Research Evaluation

ARL LIBRARY ASSESSMENT CONFERENCE

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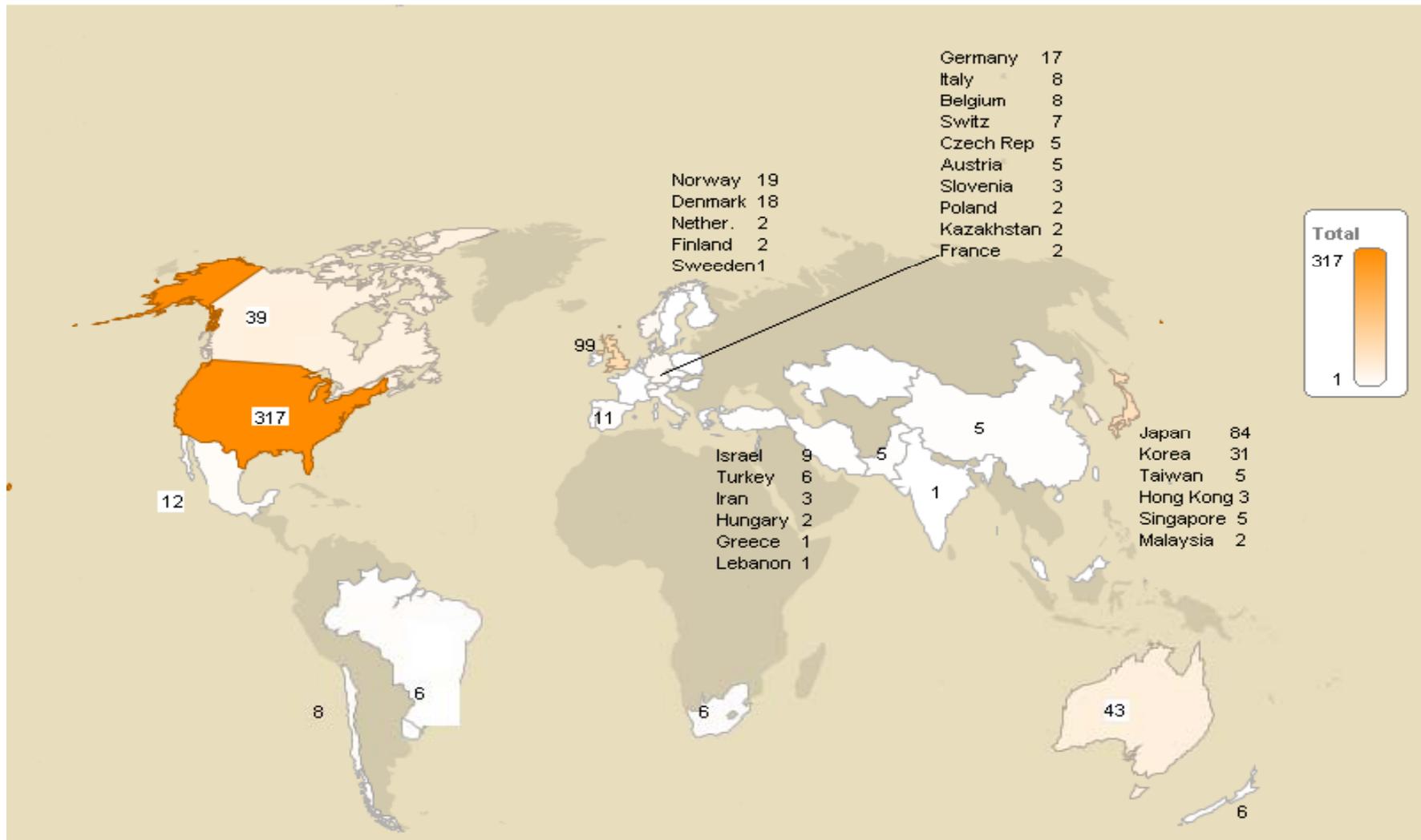**THOMSON REUTERS**
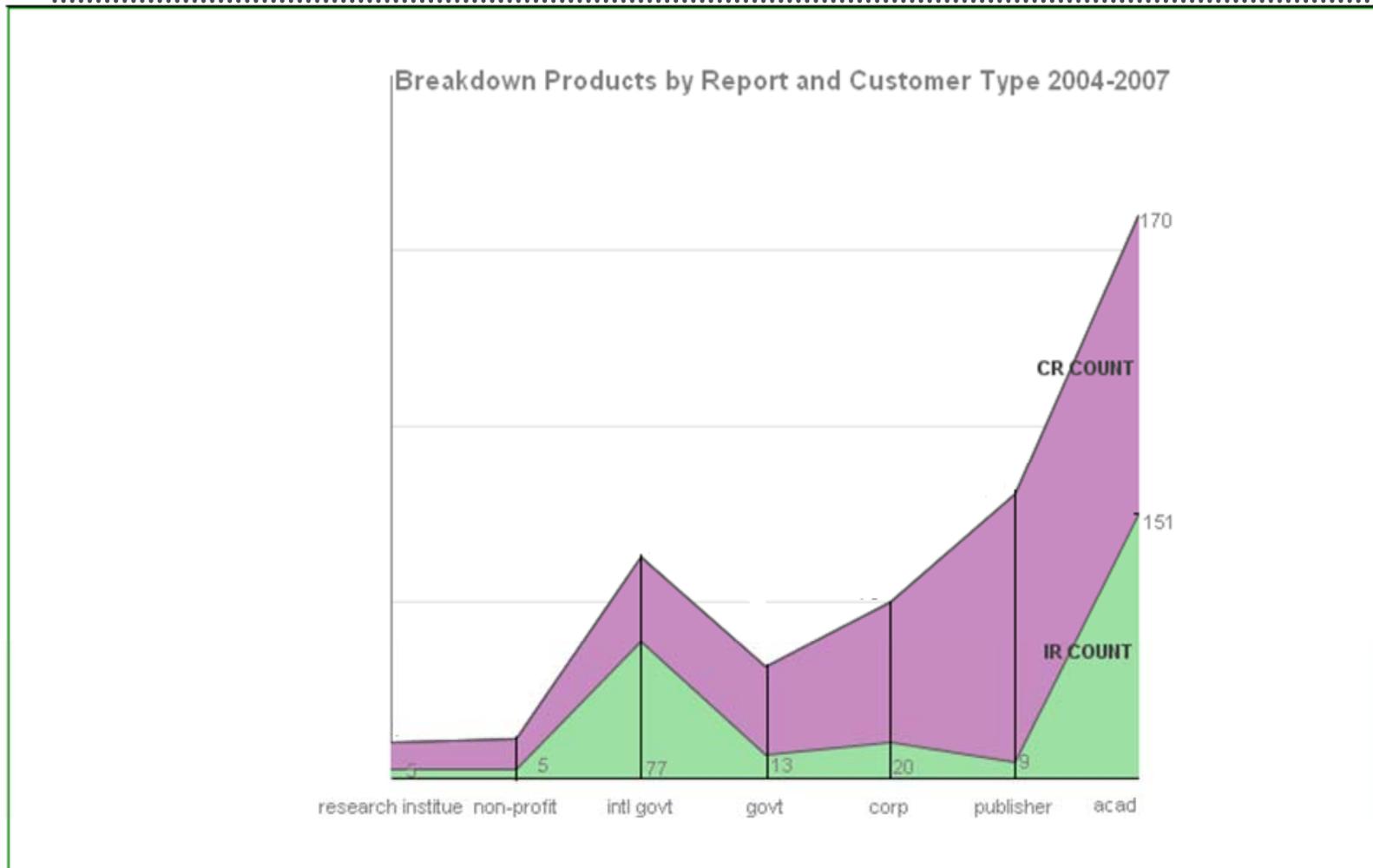
AGENDA

- Research Background

- Drivers

- Stakeholders

- Findings

- Library Support in Institutional Research Evaluation

A WORLD VIEW

Germany 17
Italy 8
Belgium 8
Switz 7
Czech Rep 5
Austria 5
Slovenia 3
Poland 2
Kazakhstan 2
France 2

Norway 19
Denmark 18
Nether. 2
Finland 2
Sweeden 1

Total 317 1

39
99
11
317
12
5
5
1
6
8
6
6
43
6

Israel 9
Turkey 6
Iran 3
Hungary 2
Greece 1
Lebanon 1

Japan 84
Korea 31
Taiwan 5
Hong Kong 3
Singapore 5
Malaysia 2

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EVALUATION TRENDS

Breakdown Products by Report and Customer Type 2004-2007

Drivers for increased evaluation and assessment

Funding Pressures

Efforts at Objective Approaches to Promotion and Tenure

Reputation Management and Demonstration of Achievement

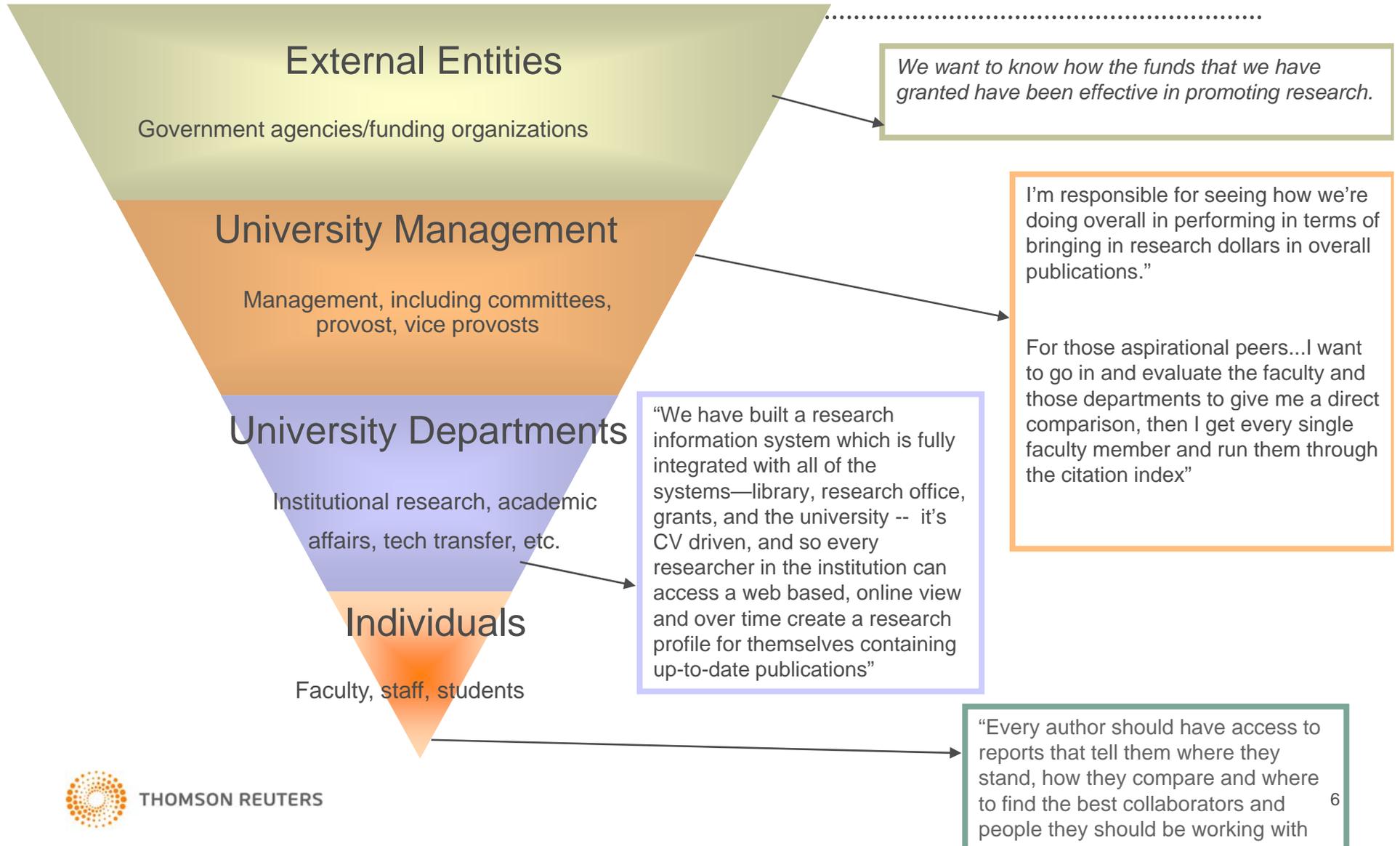Big Science, Large Scale Medical Research Projects
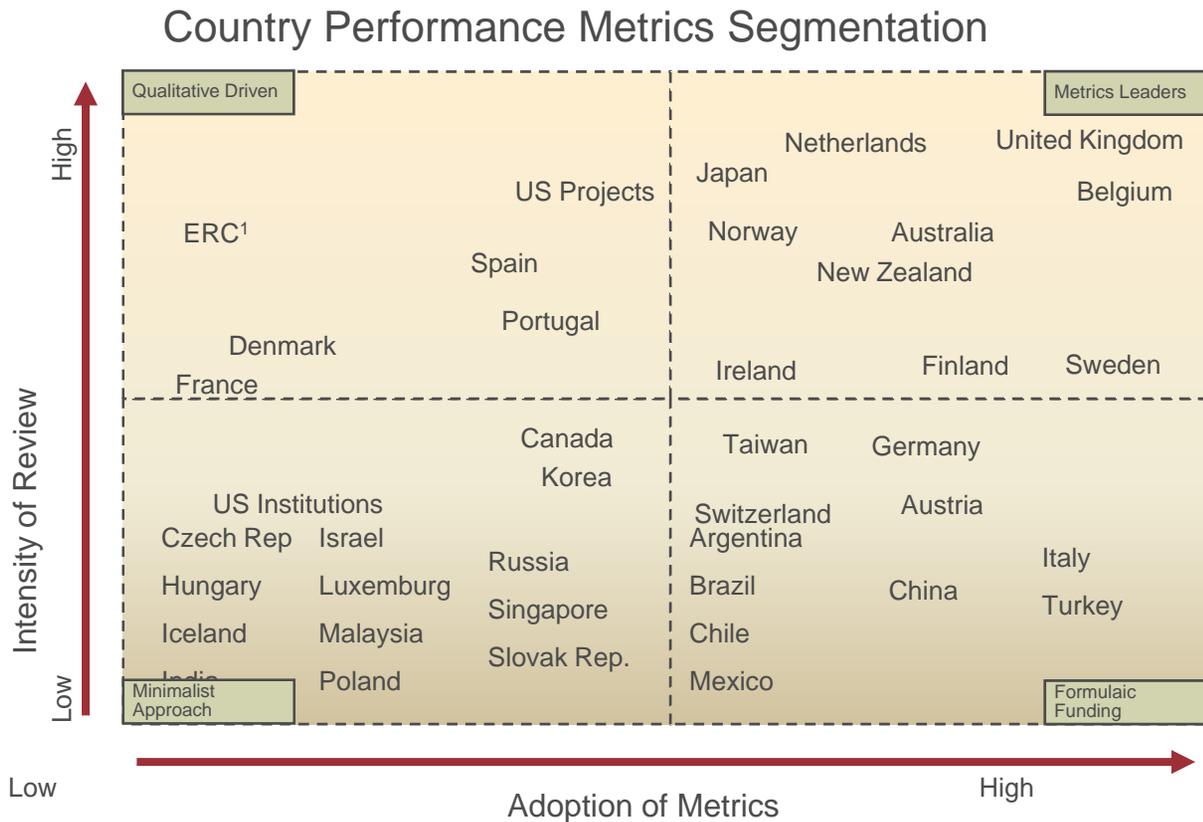
Global Competition in the Sciences

Changing Nature of Scholarly Journal Publishing

Who are the stakeholders in research evaluation

External Entities

Government agencies/funding organizations

We want to know how the funds that we have granted have been effective in promoting research.

University Management

Management, including committees, provost, vice provosts

I'm responsible for seeing how we're doing overall in performing in terms of bringing in research dollars in overall publications."

For those aspirational peers...I want to go in and evaluate the faculty and those departments to give me a direct comparison, then I get every single faculty member and run them through the citation index"

University Departments

Institutional research, academic affairs, tech transfer, etc.

"We have built a research information system which is fully integrated with all of the systems—library, research office, grants, and the university -- it's CV driven, and so every researcher in the institution can access a web based, online view and over time create a research profile for themselves containing up-to-date publications"

Individuals

Faculty, staff, students

"Every author should have access to reports that tell them where they stand, how they compare and where to find the best collaborators and people they should be working with

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Country segmentation: approaches to metrics

Where countries fall in the segmentation will drive their

attentiveness to benchmarks and methodology

Country Performance Metrics Segmentation

Qualitative Driven

Metrics Leaders

ERC[1]

US Projects

Netherlands

United Kingdom

Japan

Belgium

Spain

Norway   Australia

Portugal

New Zealand

Denmark

France

Ireland   Finland   Sweden

Canada

Korea

Taiwan   Germany

US Institutions

Czech Rep   Israel

Switzerland   Austria
Argentina

Hungary   Luxemburg

Russia

Italy

Iceland   Malaysia

Singapore

Brazil   China

Turkey

India   Poland

Slovak Rep.

Chile

Minimalist Approach

Mexico

Formulaic Funding

Intensity of Review — Low / High

Adoption of Metrics — Low / High

Observations

- Most countries still regard their systems for evaluating research as somewhat experimental

- The general trend among countries is movement toward the upper-right quadrant

- UK /Australia may establish global standard, and will be moving toward an even more PM centric systems in 2008

- Project funding in US is becoming increasingly metric dependent

[1] European Research Council

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Institutional Measurement

Research Performance Measures - are currently the most reliant on external information sources and benchmarks

Key Areas

	Operational	Economic	Academic	Research
Purpose	• Day to day operational decisions	• Ongoing institutional funding	• Student recruiting and alumni donations	• Funding distribution, faculty recruiting and evaluation
Examples	• Faculty salaries • Real estate usage/expense • Position openings	• Revenue/expenditures • Employment • Economic impact • Construction	• Enrollment • Programs available • Student performance • Selectivity/rankings	• Research funding • Publications/citations • Patents/licenses • Awards/honors
Audience	• Provost • Dept. heads	• Provost • Local/State/Ministry Government	• Faculty Size • Provost/Dept • Students/Alumni	• Provost/dept/faculty • Funding institutions
Source	• Internal	• Internal • Economic impact data	• Internal • ERP external	• Research office I/government • Citation dbs • library

PROJECT SCOPE

TYPES OF RESEARCH ASSESSMENTS

Measurement and Assessment Projects for Various Purposes
Key Indicators: Overall output measures and institutional benchmarks
Program Reviews and Assessments
Researcher Promotion and Tenure Reviews
Growth and Strategic Direction
Big Science / Multidisciplinary Collaborative Research Projects
National Level Assessment Programs

KEY MEASURES

What gets measured?

Grant funding

Faculty salaries

Research expenditures

Rankings

Patents

Research output

Graduation rates

Private gifts

Enrollment Growth

Faculty Reputation

Faculty Turnover

Teaching Performance

Accreditation Evaluation

Endowment Growth

Faculty and Student Diversity

Internal Funding Sources

Peer Comparisons

Student Performance/ Retentions

WHY MEASURE?   LOFTY GOALS

"*There are two reasons that most universities look at something as important . . . it allows us to operate . . . it allows us to improve our image.*"

"*The ultimate aim of the performance appraisal is to maintain quality and continuously improve quality.*"

"*Fix what is wrong, improve what is good, and extend what is perfect.*"

"*Our ultimate goal is excellence in teaching and research.*"

WHY MEASURE?

"You know, 20 years ago a faculty member was assigned an office and a lab, and he pretty much had to die before his lab ever was taken away from him. Now they're given an office and they're given access to laboratory space, but there's no vested ownership of that space. Whether they can use it or not truly depends on their access to funding, and departments are moved around and reshuffled and reorganized based a lot on the research goals that the school or the individual department, centers of institute set, and those processes are conducted basically on a three-year review cycle."

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CHALLENGES

"... there's no question that we're all becoming more data intensive in how we make these decisions ..."

""Depending on the evaluation, the university may or may not invest additional resources into the program."

"... the way we have to do it now is kind of awkward ..."

"As funding becomes tighter, it becomes more and more important to be able to say in an organized manner, 'we have spent our funds well.'"

CHALLENGES

DESPITE GOALS AND MANY DISPARATE EFFORTS
Sourcing and Compiling Data
Coordination across types of assessments: duplicative efforts
Standard Measures Across Institutions, Countries: need understanding of organizational attributes and structures
Confidence in Methodologies and Approaches: the right tools for the job
Confidence, Training in Systems and Tools
Want Central Databases and Up to date systems

HOW IS EVALUATION CONDUCTED?

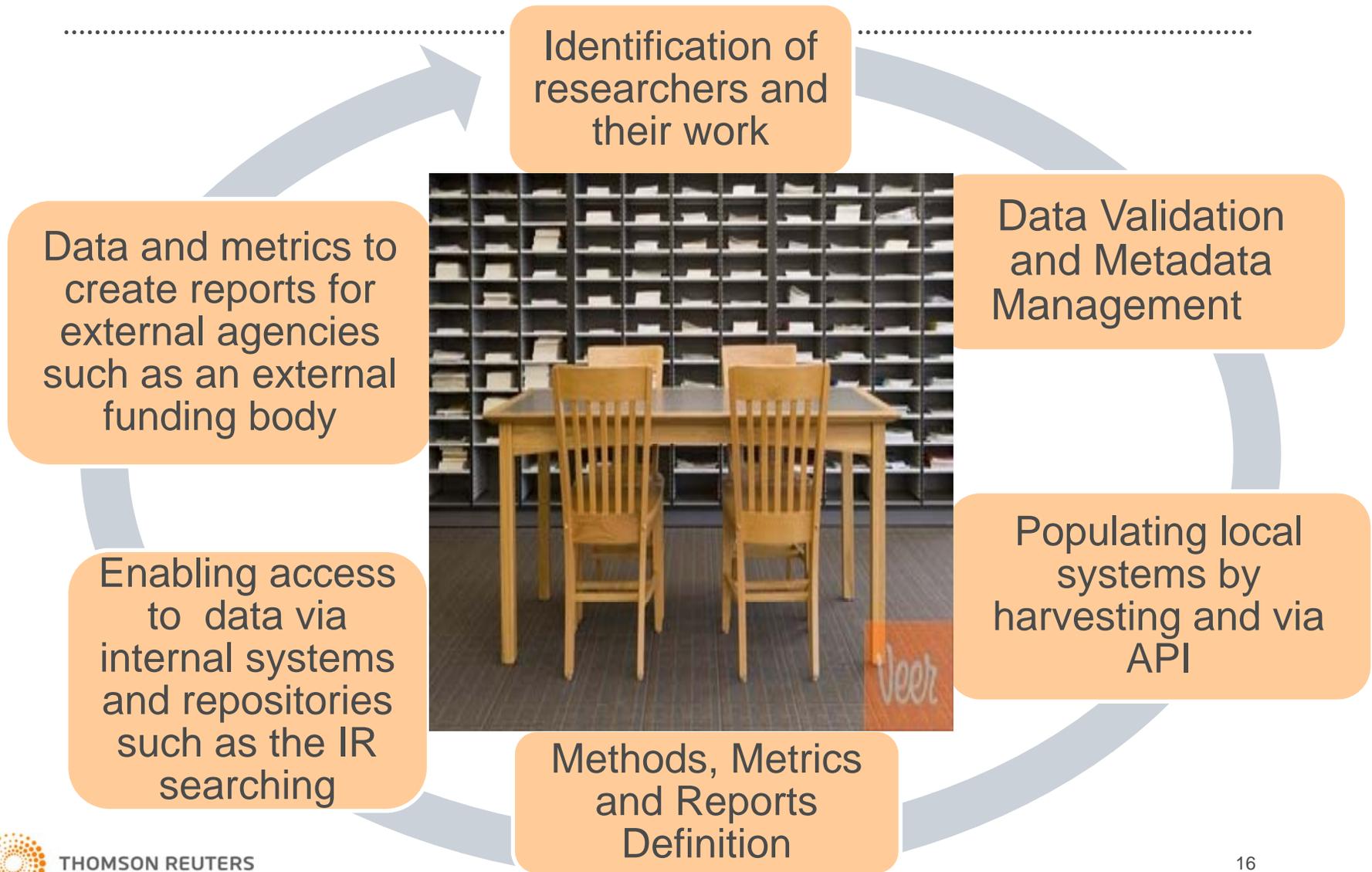| Scientometrics	• Citations • Output • Use and User Logging
Peer Review	• Formal • Informal
Surveys	• Incoming • Outgoing

Is there an Institutional Research Evaluation Workflow

Identification of researchers and their work

Data Validation and Metadata Management

Data and metrics to create reports for external agencies such as an external funding body

Populating local systems by harvesting and via API

Enabling access to data via internal systems and repositories such as the IR searching

Methods, Metrics and Reports Definition

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ROLES FOR THE LIBRARY IN RESEARCH EVALUATION

- Tying research evaluation activities to core library services – collections (journals) and services that are acquired, used, cited, etc

- Application through enhanced, integrated, flexible services, collections, and support systems

- Increased role for Institutional Repositories

- Coordination among collection and use of data

- Understanding of integrated systems development

- Equipped at researcher level service delivery

- Application across multi level campuses or collaboration institutions

- Policies, Best Practices,

- Technology Support for interactivity and data supplies

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What to measure? When?

- Total Papers / Total Citations
- Citation Impact (cites per paper)
- Percent Cited
- **Impact Relative to Field**
- Percentile Rank in Field
- **Collaboration Indicators**
- Expected Citation Count
- **Ratio of Citations to Expected citation count**
- **Expected Citation Rate for Category**
- Mean / Median Citation
- H Index
- Citation Frequency Distribution
- Time Series Trends
- Disciplinarity

Authors

Institutions

Departments

Nations

Journals

Fields / Topics

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What to measure? When?

- Downloads

- Source of Downloads

- Items in Alerts, Comments

- Presence in the network

Authors

Institutions

Departments

Nations

Journals

Fields / Topics

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Resources

- Beyond the RAE 2008: Bibliometrics, League Tables and the REF-- A one day conference 30th April 2008
  Jointly sponsored by King's College London and Thomson Reuters

  – http://scientific.thomson.com/kcl/

- Research Evaluation Site

  – http://scientific.thomsonreuters.com/products/solutions/researcheval/

- White Paper: *Using Bibliometrics: A Guide to Evaluating Research Performance with Citation Data*

- White Paper: *Using Bibliometrics in Evaluating Research*

- Science Watch: Tracking Trends and Performance

  – http://scientific.thomsonreuters.com/products/sw-hp/

- Regional and Expanded Journal Content

  – http://scientific.thomsonreuters.com/free/essays/selectionofmaterial/regionalcontent/

Ten Rules in Using Publication and Citation Analysis

1. Consider whether available data can address the question.

2. Choose publication types, field definitions, and years of data.

3. Decide on whole or fractional counting.

4. Judge whether data require editing to remove "artifacts".

5. Compare like with like.

6. Use relative measures, not just absolute counts.

7. Obtain multiple measures.

8. Recognize the skewed nature of citation data.

9. Confirm that the data collected are relevant to the question.

10. Ask whether the results are reasonable.

And, above all, present the results openly and honestly.

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Research Evaluation

Thank You!

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