



# Application of CBA/ROI in AAHSL for BQSI/MB&MEDLI

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# Use of retail value, CBA/ROI

- ⇒ Review basics
  - Why bother?
  - Retail value estimates
  - Cost benefit analysis
  - Return on investment
- ⇒ Use in academic medical college libraries
  - Weill Cornell Medical College
  - New York City cohort
  - Private medical college “peer group”
- ⇒ CBA/ROI of individual resource or service

# Some preliminary thoughts

- ⇒ “Libraries are not ends in themselves and they should not be supported because they have intrinsic value.” T. Scott Plutchak, JMLA, July 2004
- ⇒ “In the middle of difficulty lies opportunity.”  
Albert Einstein
- ⇒ “Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted.” Attributed to Albert Einstein

# More preliminary thoughts

## ⇒ Vision

- Institutional mission
- Alignment of library's mission with institution

## ⇒ Environment

- Clinical, administrative, community, research, education

# Why bother?

- ⇒ Value of numbers
  - Evidence-based librarianship -- it makes sense
  - Decision makers expect it
  - To demonstrate value added by the library
  - Document cost and time savings
  - It's a powerful tool
- ⇒ Knowing what to count
- ⇒ Count regularly, incorporate into daily work flow, find ways to make it easy
- ⇒ Show library's effect on institutional bottom line
- ⇒ Use in advocacy and marketing efforts
- ⇒ Informed, reasonable "guess-timate" as alternative

# Institutional buy-in: required

- ⇒ Discuss with finance officers, chief operating offices, your boss, etc.
- ⇒ Form a working group, broad representation
- ⇒ Everyone must agree on concept and the data entered
  
- ⇒ End result: administration better understands the value of the library and recognizes need for expenses of resources and services

# Retail value -- what is it?

- ⇒ Value of resource or service on the open market
- ⇒ What would user have to pay to get it elsewhere?
- ⇒ MidContinental Region (MCR) developed calculator tool -- easy to use
  - First, understand what statistics to collect
  - Then gather data
- ⇒ Considerations
  - Would your institution pay the actual retail cost?
  - ... provide resources and services for all staff?

# Retail value calculator

- ⇒ Types of resources and services
- ⇒ Number of uses in your library
- ⇒ Add specialized services or resources

**Value of Library Resources and Services**

**Your institution realizes a benefit of \$ for every one dollar budgeted.**

Where is your library?

What type of library is it?

Library Annual Budget - you *must* enter your library's annual budget without commas

Number of months of stats you are using:

Number of Uses	Library Resources or Services	Cost of Resource or Service	Value of Resources or Services
<input type="text"/>	<a href="#">Print and e-Books used</a> (in house, checked out or online)	<input type="text" value="125"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Print journals used</a> (in house or checked out)	<input type="text" value="35"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">E-Journal articles</a> accessed	<input type="text" value="35"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Document Delivery</a> (Items borrowed for/delivered to users)	<input type="text" value="18"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Reference questions</a> Answered	<input type="text" value="45"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Mediated searches</a>	<input type="text" value="75"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Class hours taught</a> (Sum of students/class x hours/class )	<input type="text" value="30"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">AVs used</a> or borrowed	<input type="text" value="150"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Self service photocopies</a>	<input type="text" value=".10"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Meeting room use</a>	<input type="text" value="50"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<a href="#">Hours of computer use</a> (i.e. Internet, MS Word, etc.)	<input type="text" value="12"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<input type="text" value="Add another service or resource"/>	<input type="text"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<input type="text" value="Add another service or resource"/>	<input type="text"/>	\$ <input type="text" value="0.00"/>
<input type="text"/>	<input type="text" value="Add another service or resource"/>	<input type="text"/>	\$ <input type="text" value="0.00"/>
<input type="button" value="Clear Form"/>			\$ <input type="text" value="0.00"/>

# Retail value form

- ⇒ Definitions and explanations
- ⇒ *E.g.* Print and e-books
  - Estimated retail value: \$125
  - Explanation of value: Average cost of a print book purchased by an academic medical library in 2008
  - Definition: Print and e-books used in the library, checked out by users, or accessed online.  
Determine what data your vendors provide and try to be consistent across vendors. Consider TOC, Chapters or Pages viewed.

# Retail value form: info at top

- ⇒ Use drop-down menus to enter:
  - Where is your library (state)?
  - What type of library is it?
- ⇒ Enter library's annual budget (no commas)
- ⇒ Enter number of months of stats

# Retail value form: middle

- ⇒ Number of uses
- ⇒ Library resource or service
- ⇒ Cost of resource or service
- ⇒ Value of resource or service
- ⇒ Blanks at end of list for special resources and services
  - Enter number of uses, name of resource or service, and value
- ⇒ All calculations done automatically

# Retail value form: specifics

- ⇒ Print and e-books
- ⇒ Print journals used
- ⇒ E-journals accessed
- ⇒ Document delivery
- ⇒ Reference questions
- ⇒ Mediated searches
- ⇒ Class hours taught
- ⇒ AVs used
- ⇒ Self service photocopies
- ⇒ Meeting room use
- ⇒ Hours of computer use
- ⇒ Add another service or resource

# Retail value form: bottom

- ⇒ Total value of resources and services -- the “bottom line”
- ⇒ But ... at the top:
  - All calculations done behind the scenes
  - **Your institution realizes a benefit of \$x.xx for every one dollar budgeted**
- ⇒ This is the ***RETAIL VALUE***

# Cost benefit analysis (CBA)

- ⇒ Total benefit divided by total cost
  - Ratio that shows value of benefits for each dollar spent
  - Includes these factors: usage, retail value, user time saved, budgeted cost (or actual) and staff time
- ⇒ Expressed as dollars of benefit per dollar spent
  - \$3.50/\$1.00 or \$3.50 benefit for each \$1 spent

# Return on investment (ROI)

- ⇒ Interest rate “earned” on investment
- ⇒ Determine the total amount spent
- ⇒ Determine the value of the benefits realized
- ⇒ Total costs are subtracted from the total benefits and then divided by the total costs
- ⇒ Multiply by 100 to get percentage
- ⇒ Includes same factors as CBA, uses same form

# CBA/ROI calculator

- ⇒ Also developed by the MCR
- ⇒ Uses \$60,000 annual salary for users and \$45,000 for library salary budget
- ⇒ 2080 hours = 40-hour work week (35 hours = 1820; 37.5 hours = 1950)
- ⇒ Other values as from retail value calculator

<b>Salary Information:</b>	User's Average Annual Salary	\$ <input type="text" value="60000"/>	User Hours Worked Per Year	<input type="text" value="2080"/>	Library Salary Budget	\$ <input type="text" value="45000"/>

Benefits		Costs		TOTAL Benefit	TOTAL Cost
<b>Books used (print and electronic)</b>				\$ <input type="text" value="0"/>	\$ <input type="text" value="0"/>
Number borrowed or used	<input type="text"/>				
Average retail cost of a book	\$ <input type="text" value="125"/>	Book budget	\$ <input type="text" value="0"/>		
User time saved for each book borrowed (in 10ths of an hr)	<input type="text" value="0"/>	Portion of all staff time devoted to the book collection (order, receive, catalog, process,shelve,etc) in 10ths	<input type="text" value="0"/>		
<b>Journals used (print and electronic, in house or checked out)</b>				\$ <input type="text" value="0"/>	\$ <input type="text" value="0"/>
Number articles read by all users	<input type="text"/>				
Per article price from a vendor	\$ <input type="text" value="35"/>	Journal budget (print and electronic)	\$ <input type="text" value="0"/>		
User time saved per article available through library (in 10ths of an hr)	<input type="text" value="0"/>	Portion of all staff time devoted to journal collection (order, license, receive, process, manage, shelve, etc.) in 10ths	<input type="text" value="0"/>		
<b>Database use</b>				\$ <input type="text" value="0"/>	\$ <input type="text" value="0"/>
Database sessions	<input type="text"/>				
Average retail cost of a single search by a broker	\$ <input type="text" value="75"/>	Library's Cost for Database(s)	\$ <input type="text" value="0"/>		
User time saved for each search session	<input type="text" value="0"/>	Portion of all staff time devoted to supporting the database	<input type="text" value="0"/>		

<input type="button" value="Clear Form"/>	Total Benefits Value: <input type="text" value="0.00"/>	Total Costs: <input type="text" value="0.00"/>
Benefit/Cost Ratio - \$ Benefit for each \$ spent:		ROI %:
<input type="text" value="0.00"/>		<input type="text" value="0.00"/>

# Weill Cornell Medical Library

- ⇒ Medium-sized medical college library
- ⇒ Also serve New York-Presbyterian Hospital (68th St. location) and affiliates
- ⇒ Basic stats (FY08):
  - Print collection: 190,672 total vol, 72,055 books, 199 current subs
  - Electronic resources: 5,713 journals, 4,198 books, 175 databases
  - Open 108 hours per week
  - Gate count: 232,199 (about 4500/week)
  - About 25,000 ASF, 200 user seats, 62 computers for users (incl 25 laptops)

# Value of the Weill Cornell Medical Library

- ⇒ \$4,000,000 budget (round numbers)
  - “Value” of current subscriptions and licenses is about \$2.5 million, shared with WCMC-Qatar
  - NYC share = \$1,500,000
- ⇒ Data collection is a regular practice
- ⇒ Major surveys to which we contribute
  - AAHSL
  - Cornell University Libraries / ARL
  - Residency program accreditation
  - Collection value statement (insurance)
  - Easier if it's part of daily routine

# Weill Cornell Medical Library Retail Value

Number of Uses	Library Resources or Services	Cost of Resource or Service	Value of Resources or Services
<input type="text" value="15000"/>	<a href="#">Print and e-Books used</a> (in house, checked out or online)	<input type="text" value="125"/>	\$ <input type="text" value="1875000.00"/>
<input type="text" value="5000"/>	<a href="#">Print journals used</a> (in house or checked out)	<input type="text" value="35"/>	\$ <input type="text" value="175000.00"/>
<input type="text" value="500000"/>	<a href="#">E-Journal articles</a> accessed	<input type="text" value="35"/>	\$ <input type="text" value="17500000.00"/>
<input type="text" value="5000"/>	<a href="#">Document Delivery</a> (Items borrowed for/delivered to users)	<input type="text" value="18"/>	\$ <input type="text" value="90000.00"/>
<input type="text" value="10000"/>	<a href="#">Reference questions</a> Answered	<input type="text" value="45"/>	\$ <input type="text" value="450000.00"/>
<input type="text" value="100"/>	<a href="#">Mediated searches</a>	<input type="text" value="75"/>	\$ <input type="text" value="7500.00"/>
<input type="text" value="1000"/>	<a href="#">Class hours taught</a> (Sum of students/class x hours/class )	<input type="text" value="30"/>	\$ <input type="text" value="30000.00"/>
<input type="text" value="50"/>	<a href="#">AVs used</a> or borrowed	<input type="text" value="150"/>	\$ <input type="text" value="7500.00"/>
<input type="text" value="0"/>	<a href="#">Self service photocopies</a>	<input type="text" value=".10"/>	\$ <input type="text" value="0.00"/>
<input type="text" value="0"/>	<a href="#">Meeting room use</a>	<input type="text" value="50"/>	\$ <input type="text" value="0.00"/>
<input type="text" value="150000"/>	<a href="#">Hours of computer use</a> (i.e. Internet, MS Word, etc.)	<input type="text" value="12"/>	\$ <input type="text" value="1800000.00"/>
<input type="text" value="50"/>	<input type="text" value="Expanded author/researcher support"/>	<input type="text" value="500"/>	\$ <input type="text" value="25000.00"/>
<input type="text" value=""/>	<input type="text" value="Add another service or resource"/>	<input type="text" value=""/>	\$ <input type="text" value="0.00"/>
<input type="text" value=""/>	<input type="text" value="Add another service or resource"/>	<input type="text" value=""/>	\$ <input type="text" value="0.00"/>
<input type="button" value="Clear Form"/>			\$ <input type="text" value="21960000.00"/>

# WCMC retail value

⇒ One dollar budgeted realizes a benefit of **\$5.49**

## Value of Library Resources and Services

Your institution realizes a benefit of **\$5.49** for every one dollar budgeted.

Where is your library?

What type of library is it?

Library Annual Budget - you *must* enter your library's annual budget without commas

Number of months of stats you are using:

<b>Salary Information:</b>	User's Average Annual Salary	\$ <input type="text" value="75000"/>	User Hours Worked Per Year	<input type="text" value="1820"/>	Library Salary Budget	\$ <input type="text" value="55000"/>
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Benefits		Costs		TOTAL Benefit	TOTAL Cost
<b>Books used (print and electronic)</b>				\$ <input type="text" value="1998630"/>	\$ <input type="text" value="127500.0"/>
Number borrowed or used	<input type="text" value="15000"/>				
Average retail cost of a book	\$ <input type="text" value="125"/>	Book budget	\$ <input type="text" value="100000"/>		
User time saved for each book borrowed (in 10ths of an hr)	<input type="text" value="0.2"/>	Portion of all staff time devoted to the book collection (order, receive, catalog, process,shelve,etc) in 10ths	<input type="text" value=".5"/>		
<b>Journals used (print and electronic, in house or checked out)</b>				\$ <input type="text" value="2162100"/>	\$ <input type="text" value="1055000"/>
Number articles read by all users	<input type="text" value="50000"/>				
Per article price from a vendor	\$ <input type="text" value="35"/>	Journal budget (print and electronic)	\$ <input type="text" value="100000"/>		
User time saved per article available through library (in 10ths of an hr)	<input type="text" value=".2"/>	Portion of all staff time devoted to journal collection (order, license, receive, process, manage, shelve, etc.) in 10ths	<input type="text" value="01.0"/>		
<b>Database use</b>				\$ <input type="text" value="1434075"/>	\$ <input type="text" value="413750.0"/>
Database sessions	<input type="text" value="15000"/>				
Average retail cost of a single search by a broker	\$ <input type="text" value="75"/>	Library's Cost for Database(s)	\$ <input type="text" value="400000"/>		
User time saved for each search session	<input type="text" value=".5"/>	Portion of all staff time devoted to supporting the database	<input type="text" value=".25"/>		

<input type="button" value="Clear Form"/>	Total Benefits Value: <input type="text" value="37960380.00"/>	Total Costs: <input type="text" value="1596250.00"/>
Benefit/Cost Ratio - \$ Benefit for each \$ spent:		ROI %:
<input type="text" value="23.78"/>		<input type="text" value="2278.10"/>

# WCMC CBA & ROI

## ⇒ Cost/Benefit Analysis

- **\$23.78** benefit for each \$1.00 spent
- As though spending almost \$38 million

## ⇒ Return on Investment

- **2,278.1%**

## ⇒ Importance of institutional buy-in

# Local comparisons

- ⇒ Albert Einstein
  - ⇒ Columbia
  - ⇒ Mt. Sinai
  - ⇒ NYU
  - ⇒ Weill Cornell
- 
- ⇒ Also Memorial Sloan-Kettering Cancer Center

# Nationwide comparisons

- ⇒ Stanford
- ⇒ Yale
- ⇒ Univ Chicago
- ⇒ Harvard
- ⇒ Johns Hopkins
- ⇒ Wash U
- ⇒ Duke
- ⇒ Columbia
- ⇒ Univ Rochester
- ⇒ Case Western
- ⇒ Univ Penn
- ⇒ Univ Pitt
- ⇒ Weill Cornell
- ⇒ UCSF (educ prog)

# Individual resource or service -- values for ILL services

## ⇒ Document Delivery services

- Librarian's time ( $\$30/\text{hr} \times .25$ ) = \$7.50
- Fee charged by lending library = \$11
- TOTAL: \$18.50

## ⇒ Pay per view

- Patron's time ( $\$33/\text{hour} \times .3$ ) = \$10
- Provider's fee = \$35 - \$65
- TOTAL: \$45 - \$75

# CBA of ILL service

$$\$45 / \$18.50 = \$2.43$$

(cost of pay per view /one ILL)

**\$2.43** of benefit for each dollar spent  
by library on ILL service

## ROI of ILL service

$$\left( (\$45 - \$18.50) / \$18.50 \right) \times 100 = 143\%$$

(cost of pay per view - cost for one ILL / cost for one ILL)

**143%** return on investment in ILL services

# Some final words

- ⇒ Retail costs, CBA/ROI calculators
- ⇒ Examples from Weill Cornell and ILL
- ⇒ NNLM collecting data nationwide
- ⇒ Contribute your numbers to the database
- ⇒ Confidential -- no personal info saved, only state and type of library

# Preliminary data

⇒ NER	\$7.93	PNR	\$5.13
⇒ SCR	\$7.66	GMR	\$4.77
⇒ SEA	\$6.76	PSR	\$4.70
⇒ MAR	\$6.42	Not US/Can	\$2.80
⇒ MCR	\$5.59		

OVERALL AVERAGE      \$5.56

# Resources for follow-up

- ⇒ <http://nnlm.gov/mcr/evaluation/valuation.html>
- ⇒ <http://nnlm.gov/mcr/advocacy/>
- ⇒ <http://nnlm.gov/mcr/evaluation/calculator.html>
- ⇒ <http://nnlm.gov/mcr/evaluation/roi.html>

# Questions?

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