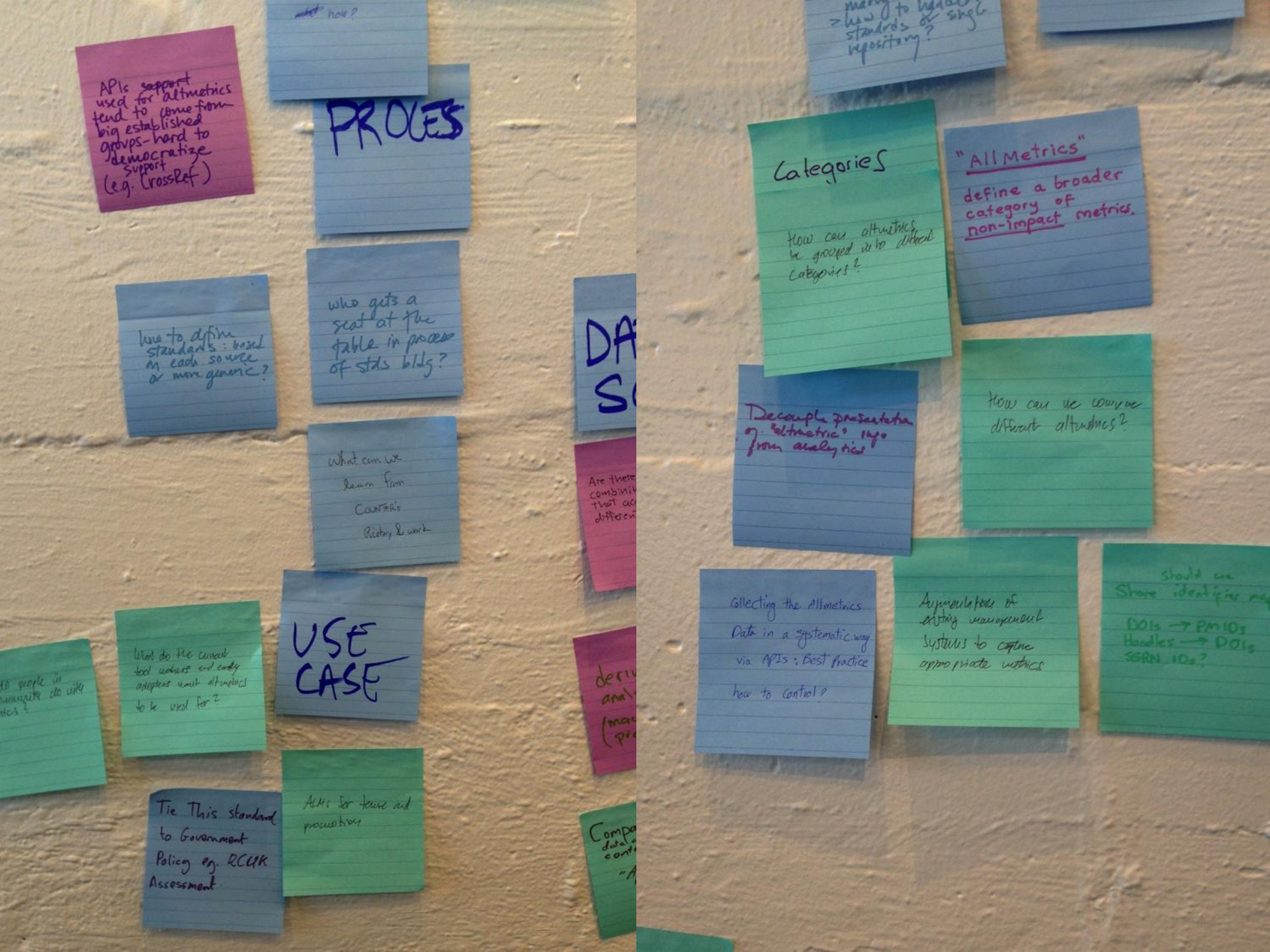
Round of 1-on-1 interviews – March/Apr

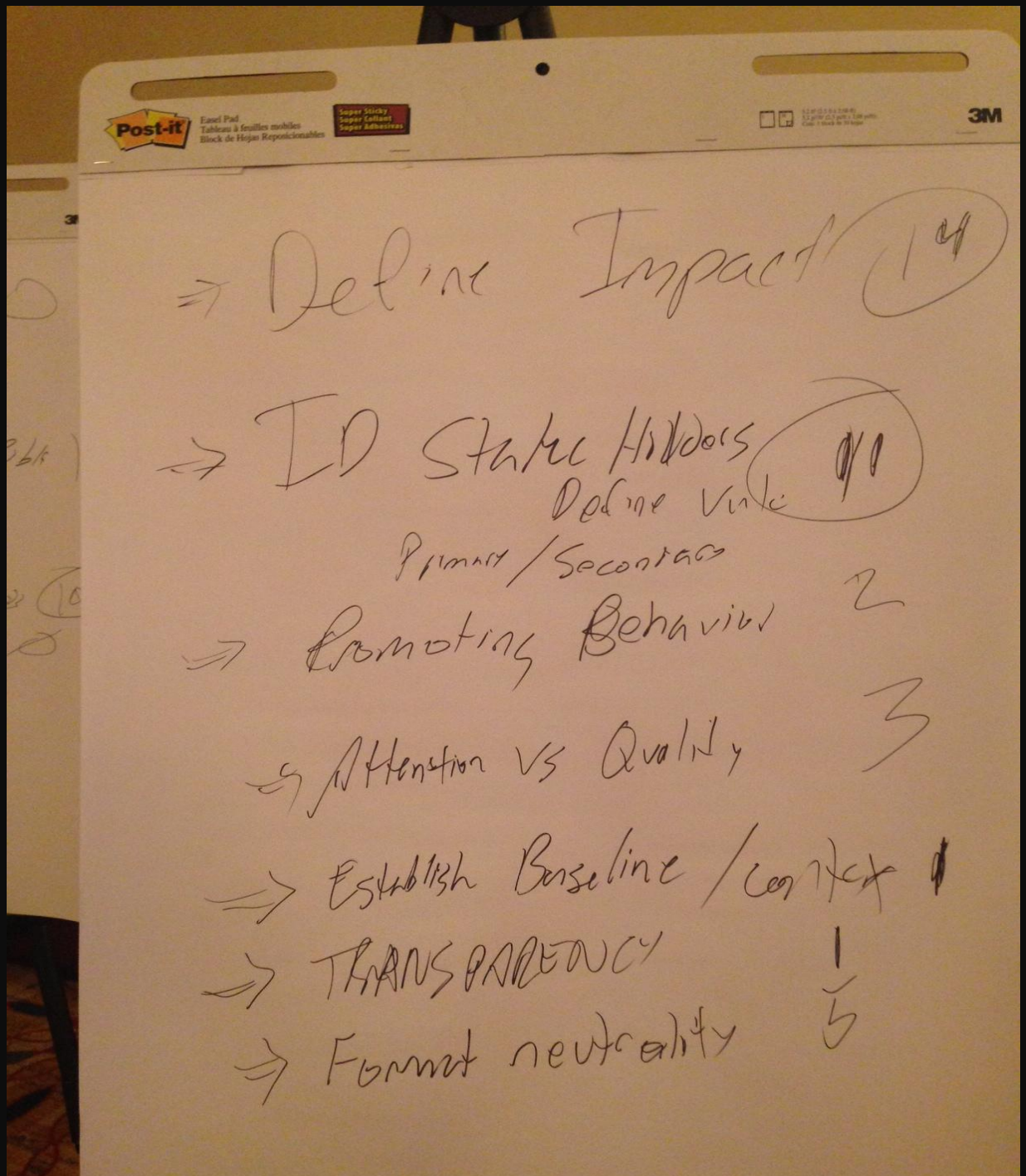
Phase 1 report published in June 2014

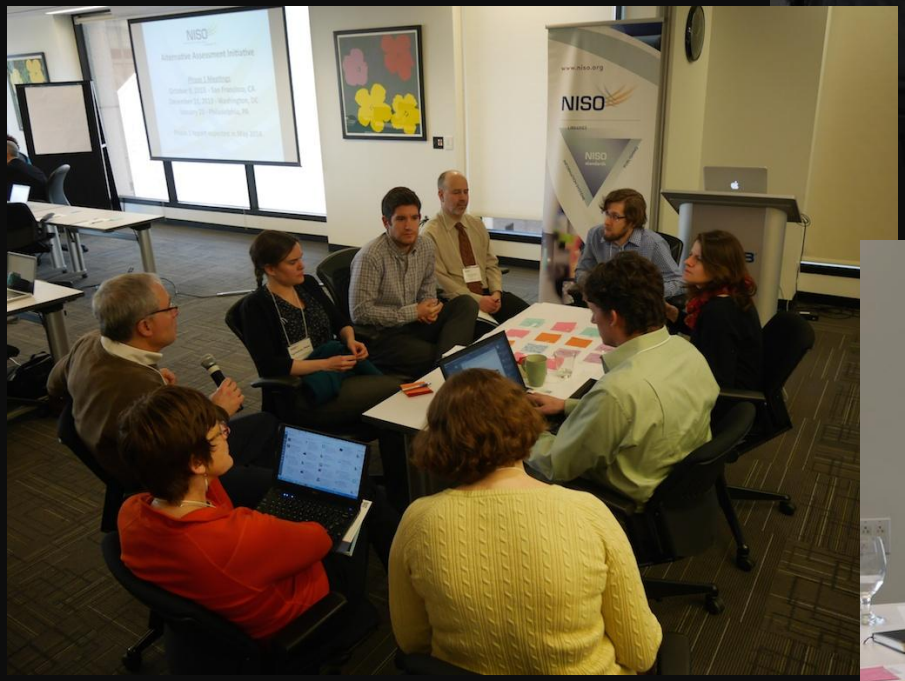
Meeting Lightning Talks

- Expectations of researchers
- Exploring disciplinary differences in the use of social media in scholarly communication
- Altmetrics as part of the services of a large university library system
- Deriving altmetrics from annotation activity
- Altmetrics for Institutional Repositories: Are the metadata ready?
- Snowball Metrics: Global Standards for Institutional Benchmarking
- International Standard Name Identifier
- Altmetric.com, Plum Analytics, Mendeley reader survey
- Twitter Inconsistency

"Lightning" by snowpeak is licensed under CC BY 2.0


APIs support used for altmetrics tend to come from big established groups - hard to democratize support (e.g. CrossRef)
PROCES
how?
How to define standards: based on each source or more generic?
who gets a seat at the table in process of stds bldg?
What can we learn from Counter's Code of Practice & work
USE CASE
What do the current tool makers and early adopters want altmetrics to be used for?
Tie This standard to Government Policy eg. RCUK Assessment
ALMs for tenure and promotion
Categories
How can altmetrics be grouped into different categories?
"All Metrics"
define a broader category of non-impact metrics.
Decouple presentation of "altmetrics" info from analytics
How can we compare different altmetrics?
Collecting the Altmetrics Data in a systematic way via APIs: Best Practice
How to Control?
Accumulation of existing measurement systems to capture appropriate metrics
Should we Store identifier
DOIs → PMIDs
Handles → DOIs
ISBN, IDs?


Post-it
Easel Pad
Tableau à feuilles mobiles
Block de Hojas Reposicionables
Super Sticky
Super Collant
Super Adhesivos
3M
Define Impact
ID Stake Holders
Define Value
Primary / Secondary
Promoting Behavior
Attention vs Quality
Establish Baseline / context
TRANSPARENCY
Format neutrality



August 19, 2015

30 One-on-One Interviews

Lots and lots of ideas

Phase 2: Consensus

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How the information world CONNECTS

Phase 2

Presentations of Phase 1 report (June 2014)

Prioritization Effort (June - Aug, 2014)

Project approval (Nov - Dec 2014)

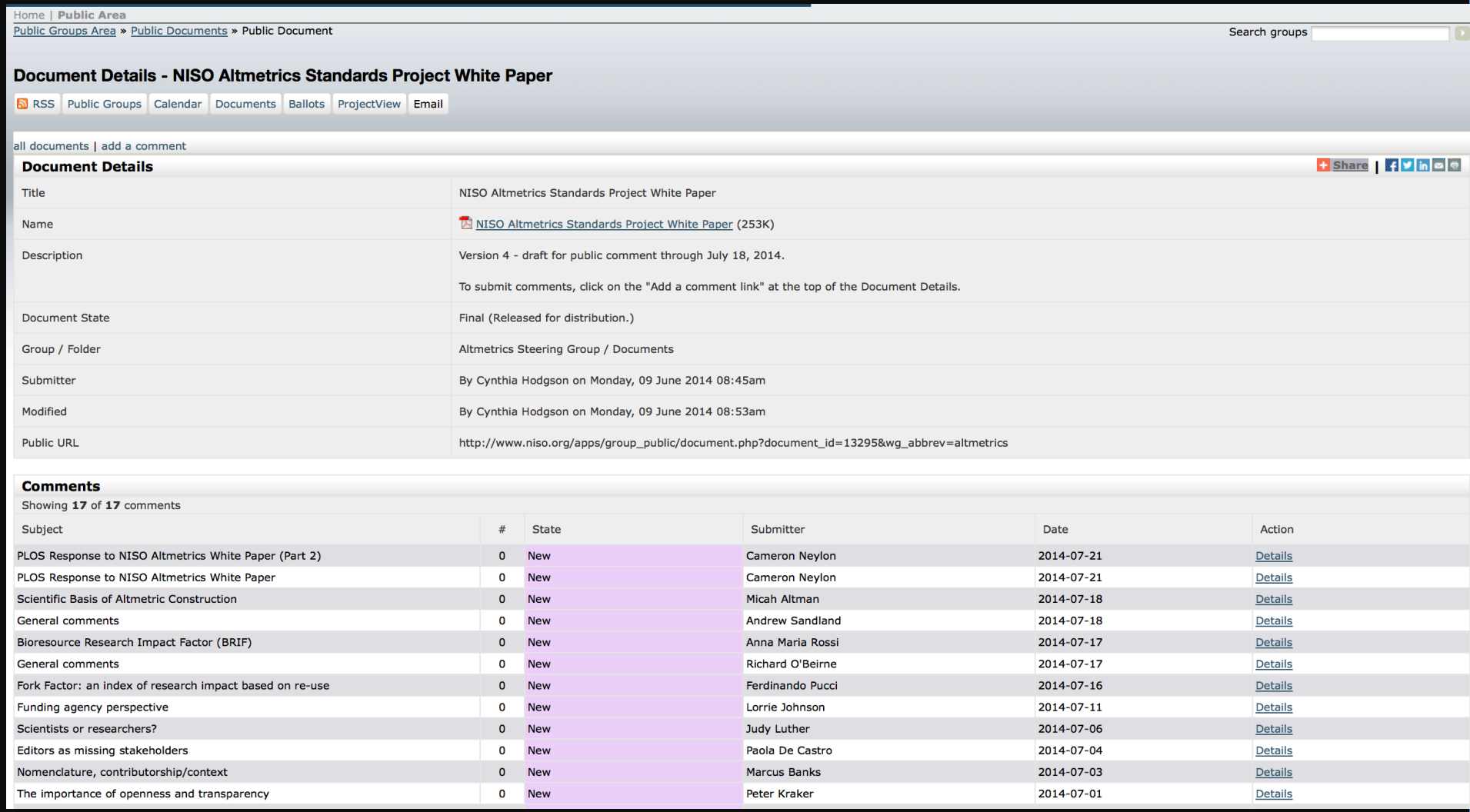
Working group formation (Jan - March 2015)

Consensus Development (March 2015 - Feb 2016)

Trial Use Period (Feb 15 - May 16)

Publication of final recommendations (Aug 16)

White Paper Released



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Document Details - NISO Altmetrics Standards Project White Paper

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Document Details

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Title	NISO Altmetrics Standards Project White Paper
Name	NISO Altmetrics Standards Project White Paper (253K)
Description	Version 4 - draft for public comment through July 18, 2014. To submit comments, click on the "Add a comment link" at the top of the Document Details.
Document State	Final (Released for distribution.)
Group / Folder	Altmetrics Steering Group / Documents
Submitter	By Cynthia Hodgson on Monday, 09 June 2014 08:45am
Modified	By Cynthia Hodgson on Monday, 09 June 2014 08:53am
Public URL	http://www.niso.org/apps/group_public/document.php?document_id=13295&wg_abbrev=altmetrics

Comments

Showing **17** of **17** comments

Subject	#	State	Submitter	Date	Action
PLOS Response to NISO Altmetrics White Paper (Part 2)	0	New	Cameron Neylon	2014-07-21	Details
PLOS Response to NISO Altmetrics White Paper	0	New	Cameron Neylon	2014-07-21	Details
Scientific Basis of Altmetric Construction	0	New	Micah Altman	2014-07-18	Details
General comments	0	New	Andrew Sandland	2014-07-18	Details
Bioresource Research Impact Factor (BRIF)	0	New	Anna Maria Rossi	2014-07-17	Details
General comments	0	New	Richard O'Beirne	2014-07-17	Details
Fork Factor: an index of research impact based on re-use	0	New	Ferdinando Pucci	2014-07-16	Details
Funding agency perspective	0	New	Lorrie Johnson	2014-07-11	Details
Scientists or researchers?	0	New	Judy Luther	2014-07-06	Details
Editors as missing stakeholders	0	New	Paola De Castro	2014-07-04	Details
Nomenclature, contributorship/context	0	New	Marcus Banks	2014-07-03	Details
The importance of openness and transparency	0	New	Peter Kraker	2014-07-01	Details

200 + Ideas
Highlighting 25 Potential Work Topics

Definitions

Application to types of research outputs

Discovery implications

Research evaluation

Data quality and gaming

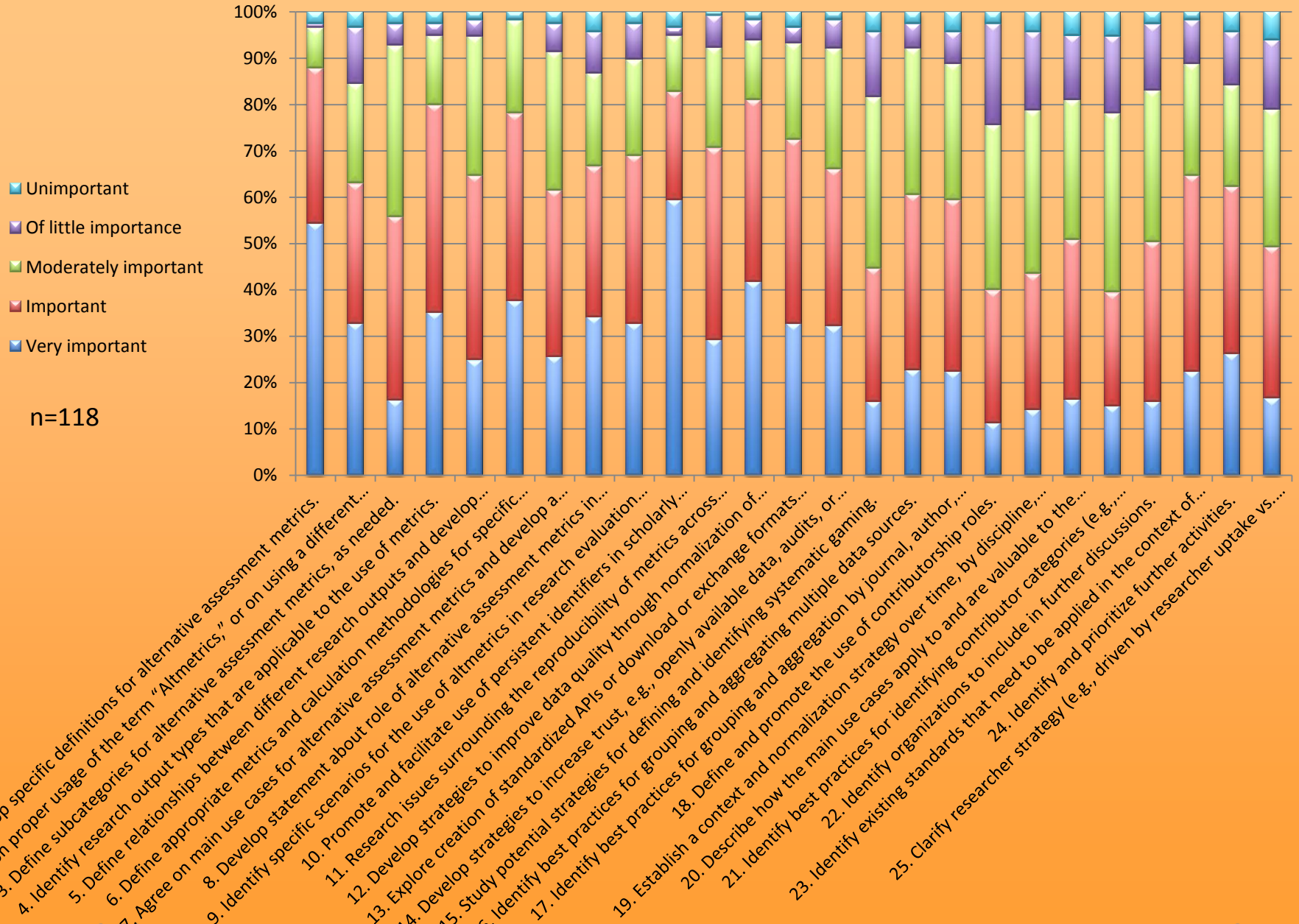
Grouping, aggregating, and granularity

Context

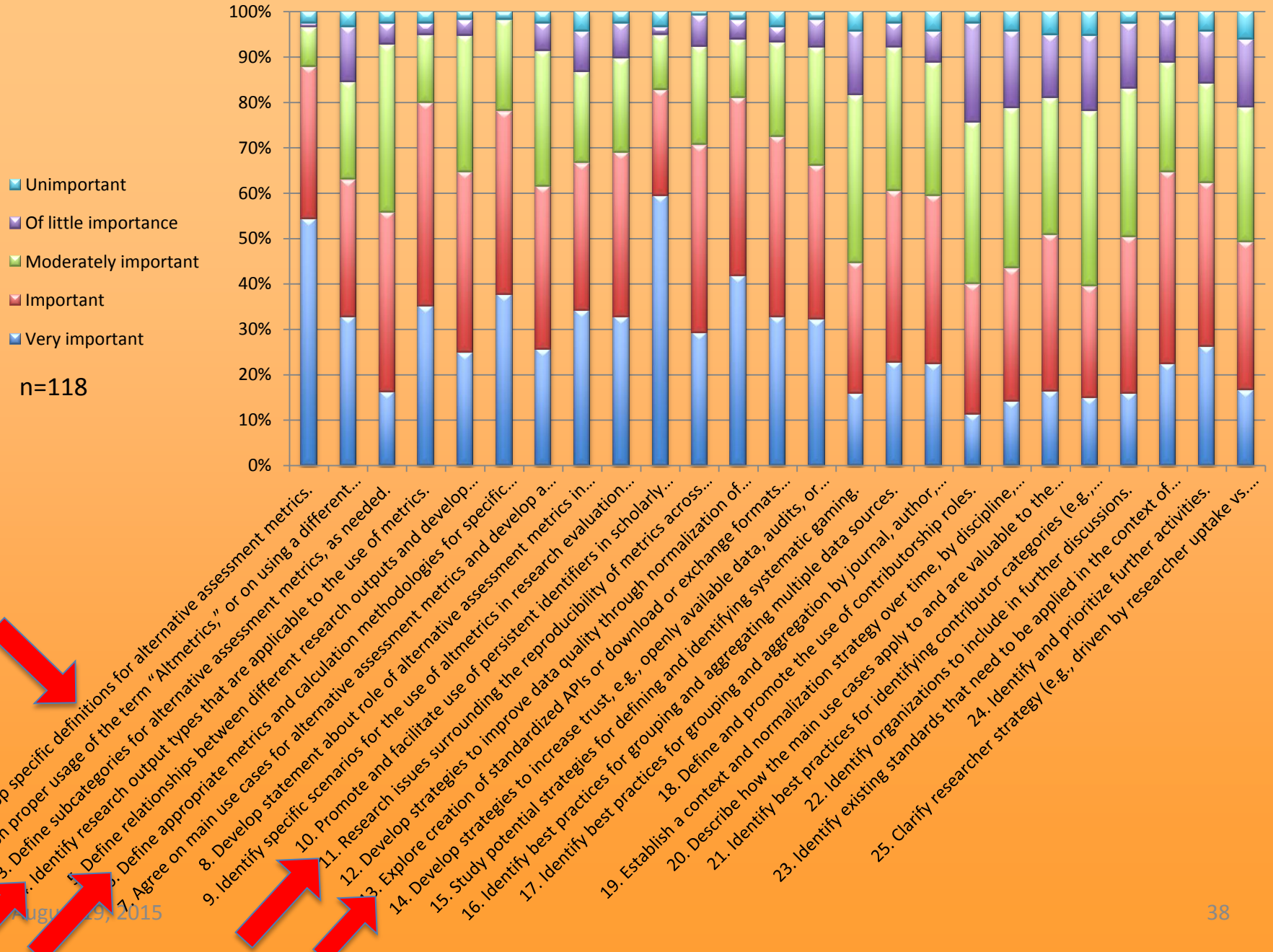
Adoption

NB: NISO isn't pursuing ALL of these topics

Community Feedback on Project Idea Themes



Community Feedback on Project Idea Themes



Top-ranked ideas (very important & important >70%)

- Develop specific definitions for alternative assessment metrics. (87.9%)
- Promote and facilitate use of persistent identifiers in scholarly communications. (82.8%)
- Develop strategies to improve data quality through normalization of source data across providers. (80.8%)
- Identify research output types that are applicable to the use of metrics. (79.8%)
- Define appropriate metrics and calculation methodologies for specific output types, such as software, datasets, or performances. (78.1%)
- Explore creation of standardized APIs or download or exchange formats to facilitate data gathering. (72.5%)
- Research issues surrounding the reproducibility of metrics across providers. (70.7%)

Launched three working groups

A) Development of definitions and descriptions of use

B) Definitions for appropriate metrics and calculation methodologies for non-traditional output types. Also work toward promotion and facilitation of use of persistent identifiers

C) Development of strategies to improve data quality through source data providers

Group A: Development of definitions and descriptions of use

Conducted research to collect, collated and expand on existing definitions, concepts and use cases

Identified some elements where there is consensus, and identified others where there may be controversies. Working toward agreement

Second subgroup organizing and transforming research on a consolidated list of use cases into a set of formalized set

Group B: Non-traditional output types and Persistent identifiers

Reviewing existing work of related projects such as:

COUNTER, bioCADDIE, RDA data publishing services, FORCE11 code citation working group

Brainstorming on what various non-traditional research outputs exist to determine what should be in scope for the work

Arranged partnership with a similar CASRAI group

General discussion on identifiers and applications

Group C: Strategies to improve data quality

Drafting a "Code of Conduct”

Recommendations focused on how data providers, aggregators and users should behave in order to introduce transparency and ensure that delivered data is trustworthy, replicable, consistently reported within and across sources, and accurately represents what it intends and/or purports to measure.

Steering Committee

Alternative Assessments of our Assessment Initiative

White paper downloaded 7,700 times

21 substantive comments received

120 in-person and virtual participants at the meetings

These 3 meetings attracted **>400 RSVPs for live stream**

Goal: generate about 40 ideas, in total, **generated more than 250**

Project materials downloaded more than **62,000 times**

>550 direct tweets, >350 RTs using the #NISOALMI hashtag

Survey ranking of output by 118 people

Eight articles in traditional news publications

18 blog posts about the initiative

29 conference presentations about this project

For more

Project Site:
www.niso.org/topics/tl/altmetrics_initiative/

White Paper:
http://www.niso.org/apps/group_public/download.php/13295/niso_altmetrics_white_paper_draft_v4.pdf

Questions?

Todd Carpenter
Executive Director
tcarpenter@niso.org
@TAC_NISO

National Information Standards Organization (NISO)
3600 Clipper Mill Road, Suite 302
Baltimore, MD 21211 USA
+1 (301) 654-2512
www.niso.org