• Introduction
  – Todd Carpenter, Managing Director, NISO

• Applying Performance Metrics in Libraries: Current Use
  – Steve Hiller, Director, Assessment and Planning, University of Washington Libraries

• Looking Ahead: The Future of Performance Metrics
  – Martha Kyrillidou, Senior Director, Statistics and Service Quality Programs, Association of Research Libraries (ARL)

Performance Measurement in Libraries

“Measuring performance is an exercise in measuring the past. It is the use of that data to plan an improved future that is all important.”
  – Peter Brophy (2006)

What is easy to measure is not necessarily what is desirable to measure.”
  – Martha Kyrillidou (1998)
Performance Metrics Definitions

Metrics and measures are often used interchangeably

- **Inputs** are resources which contribute to development and delivery of programs and services
- **Outputs** are resources & services produced and their use
- **Processes** are activities that turn inputs into outputs
- **Outcomes** are the effect of the library on the individual or the community
- **Performance indicators/measures** are quantified statements used to evaluate the performance of the library in achieving its objectives
- **Benchmarking** is a measurable performance goal which is a standard of progress for success (or best practices)

Performance Measurement Drivers

- Accountability (including academic accreditation)
- Advocacy
- Rapid changes in socio-info-techno environments
- Budgetary pressures
- Improvement
- Comparisons

Performance Metrics and Indicators

- Identify most important measurable indicators of library organizational performance to:
  - Library, user community, stakeholders
- Criteria for performance indicators should be: informative, reliable, valid, appropriate, practical, comparable (ISO 11620)
- Performance metrics and indicators should relate to institutional and library mission, goals and outcomes
- Performance metrics are usually quantifiable
- Performance metrics need context and meaning such as change over time, comparisons with others, other trends

A Few Good Resources to Consult on Performance Measurement and Metrics

- Standards and Definitions
  - NISO Z39.7, ISO 11620, COUNTER, ARL, NCES
Information Services and Use: Metrics & statistics for libraries and information providers — Data Dictionary
www.niso.org/dictionary

- Reporting unit and primary target population
- Human resources
- Collections
- Infrastructure
- Finances
- Services
- Appendices includes methods of measurement and measuring use of electronic library services

Measuring Quality: Performance Measurement in Libraries
40 Performance Indicators. Each includes background, definition, aims, methods, interpretation, use and examples.

Use Indicators
- Market penetration
- User satisfaction
- Library visits per capita
- Seat occupancy rate
- Number content units downloaded per capita
- Collection use (turnover)
- % stock not used
- Loans per capita
- % loans to external users
- Attendance at training sessions per capita

Library Metrics: Inputs
Focus on how big/how much
- Budgets (staff, collections, operations)
- Staff numbers
- Collections sizes
- Facilities
- Other related infrastructure (hours, seats, computers)
- Size of user communities and programs
- Ratios (staff per student)

ARL “Investment Index” measures inputs related to expenditures and staff numbers

Library Metrics: Outputs
Focus on usage
- Collections (print, electronic, ILL)
- Reference/information services
- Facilities (gate counts)
- Instruction sessions
- Discovery and retrieval
- Other Web sessions
- Ratios (circulation per faculty)

May indicate if “inputs” are used, but doesn’t measure user impacts/outcomes
Library Metrics: Processes

- Time/Efficiency (e.g., time to catalog a book)
- Costs/Economy (cost per article download)
- Quality/Accuracy
- Quantity/Workload
- Infrastructure measures (facilities, computing)

Covers conversion of inputs into outputs and used for accountability and budget

Two Major Trends in Library Assessment and Performance Measurement Since 1995

Customer-centered library
- All services and activities are viewed through the eyes of the customers
- Customers determine quality
- Library services/resources add value to the customer

Performance measurement
- Move from inputs/outputs to processes/outcomes
- More extensive range of data sources; systems generated data
- Standardized definitions
- Greater use of benchmarking
- Ties to strategic planning, accountability, advocacy

Focus on users has led to outcomes-based metrics

Enabled by Better Methods, Tools, Data, and Analysis

- Qualitative methods such as focus groups, interviews, user-centered design, and other socio-based approaches
- New standardized library assessment tools such as LibQUAL+®
- Large data sets with standardized data definitions
- Better data analysis and presentation tools emerging
- Stronger institutional commitment to assessment, accountability and performance metrics

Benchmarking

Benchmarking is concerned with use of best practices within and between organizations. Often done with peer libraries using input and output data from:
- Salaries
- Staffing
- Budgets
- Collections
- Services
- Facilities

May express as ratios such as librarians per student, book expenditures per faculty, seats per student etc. Can also set service expectations for users.
Dashboard Approach: Key Metrics/Measures as Indicators of Organizational Performance
London School of Economics Library

Key Metrics
- IT system availability
- New publication availability
- Queuing at help desk
- Document retrieval from main storage area

Latest Month’s Performance
- 100% of systems returned to full service after one day
- 100% of daily/weekly receipts available within 2 days
- Average queuing time 3 minutes
- Average retrieval time 15 minutes

Metrics and performance shown on library Web page:
http://www.lse.ac.uk/library/about/SLDs/SLDsHome.htm

Integrating Metrics with Strategy
A strategy without measures is just a wish and measures that are not aligned with strategy are a waste of time
Joseph R. Matthews (2008)

Some examples:
- Outcomes-based metrics
- Strategic planning
- Organizational performance models such as the Balanced Scorecard

Performance Metrics: Outcomes

What have library services/programs enabled individuals and communities to do? Focus points are:
- Satisfaction (surveys)
- Application of new skill/ability
- Change in behavior
- Identifying where value is added (e.g., higher productivity)

Outcome metrics and measures are usually tied to establishing objectives and criteria for success.

Example: Learning Outcomes Assessment

[Diagram of Learning Outcomes Assessment process]

Adapted by Nishel, 2009 from Oregon Colleges of Applied Technology Assessment Team, Librarians and Professional, Washington, 2009
Strategic Planning
Be S.M.A.R.T. in Writing Goals/Objectives

• Specific
  – the desired outcome or result is clearly defined
• Measurable
  – accomplishment can be measured and tracked
• Attainable
  – achievable, goal is challenging but realistic
• Relevant
  – results-oriented, in line with strategic directions and operations
• Timely
  – deadlines are set for accomplishment

University of Connecticut Strategic Plan  Goal 3:
Research, Scholarship, and Creative Activity

• Actively support faculty, student and staff research, scholarship and creative endeavors through quality instruction, liaison collaboration, collections, and information access.

• Strategies
  – Facilitate a collaborative and productive research process
  – Develop resources to meet the 21st century needs of our researchers
  – Enhance access to and awareness of research & publication at UConn
  – Develop intuitive, user-centered access to library resources and services
• Series of actions/objectives under each strategy

UConn Library Metrics for Strategic Goal of Research, Scholarship and Productivity

<table>
<thead>
<tr>
<th>Metric: Input, Output, Outcome, Process</th>
<th>Baseline</th>
<th>2014 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items in Digital <a href="mailto:Commons@UConn.edu">Commons@UConn.edu</a></td>
<td>4800</td>
<td>7200</td>
</tr>
<tr>
<td>Project partnerships between library and other campus, government, private entities</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Increase number of e-journals accessible to users by 4%</td>
<td>17,300</td>
<td>18,000</td>
</tr>
<tr>
<td>Increase number of objects digitized by 5% per year</td>
<td>65,800</td>
<td>69,100</td>
</tr>
<tr>
<td>Increase usage stats for digitized objects by 10% per year</td>
<td>573,167</td>
<td>630,480</td>
</tr>
<tr>
<td>Increase student and faculty use of the liaison program</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>Increase % of budget spent on digital format resources</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td>Annual number of research consultations by liaisons</td>
<td>1,000</td>
<td>2000</td>
</tr>
<tr>
<td>Perceived level of service quality in ranking of “print or electronic journal collections needed” (LibQUAL+® IC-8)</td>
<td>7.21</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Organizational Performance Models: The Balanced Scorecard

• A model for measuring organizational performance developed in the 1990’s by Kaplan and Norton that:
  – Focuses on key objectives
  – Helps ensure a proper balance between objectives
  – Organizes multiple statistics into an intelligible framework
• Clarifies and communicates the organization’s vision
• Provides a structured metrics framework for aligning assessment with strategic priorities and evaluating progress
• ARL Library Scorecard Pilot in 2009/10 with 4 libraries
Balanced Scorecard: Perspectives, Objectives, Measures and Targets

- Four perspectives: Customer; Stakeholder/Financial; Internal Processes; Learning and Growth
- Strategy Map identifies key objectives for each of the four perspectives
- Metrics developed to measure progress on achieving objectives
- Targets provide context tying metrics to strategy and articulate the level of success in achieving objectives
- Targets should be realistic but represent a stretch

University Of Washington Draft Scorecard Examples

**Teaching and Learning**

- **OBJECTIVE**
  Strengthen library role in undergraduate learning
- **MEASURE**
  Percentage of academic programs that have formal library involvement
- **TARGET**
  Library instruction sessions given in 70% of academic programs last year
- **RESULTS (2008-09)**
  56%

**New subject librarian roles**

- **OBJECTIVE**
  Librarians play an active role visible role in academic programs
- **MEASURE**
  Visibility and effectiveness of librarian liaisons in Libraries Triennial Survey
- **TARGET**
  60% of faculty and graduate students rate satisfaction with librarian liaison; average rating of at least 4.25/5
- **RESULTS (2010)**
  Faculty: 62%; 4.37
  Grad Students: 59%; 4.23

University of Virginia Balanced Scorecard (2007): Customer Perspective Objective/Target

**Objective:** Easy Access to Superb Info & Resources

**Measure/Target:** Circulation of New Monographs

- **Target1:** 60% of newly cataloged monographs should circulate within two years.
- **Target2:** 50% of new monographs should circulate within two years.
- **Result FY07:** Target 1 Met. – 62.9% circulated (16,363 out of 26,032)

- Fewer metrics are better
- Know what you’re measuring
- Select different types of metrics (input, output, process and outcome)
- Use a mix of data sources and frequencies
- Tie them to strategy and use them to improve operations
- Present internally and externally
- Provide context (comparisons, trends)

. . . And Some Questions

- Are we measuring what is important?
- How do metrics/indicators relate to outcomes?
- How much effort should go into developing metrics, methods and analysis?
- How do we best incorporate customer/stakeholder perspectives?
- How are performance metrics used for improvement?
- Are data management systems adequate?

Looking Ahead: The Future of Performance Metrics

Martha Kyrillidou
Senior Director of ARL Statistics and Service Quality Programs
Association of Research Libraries
NISO Webinar

http://www.climatequal.org/
MINES for Libraries™

• MINES is a transaction-based research methodology consisting of a web-based survey form and a random moments sampling plan.

• MINES typically measures who is using electronic resources, where users are located at the time of use, and their purpose of use in the least obtrusive way.

• MINES was adopted by the Association of Research Libraries (ARL) as part of the “New Measures” toolkit in May, 2003.

Organizational Performance Assessment (OPA)

• From 2005-2010, site visits by Jim Self, Steve Hiller, and partially, Martha Kyrillidou through the Effective, Sustainable and Practical Assessment program:

• Organizational Performance Assessment (OPA) will focus on:
  – Integrating Strategy Management
  – Preparing for Institutional Accreditation
  – Understanding User Behaviors for Service Development & Improvement
  – Enhancing Library Assessment
  – More information by November ....

Scenarios

http://www.arl.org/rtl/plan/scenarios/index.shtml

• How do we transform our organization(s) to create differential value for future users (individuals, institutions, and beyond), given the external dynamics redefining the research environment over the next 20 years?

• Critical uncertainties:
  – What will be “research” and how will it be done?
  – What will be different about users and their needs?
  – Digitization of content
  – Control of and Access to Information
  – Future of Intellectual Property
  – Technology
  – Viability of Higher Education
  – Funding and Budget Challenges
Critical Strategic Challenges


- Achieving and growing relevancy in the Future
- Ability to change and adapt – How do we transform ourselves?
- Rethinking individual versus collaborative identify
- Leadership and Personnel of the Future

VISIONS

“Library as legacy responsible for centuries of scholarly work
Library as infrastructure, space with technology expertise
Library as repository for long-term archive
Library as portal, guide to information of relevance and quality
Library as enterprise doing new business development for the academy
Library as public interest, providing advocacy for supportive information policies”

ARL Profiles: themes

http://directors.arl.org/wiki/institution-profiles

- Development/Fund Raising/Grantsmanship - activities/staffing/successes
- Digital publishing (i.e., OJS)
- E-science/Data curation and management
- Collaborations across all levels and on/off campus
- Scholarly communication (open access/author rights, etc.)
- Assessment activities (i.e., data portals, data driven decisions)
- Space utilization (innovative renovations/uses, gate counts, etc)

ARL profiles: themes (con’t)

http://directors.arl.org/wiki/institution-profiles

- Use of social networking tools/mobile applications
- Staffing changes (i.e., new or reworked positions, new job titles, degree requirements)
- Collaborative collection building/development
- Warehousing/remote storage (shared/individual, on/offsite, active use/dark archive, etc.)
- Instruction activities - current statistics include actual classroom instruction but do not capture efforts preparing materials for asynchronous instruction or the use of those materials (web guides, podcasts, etc.)
- Digitization efforts beyond or more specific than those already collected in the Supplementary Statistics (IRs, created and converted digital collections, etc.)

Library Scorecard

Assumptions underlying the initiative:

- Leadership involvement is key for linking the library scorecard to strategy
- Measures need to be focused on strategic issues
- Developing a framework/dashboard for implementing a strategy is useful
- Implementing a scorecard will lead to its improvement and refinements
- We do not advocate a single library scorecard but a scorecard appropriate for each library
Library annual “checkups”

• Diagnostic

• Commonalities
  – Budget
  – Service Quality perceptions/Satisfaction
  – Context (Qualitative) – profiles?

• Revision of the annual ARL Statistics

Combined Objectives
Customer perspective

<table>
<thead>
<tr>
<th>Virginia</th>
<th>Easy access to collections, tools, and spaces that support collaboration and study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ensure access to collections, tools and spaces for the future</td>
</tr>
<tr>
<td>Washington</td>
<td>Enhance role in teaching and learning</td>
</tr>
<tr>
<td></td>
<td>Realign and reshape teaching and learning</td>
</tr>
<tr>
<td></td>
<td>Accelerate transition to new service model</td>
</tr>
<tr>
<td>JHU</td>
<td>Provide productive user centered workspaces (virtual and physical)</td>
</tr>
<tr>
<td></td>
<td>Integrate and strengthen instructional support services and programs</td>
</tr>
<tr>
<td></td>
<td>Provide and preserve access to information resources and collections for current and</td>
</tr>
<tr>
<td></td>
<td>future scholars</td>
</tr>
<tr>
<td>McMaster</td>
<td>Build sustainable data curation infrastructure</td>
</tr>
<tr>
<td></td>
<td>Improve discover and access to scholarly resources</td>
</tr>
<tr>
<td></td>
<td>Integrate library into the University’s teaching, learning, and research mission</td>
</tr>
<tr>
<td></td>
<td>Create world class teaching and learning spaces</td>
</tr>
<tr>
<td></td>
<td>Strive for exemplary service that is responsive to user needs</td>
</tr>
</tbody>
</table>

Source: Donna Tolshon (Uva), Steve Hiller (UW), Liz Mengel (JHU), Vivian Lewis (McMaster)

ARL Board Task Force: Review Annual Statistics

• review the annual surveys and drop, revise, or add to the survey instruments and the instructions by focusing on issues of strategic importance in terms of describing research libraries and their contributions to research, teaching and learning:
  – ARL Statistics
  – ARL Supplementary Statistics
  – ARL Annual Salary Survey.
Value & Impact

From feelings, perceptions and behaviors to outcomes, value and impact

“I like the library because it provides all the resources I need and it helps me find answers to new questions. The library enhances my research/learning, it saves my time & money, and makes me, my colleagues/friends better learners, researcher, professionals .... “

How do we quantify these elements?

Value and ROI studies


Lib-Value IMLS grant: Potential Areas

[http://libvalue.cci.utk.edu/](http://libvalue.cci.utk.edu/)

Lib-Value IMLS: ARL outreach

- video from June event forthcoming
- profiles analysis forthcoming
- exploring linkages between models in development and LibQUAL+®, ClimateQUAL®, and MINES for libraries®
- ARL bimonthly report article by Regina Mays, Carol Tenopir and Paula Kaufman in a special issue on measurement
- presentations on value and impact as keynote theme and workshop by Neil Kaske and Roberta Shaffer
- papers on the ACRL value study and Lib-Value grant
- planning San Diego library assessment forum, presentations by Megan Oakleaf and Rachel Fleming-May on lit reviews
In-depth measurement ...

- “Challenge tests” when needed ....
- Library challenge tests for in-depth information seeking behaviors and specialized services
- Criterion: Purpose & Utility of the assessment information
- Infrastructure:

Data Management Model 1:
Central repository

- Central Repository characteristics:
  - Availability of usage statistics (including past statistics) directly from vendors
  - Data extraction and normalization of various data elements into a central database
  - Access rules that define different library and vendor profiles (ultimately this can be extended to end user profiles as well)
  - Ability to query the central database for data retrieval purposes
  - User interface that will generate reports, aggregate usage data, and provide comparisons
  - Ability for libraries to access this resource.

Data Management Model 2:
Decentralized repositories

- Provide the ability to develop different databases of vendor usage statistics by focusing on different data elements.
- Enable libraries to subscribe to multiple systems depending on the functionality they want. For example, there may be different requirements for report generation, aggregation, and comparison for members of a consortium like VIVA and OhioLINK, and for national reporting purposes in national policy statistics like the ones provided by ARL, ALA and NCLIS.

Data Management Model 3:
Distributed Access

- Standards-driven access to vendor usage data with no intermediate repository involved. This is a highly dynamic system of highly trusted databases of vendor usage statistics and gateways of access that give library users the ability to query the systems for maximum analytical impact.
Data management model 3: Distributed

Analytical tools

- Web-analytics software, ex. Google Analytics
- Mathematical modeling software, ex. SPSS
- Graphical software, ex. Dundas
- Qualitative Analysis software, ex. Atlas.ti
- Reporting software, ex. Crystal Reports
- Database systems, ex. Oracle
- Programming languages ....

Need for improved integrated analytical tools.

The future: integration, XML standards?

Analytical principles

- Analytical tools do not substitute thinking
- Know thyself through others, or
- Knowing others through yourself
- Nothing excessive (everything in moderation)
- Ethical approaches to privacy
- Ethics are about what is appropriate in a certain context
- Ethical considerations need to be legal or challenge legality in an ethical and legal way

Community of Practice

- ARL Library Assessment Forums held in conjunction with ALA on Friday at 1:30pm
- Qualitative and Quantitative Research Methods in Libraries (QQML)
- Northumbria International Conference on Performance Measurement and Metrics
- Library Assessment Conference by ARL, U of Virginia and U of Washington
Keynote plenary speakers
http://www.libraryassessment.org/

- Fred Heath
  - Assessment & Library Service Quality
- Joe Matthews
  - Performance Measures and Balanced Scorecard
- Danuta Nitecki
  - Assessment of Library Spaces
- Megan Oakleaf
  - Learning Outcomes and the Library
- Stephen Town
  - Value and Impact

Library Assessment Conference
Building Effective, Sustainable, Practical Assessment
Baltimore Maryland
October 25 - 27, 2010

Measure, Assess, Improve, Repeat:
Using Library Performance Metrics

Questions?

All questions will be posted with presenter answers on
the NISO website following the webinar: