

University Investments in the Library, Phase II

An International Study

Arthur Eger MSc

Stellenbosch Symposium / IFLA
Presidential Meeting 2010
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Library value for the institute

- Academic libraries all over the world face the challenge of demonstrating and quantifying their value to their funders
- Academic leaders need evidence how the library supports the institution's strategic goals
- Researchers at the University of Illinois at Urbana-Champaign (UIUC) interviewed top-level administrators about priorities and values (Luther, 2008)

Library constituents perceive decreased value

ITHAKA REPORT

Ithaka's 2006 Studies of Key Stakeholders in
the Digital Transformation in Higher
Education

August 18, 2008

- The library is increasingly disenfranchised from the actual research process
- The perceived importance of the library's role as a gateway for locating information has fallen over time

Value gap emerges: ARL expenditures vs perception of library

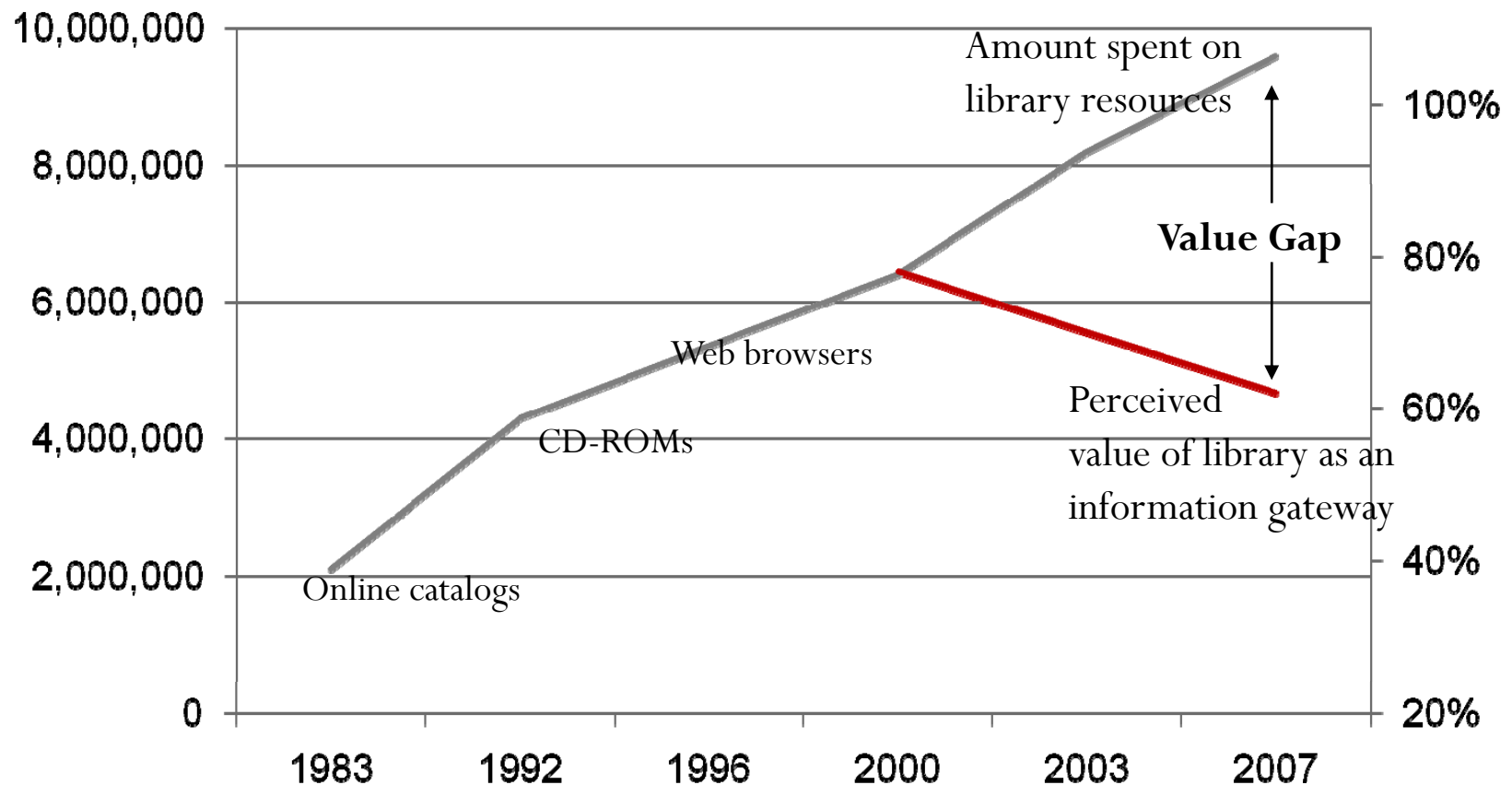


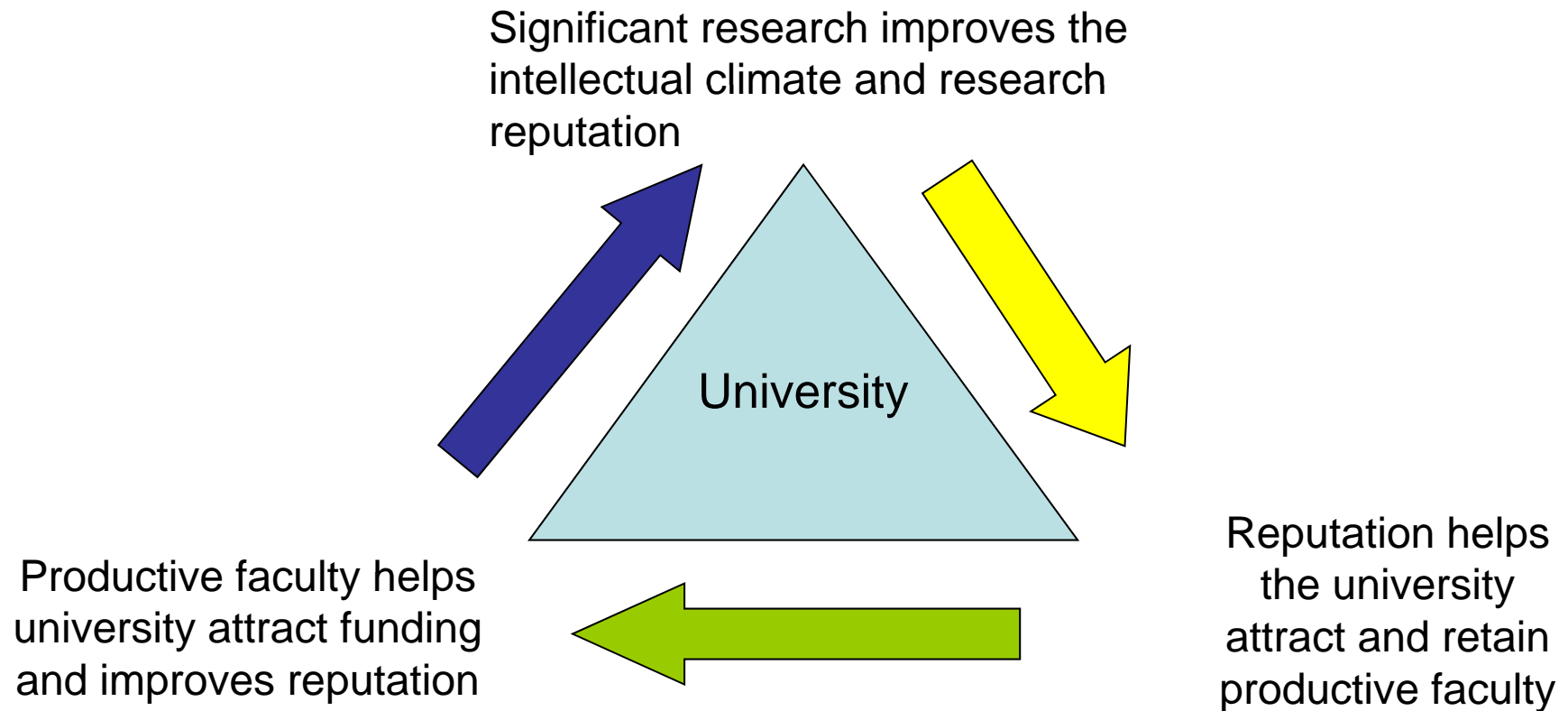
Chart courtesy of Dr Carol Tenopir, 2009

Figures from the Association of Research Libraries

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Cycle of development for the university

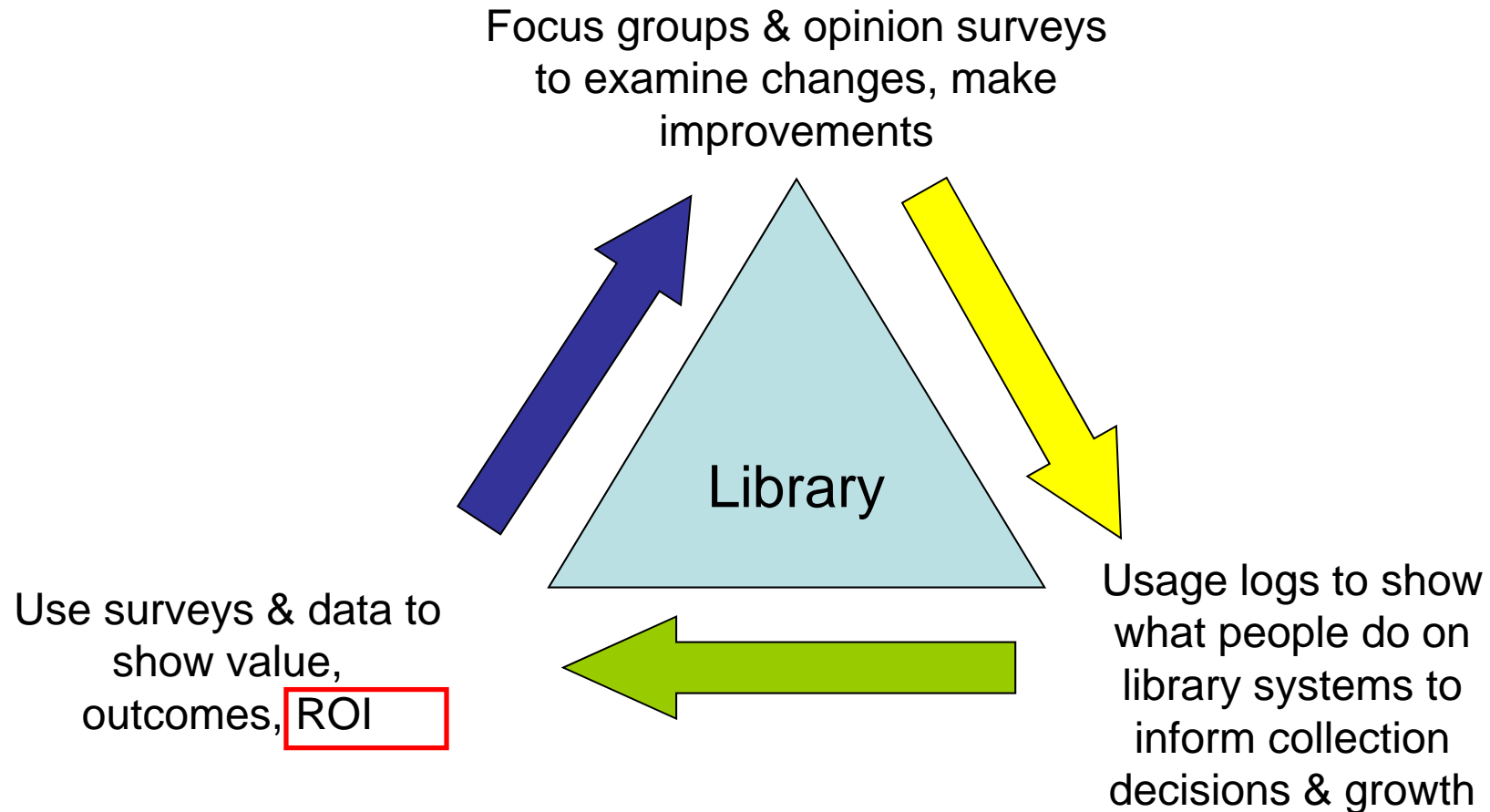


What administrators want: libraries that support institutional strategic goals

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Establishing library value in the past and the future

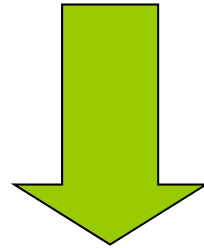


**Methods to learn about users and usage work together
to show explicit and implicit value**

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Goal of ROI

**To demonstrate that library collections
contribute to the income-generating
activities of the institution.**



**For every monetary unit spent
on the library,
the university receives 'X' monetary units
in return.**

Library validation methodologies

Popular methodologies:

- Cost/benefit analysis
- Contingent validation
(what would be lost if the library ceased to exist)
- Secondary impact analysis
- Social Return on Investment
- Quantifiable benefits analysis

Some results:

- Florida Public Libraries ROI of \$6.54 (2004)
- Ohio Public Library systems \$3.81 quantifiable benefits
- University of Pittsburg nett benefit \$2.90 to \$1

Prior to 2008 no methodology offered a way to measure an academic library's role in generating (grant) income for the university

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Quantifying for the university

ROI:

Income as a proportion of the amount invested in an asset.

Faculty generate income for the institution. Faculty use the library and its collections. What role do information resources serve in the income generation process?

% of grant \$
using
library
resources

÷

Library budget

=

“X”

Types of data:

Reliable, accessible, clearly defined

Data types	Methods
Research Faculty	Survey: quantitative and qualitative
Grant Proposals	University-supplied data; survey
Grant Income	University-supplied data
Library	Total budget (including collection, facilities, personnel, etc.)
Administrators' Priorities	Personal interviews (with library leadership, university executives, and research managers)

Phase I: ROI model for UIUC

$$\begin{aligned} & 78.14\% \text{ faculty w/ grant proposals using citations from library} \\ & \quad \times \\ & 50.79\% \text{ award success rate from grants using citations from library} \\ & \quad \times \\ & \quad \$63,923 \text{ average grant income} \\ & \quad = \\ & \$25,369 \text{ avg. income generated from grants using citations from library} \\ & \quad \times \\ & \quad 6232 \text{ grants expended} \\ & \quad \div \\ & \quad \$36,102,613 \text{ library budget} \\ & \quad = \\ & \$4.38 \text{ grant income for each \$1.00 invested in library} \\ & \quad \text{(ROI value expressed as 4.38:1 ratio)} \end{aligned}$$

*The UIUC pilot study demonstrate that library collections
contribute to income generating activities*



Phase II Principal Investigator



Dr Carol Tenopir

- University of Tennessee, Knoxville
- Chancellor's Professor, School of Information Sciences
- Director of Research, College of Communication and Information
- Director, Center for Information and Communication Studies

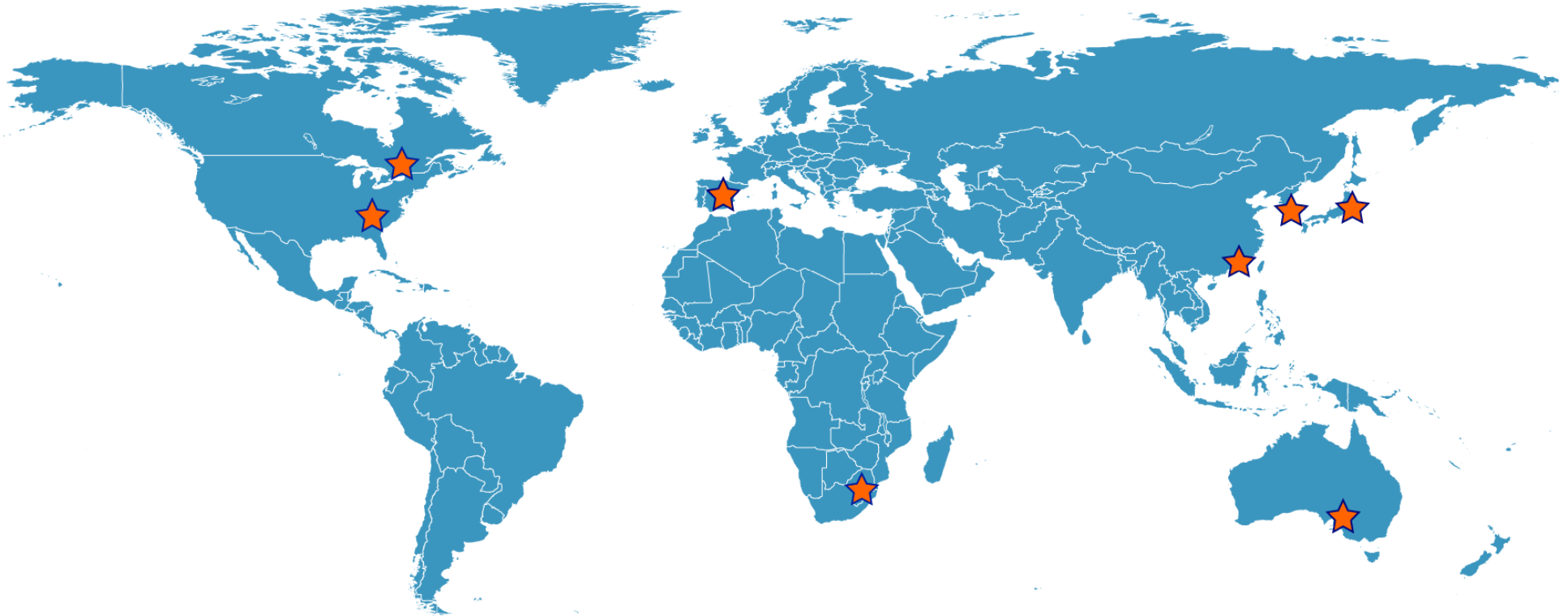


Phase II: ROI in grants, expanded to 8 institutions in 8 countries (completed 2009)

Phase II: Narrow focus, broad range of institutions

- Keeps the focus on ROI for grants income
- Extends the phase I model
 - To 8 more institutions in 8 countries
 - Identifies similarities and differences across the countries and institutions
- Tests the model for replication

Phase II: Distribution of institutions



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Included in Phase II: University of Pretoria



- > 1,000 academic staff members
- > 50,000 students incl.
 - 27,729 full time undergraduate students
 - 10,484 full- or part time postgraduate students
 - 14,000 distance education students

Analytical approach

- Interviews with key administrators to capture the institutional goals and values
- Library budget figures over time
- Grants income over time
- Faculty survey to measure:
 - Total number of grant proposals
 - Number of grant proposals that included citations
 - Number of grant awards from proposals that included citations
 - Importance of citations in grant proposals
- Testimonials (in survey or through faculty interviews) that focus on outcomes of library use

Executive values: Issues that are similar

- Attain prestige and internationalization
- Improve faculty and research productivity
- Attract high quality students through high quality instruction
- Expand grant funding

**“Funding does not regenerate funding.
But reputation does.”**
– Charles Zukoski, UIUC



Executive values: Issues that are different

- University mission
 - Research-intensive *versus* focus on teaching
 - Cultural preservation *versus* globalization
- Funding sources
 - External *versus* internal
 - National *versus* global
- Mandates
 - Institutional, regional, national
- Library alignment with mission
 - Investment in information resources
 - Enablement of e-access/infrastructure

Some logistical issues

- Differences in terminology
 - Academic ranks; “expenditures” *versus* “income”
- Variations in data that universities keep and who keeps it over 10 years
- How data is recorded
 - Fiscal year, academic year, calendar year
- Grant proposals requirement, award cycles, and funding sources
- Monetary units
- Academic calendar: Differences in hemisphere
- Languages and communication styles

Faculty survey: ROI calculation questions & other data checks

- How many proposals submitted?
- How many grants funded?
- Total monetary value of grants?
- Importance of citations in proposals and reports?
- How many citations in proposals, reports, articles?
- What % of citations from the library collections?
- For each cited, how many others do you read?



= questions necessary for ROI calculation

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Faculty survey: questions which may provide revealing testimonials

- How many hours in a typical week do you spend on:
 - Finding or accessing articles or books?
 - Reading articles or books?
- How has access to e-resources through the university network changed the way you work?

Faculty survey: Demographics

- What is your primary subject discipline?
- What is your current rank/position?

Faculty survey comments: Value of e-resources

“With the current workload, I could not continue with research without the convenience of access from my own computer.”
–Africa

“A sure way to kill a proposal is not to give proper credit or to not update new developments.” –North America



“You have access to many more articles and ... you are more aware of what is going on in the field.”
–Western Europe

“Access has made collecting research resources infinitely more efficient; and facilitated interdisciplinary research.”
–North America

Faculty survey comments: Positive impact on productivity

“I guess that on average the online access saves me more than 10 hour per week.”
–Western Europe

“The task of finding the most pertinent articles on a new topic used to take a full afternoon. The same work can now be completed in 15 to 30 minutes.” –North America

“My productivity would drop at least four fold if I had to go to the library for all my needs.”
–North America

“The convenience of desktop delivery has improved my efficiency and ... my ability to be a better researcher and teacher.”
–Asia-Pacific



Faculty survey comments: Library value to research

**“Such access has become
an essential research tool.”**

–Asia-Pacific

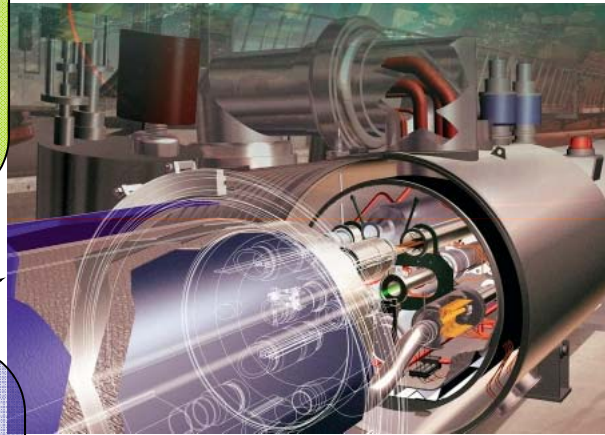
**“It would be impossible to be
competitive internationally
without electronic access to
publications.”** –North America

**“I would leave this
university in a microsecond
if the library deteriorated ...”**

–North America

**“It has helped me open or
discard lines of research at
the very beginning by
knowing what other
researchers have published
or are soon going to
publish.”**

–Western Europe



Grants ROI phase II model

- **Numbers/percentages** input into model

$$\left(\frac{\text{number of grant awards} \times \% \text{ of faculty who say citations are important to grant awards}}{\text{number of grant proposals} \times \% \text{ of proposals that include citations obtained through library}} \right) \times \frac{\text{average size of grant} \times \text{number of grants in one year}}{\text{total library budget}}$$

- **Juxtapose with interviews and survey** responses
- Put the ROI result into context for institutional faculty and executive administration

Phase II: Aggregated ROI results

University 1	3.44
University 2	15.54
University 3	u/a*
University 4	13.16
University 5	0.76**
University 6	1.31
University 7	0.64
University 8	1.43
University 9	5.60

Highest values come from institutions with a purely research mission or with a concentration in science and technology.

Middle values are from research-oriented institutions that cover all disciplines and include both teaching and research, but are located in countries or environments where seeking externally funded competitive grants is a priority and funds are available.

Lower values are:

- comprehensive liberal arts institutions with a mix of research and teaching, or
- grant monies may be limited or full data set unavailable, or
- institutions that rely on government funding instead of competitive grant funding

* University 3's result is not yet known

**University 5's result reflects multiple exclusions

ROI Elements for University of Pretoria

	Uni Pretoria	Average
Number of grant awards	1,810	725
% of faculty who says citations are important for grant awards	94.4%	85.3%
Number of grant proposals	3,850	1,590
% of proposals including citations	95.7%	93.8%
Average size of grant	123,731	1,264,167
Number of grants expanded in 1 year	1,810	997
Total library budget	79,096,878	399,606,730
ROI	1.31	4.51

*

** University 7 showed an extreme high average size of grant influencing the average*

Faculty Survey Analysis

	University of Pretoria	Average
Number of proposals submitted in 2007 per PI or Co-PI	0.96	1.36
For how many grants were you the PI or Co-PI in 2007	0.73	1.16
Number of citations included in grant proposal	12.59	23.32
Number of references in final grant report	19.02	20.49
Numbers of references in an article for publication	30.29	29.31
For each reference, how many articles or books did you read	18.9	25.4

Faculty Survey Analysis

Importance of references in grant proposals?						
	Essential	Very Important	Important	Somewhat Important	Not Important	
Uni Pretoria	63.0%	22.0%	9.0%	4.0%	2.0%	
Average	52.0%	22.0%	16.0%	7.0%	2.0%	
What % of references were accessed electronically?						
	0%	1-24%	25-49%	50-74%	75-99%	100%
Uni Pretoria	4.3%	8.6%	8.6%	22.4%	43.1%	12.9%
Average	6.0%	13.0%	12.0%	18.0%	43.0%	8.0%

- At least 3/3 of respondents say it is (very) important or essential to the grant award process to cite references
- Most respondents access at least half of the articles and books from library e-resources

Faculty Survey Analysis

Respondents report they spend at least 3.5 hours per week finding and accessing articles, and at least 9.8 hours reading articles

Time spent finding articles and books (hrs/week)				
Uni Pretoria	7			
Time spent reading articles and books (hrs/week)				
Uni Pretoria	12			

How e-resources changed faculty

E-resources help:

- to work more efficient and increase productivity by faster access and more efficient searching
- to improve research and preparation of grant proposals
- to explore a wider range and greater volume of literature which leads to a greater understanding, making research and teaching more innovative, current and thorough
- to share articles

Phase II: Grants ROI varies

- From 15.54:1 to under 1:1
- ROI depends on institutional mission
 - Research focus is higher; teaching focus is lower
- Be cautious when comparing ROI among institutions with differing missions
- ROI is one of other measures of the library's value
 - Usage = implied value
 - Stakeholder testimonials = explicit value
 - Time & cost savings = contingent valuation

ROI for grants is only one of many other measures of the library's value

Phase I and II: what we learned

- Library resources support faculty's work by increasing productivity, efficiency, interdisciplinary explorations and international collaborations
- University leaders use library to recruit and retain faculty and students
- Library supports promoting the university's international reputation
- Faculty view library as valuable to research and grants process

Phase II and III: limitations and extensions

Phase II: measure of ROI is based solely on the contribution of the library's resources to the institutional research grants income

Phase III: will examine how to quantify other ways in which the library creates value through its contribution to teaching, student engagement, and the university's overall stature

Dr. Tenopir received a \$1 million grant from the Institute of Museum and Library Services for Phase III

Phase III: Broaden focus



How the library's functional areas
measure within the university mission

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What Phase III hopes to show

The library's products and services ...

- Help faculty be successful
- Help students be successful
- Generate both immediate and future income
- Provide a good return for the investment to the institution

Some final thoughts on measuring value

- Tie what you measure to your university's mission
- Measure value and outcomes
 - Quantitative data shows ROI and trends
 - Qualitative information tells the story
- No one method stands alone
- Enhanced access to information increases your library's value to your university

Recent analysis



How Much Do the “Best” Colleges Spend on Libraries? Using College Rankings to Provide Library Financial Benchmarks

D. Yvonne Jones

Recent ACRL guidelines¹ and standards² urge academic librarians to compare selected input and output measures with peer institutions for assessment. This paper provides an example of such a comparison, using a freely available statistical tool from the National Center for Education Statistics (NCES).³ Applying the NCES data tool to liberal arts colleges chosen by *U.S. News and World Report* (USNRWD) as the “Best Liberal Arts Colleges” provides a benchmark for library spending. Using the data tool, it was found that the average library per student cost was \$2,000/yr. The average library per student cost for the top 100 liberal arts colleges was \$2,000/yr. The average library per student cost for the top 100 liberal arts colleges was \$2,000/yr.



E-journals: their use, value and impact

A Research Information Network report

April 2009



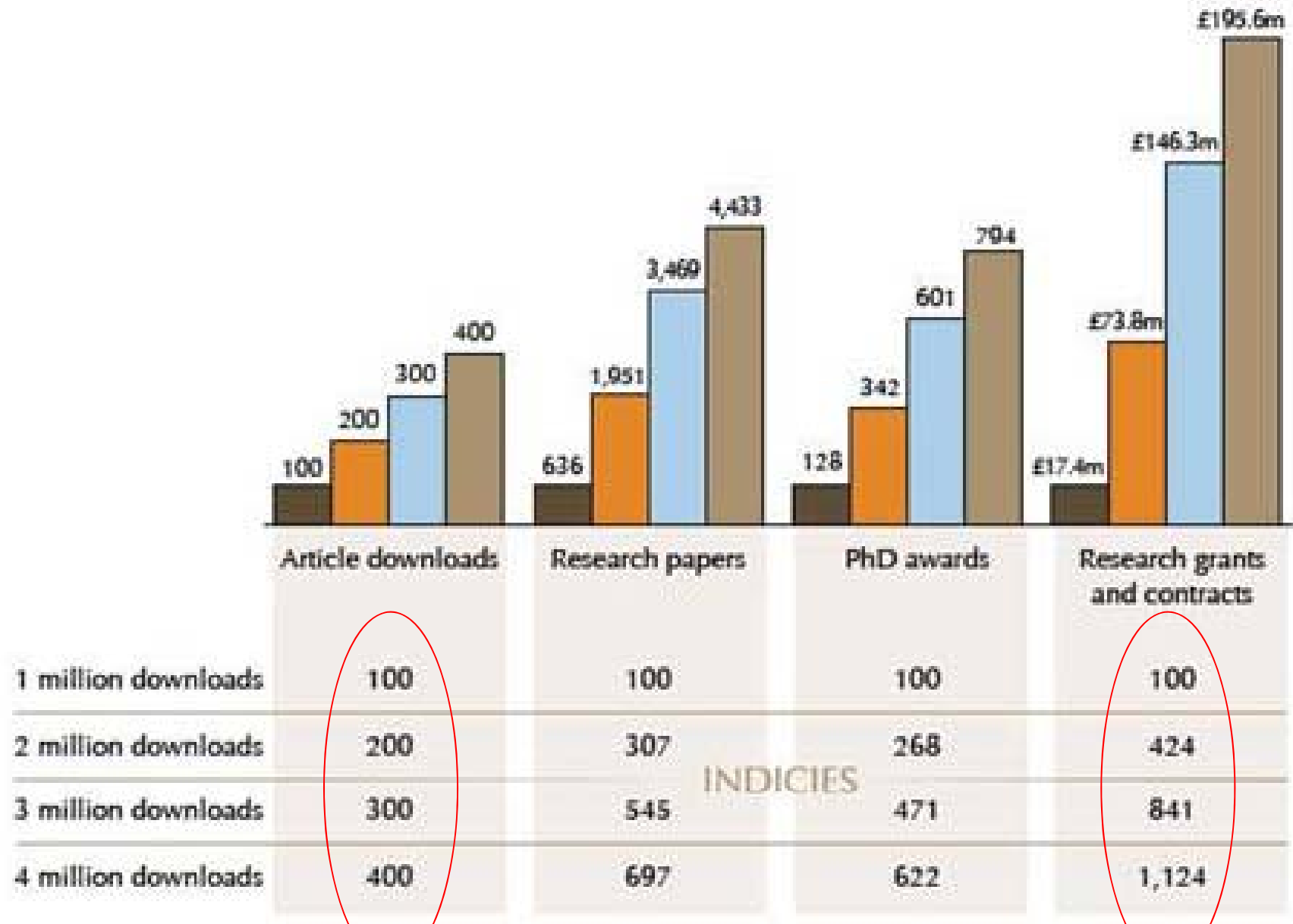
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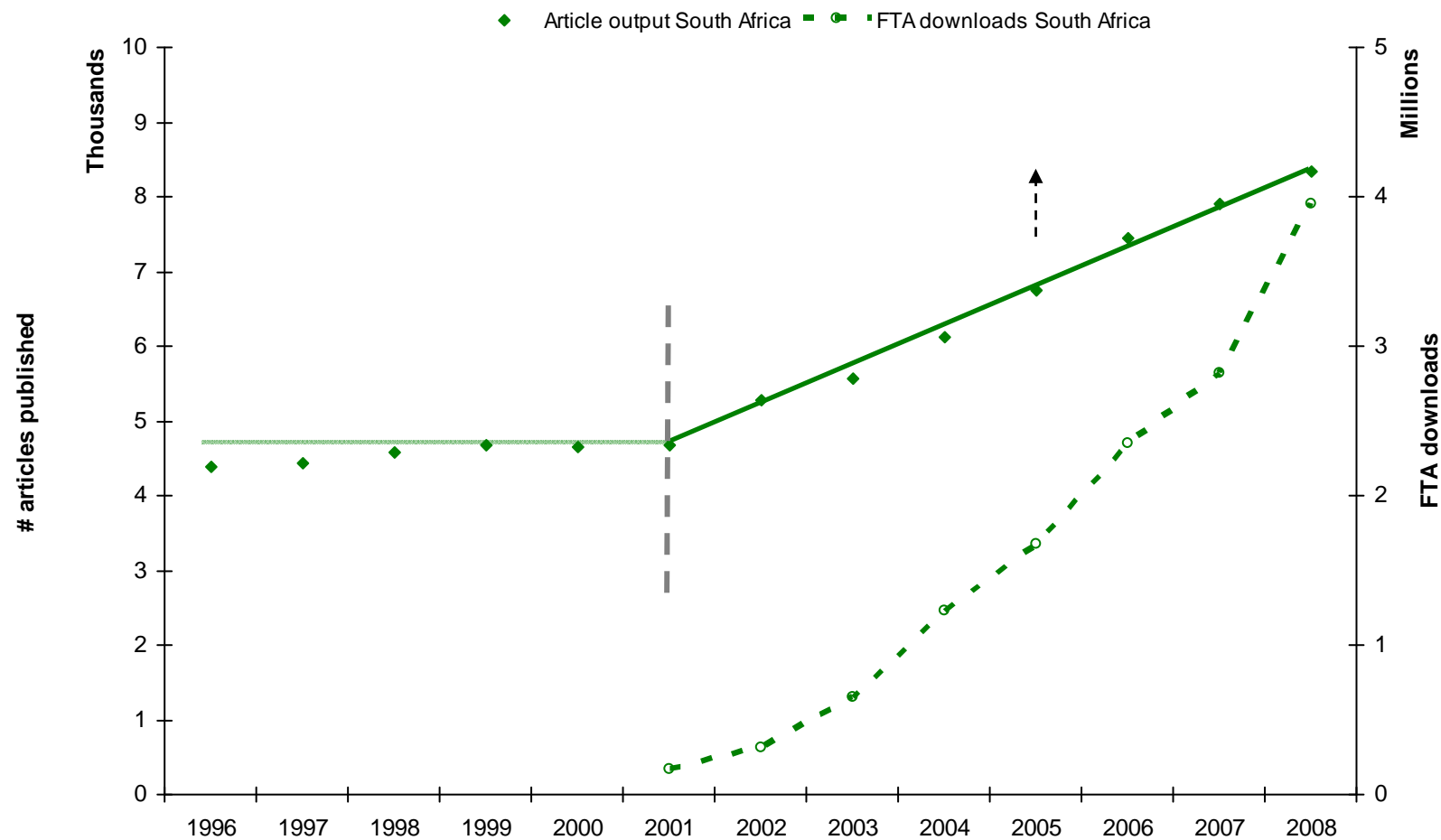
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This computer model quantifies the association between downloads and research outcomes. A doubling (100 per cent increase) in downloads, from 1 to 2 million, is statistically associated with dramatic increases in research productivity. The gearing becomes even stronger as the volume of downloads increases further. (Source: [“E-journals: their use, value and impact”](#))



Relationship between Number of Full Text Article requests from SD and number of articles published





Thank you very much!

A free white paper about phase II and its results and analysis will be available before the end of this year

www.elsevier.com/wps/find/librarianshome.librarians

twitter.com/library_connect

www.facebook.com/libraryconnect



Further reading: Academic libraries

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