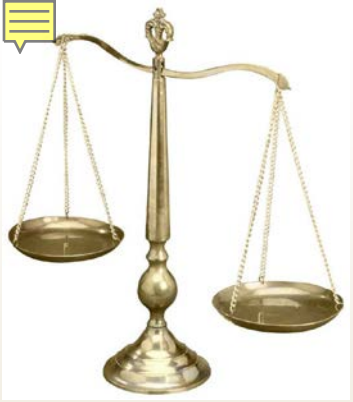
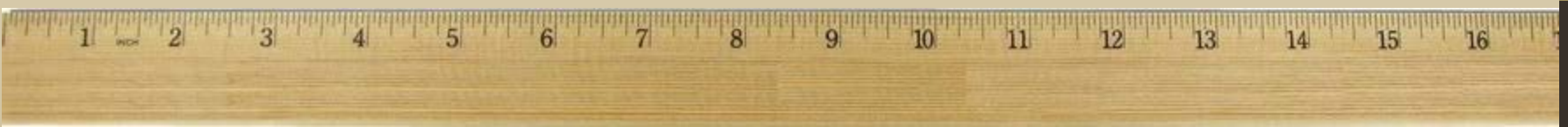
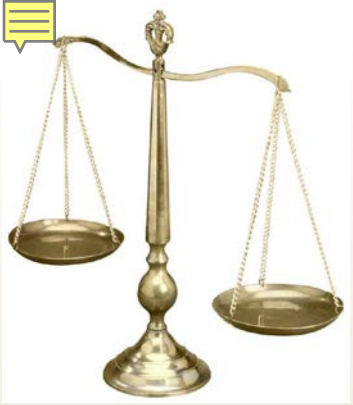


Assessment Challenges in Digital Libraries

Jody L. DeRidder
Head, Digital Services
University of Alabama Libraries
November 11, 2014

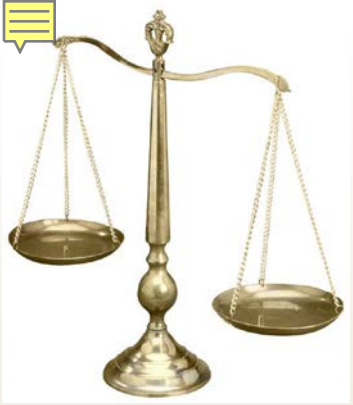




Questions

How do you know if you are using your resources wisely?

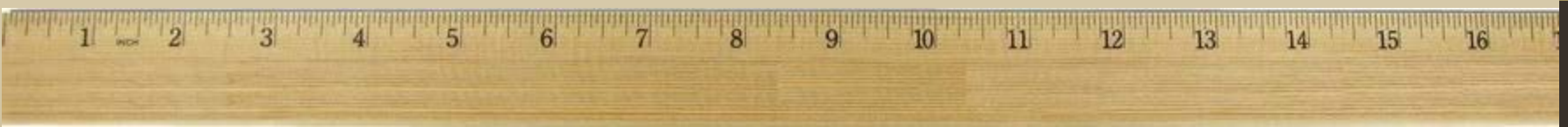
- Available expertise
- Staff capabilities
- Hardware
- Software
- Space
- Time
- Expenditures

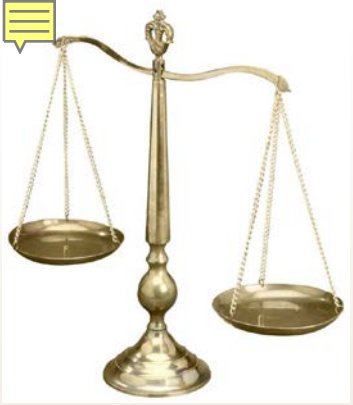


Questions

How do you know if your web interface works for your users?

- Information
- Instructions
- Intuitiveness
- Navigation
- Search & retrieval
- Browse
- Content extraction



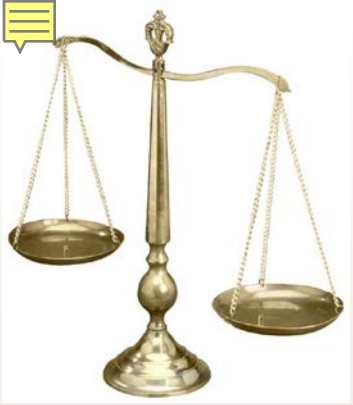


Questions

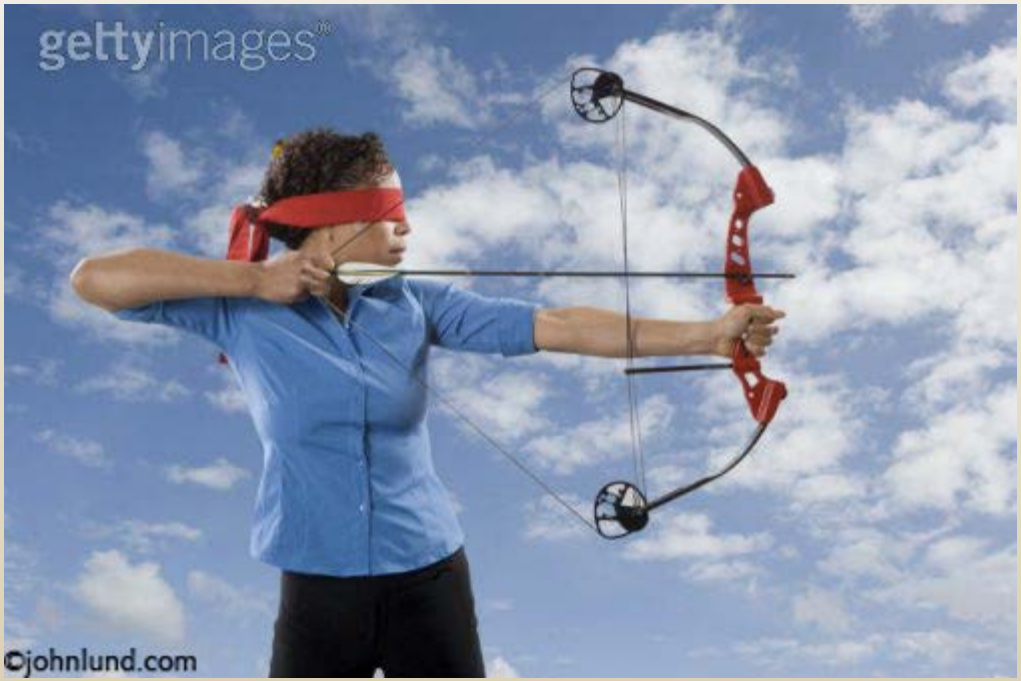
How do you know if the content you provide is what they need?

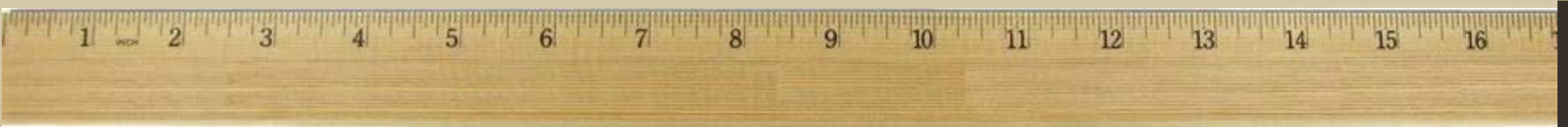
- Topical areas
- Time frame
- Type of materials
- Format
- Metadata

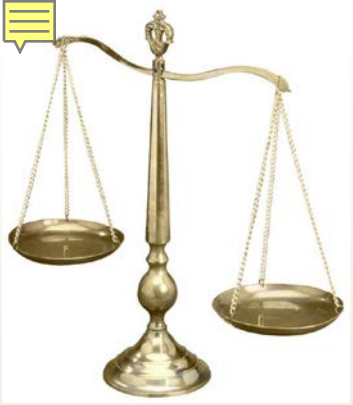
Who are our users???



Without answers…



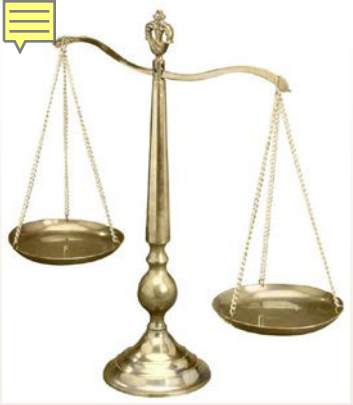




The Answer

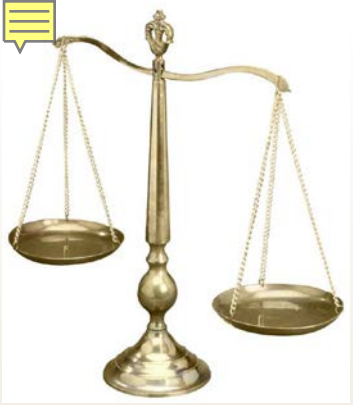
Assessment:

- Of content selection
- Of presentation & delivery
- Of user needs
- Of workflows and processes
- Of indirect costs



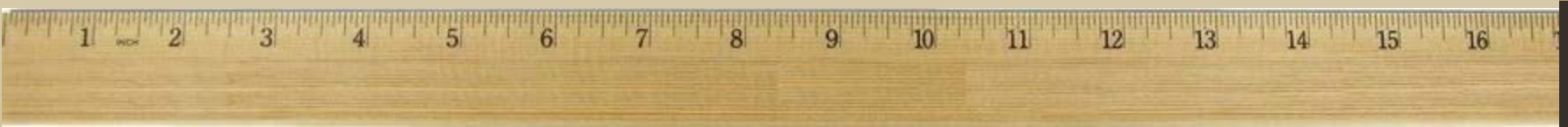
Framework

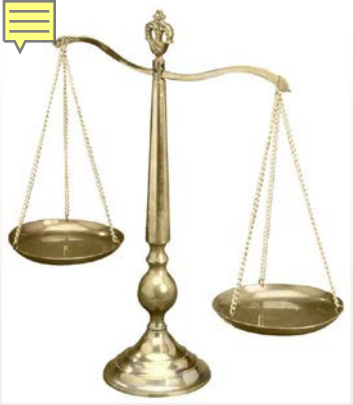
- **Assessing Costs**
- **Meeting User Needs**
- **Assessing Benefits**



Assessing Costs

1. Tracking staff time
2. Factoring in overhead
3. Cross-departmental and consortial issues
4. Assessing cost of assessment

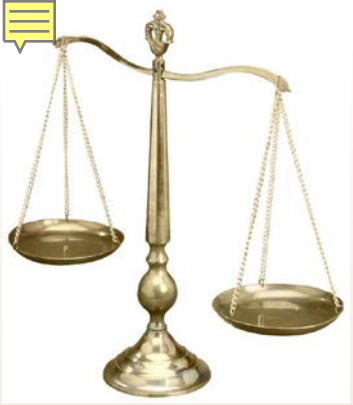




Assessing Costs

Example: comparing time by staff member

name	hours	items	scans	items/hour	scans/hour
Sally	21.75	312	845	14.34	38.85
Joe	**26.25**	519	**1147**	19.77	43.70
Fred	16	260	1127	16.25	**70.44**
Jenny	9.5	218	432	**22.95**	45.47
Karen	**55**	**712**	**1172**	12.95	21.31

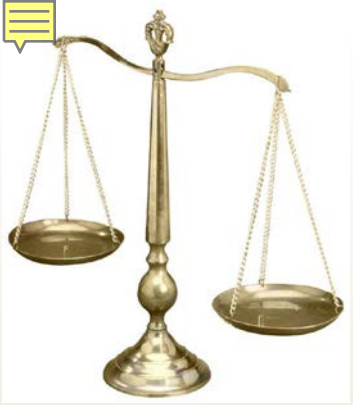


Assessing Costs

Example: by capture type

Type of scanner	minutes of scanner time	minutes of optimizing time	total min.
Overhead capture	**165**	20	**185**
Flatbed	**395**	120	**515**
Overhead scanner	**300**	120	420
Bookdrive	25	60	**85**
Batchfeeder	3	60	63

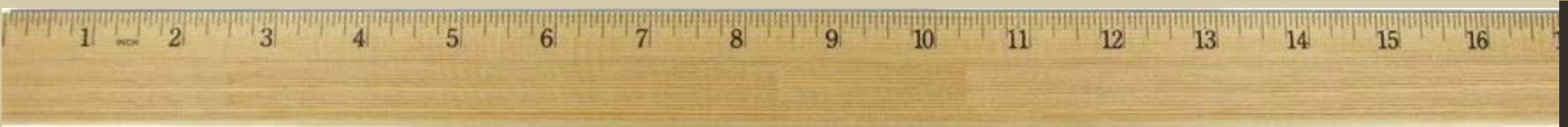
* Numbers based on a 115-item photo collection

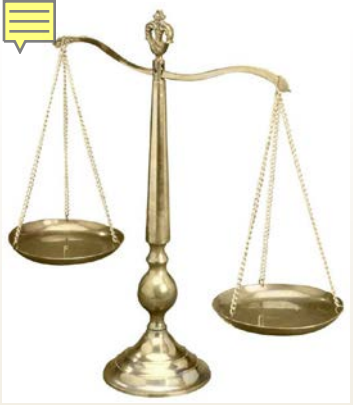


Assessing Costs

Tracking staff time

- Communications
- Training
- Preparation
- Digitizing & optimizing
- Quality control
- Metadata
- Uploads

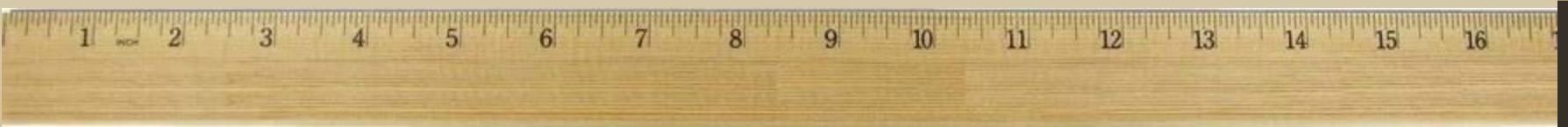


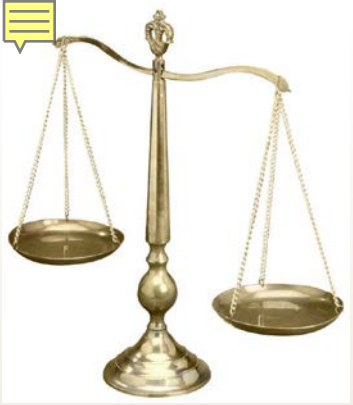


Assessing Costs

Example: comparing time by content type

Collection name (type)	#items	#scans	Metadata per item
Kappa Alpha (photos)	164	164	10.98 min.
Cahill Papers (handwritten letters)	305	1118	2.77 min.



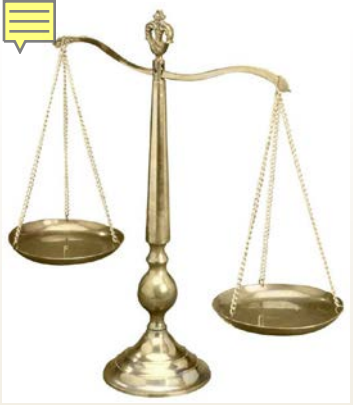


Assessing Costs

Example: mass digitization versus item description

Work flow method	Proces-sing	Initial meta-data	Prep time	Verifica-tion and data entry	Quality control	Represen-tations and links	Metadata remedi-ation	Total minutes per 100 scans	Total cost per work flow
Item-level	111	93	1.26	25	10	19	207	824.86	246.72
Mass method	45	0	7	8.33	6	9	0	433.93	79.5
Minutes saved	66	93	-5.74	16.67	4	10	207	390.93	
Cost per minute	0.43	0.18	0.22	0.15	0.22	0.22	0.57		
Dollars saved per 100 scans	28.6	17.05	-1.24	2.5	0.87	2.17	117.29		167.22

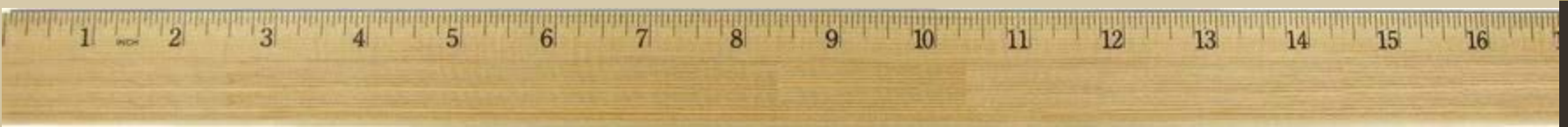
Not shown: scanning/optimization and file transfer costs: $53.99 per 100 scans for each work flow.

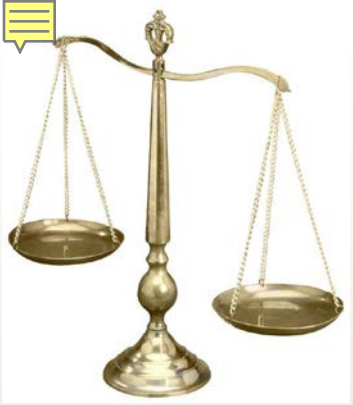


Assessing Costs

Factoring in overhead:

- Communications
- Software, hardware
- Supervision & training
- Institutional support

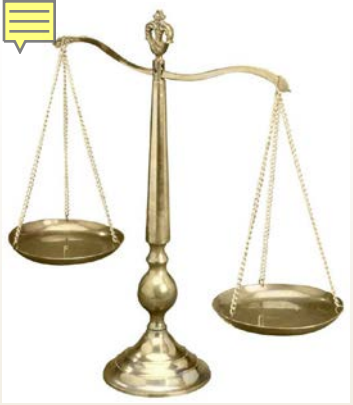




Assessing Costs

Example: overhead…

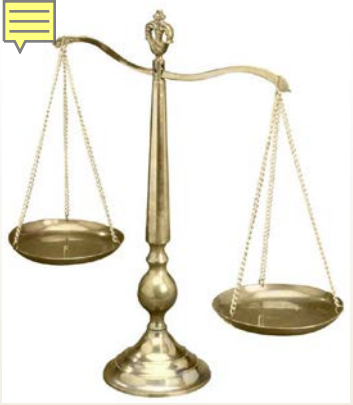
Desktop and software	Cost	Amortization
Dell OptiPlex 7101 8 GB ram, intel Core i7, 7 Pro windows, 1TB hard drive, 64 bit, MS office professional, optical mouse, ultrasharp 24 premier color monitor, USB quietkey keyboard, 3 year warranty, usb soundbar, Belkin surge protector	2,569.00	Over 3 years @ 50 weeks per year, (2569/3)/(50x35) = $0.49 per hour
Adobe Creative Cloud, Schools and Universities	$300/year	over one year @ 50 weeks per year, 35 hours use per week: 300/(50x35) = $0.1714 per hour
Total amortized cost per hour for desktop with software		**$.66**



Assessing Costs

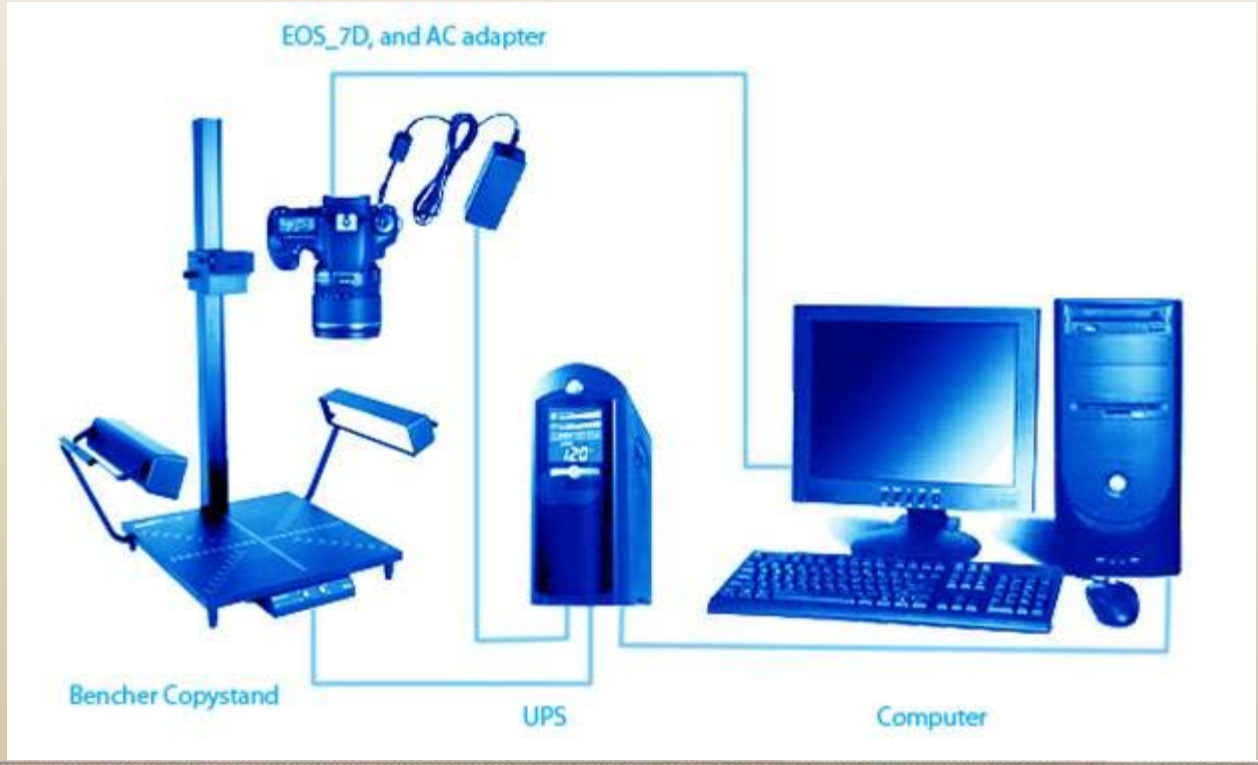
Example: comparing costs by equipment type

Equipment	cost	Amortization method
Flatbed		
Epson 11000XL-photo scanner (flatbed)	3,030.00	Over 5 years @ 50 weeks per year, 35 hours use per week: (3030/5)/(50x35) = $0.35 per hour
With desktop (.66), total amortized cost per hour		**$1.01**
Captureback overhead		
Total	30,088.50	Over 5 years @ 50 weeks per year, 35 hours use per week: $3.44 per hour
With desktop (.66), total amortized cost per hour		**$4.10**

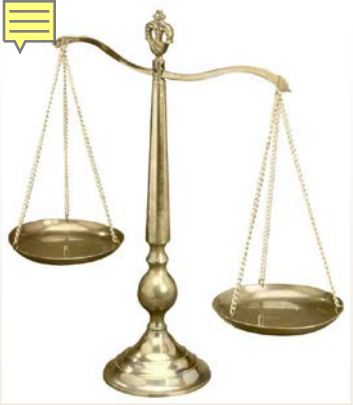


Assessing Costs

Result: low-cost overhead capture system



Designed by Jeremiah Colonna-Romano; Estimated cost $5k

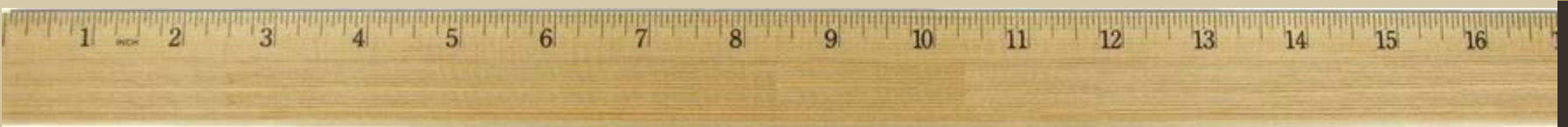


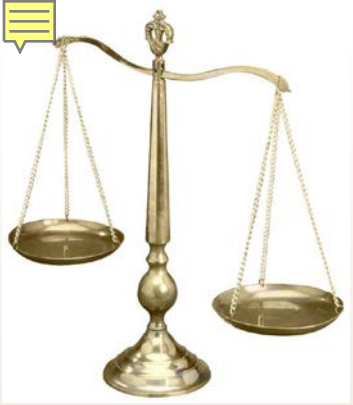
Assessing Costs

Example: using the data to make decisions

Flatbed:
$1.01 per hour /13.4 images =
$ 0.075 per image

Overhead capture:
$.95 per hour /37.5 images per hour =
$ 0.025 per image

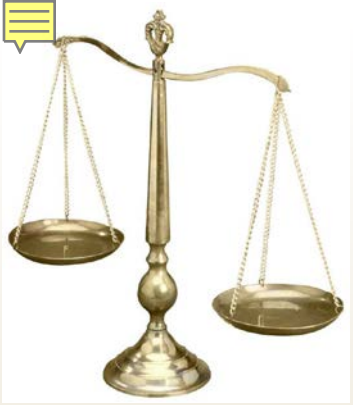




Assessing Costs

Example: cost estimate for digitization project

Type of materials
Type of digitization equipment
Amount of prep work needed
Amount of metadata/documentation per item
Quality Control levels preferred
Average shift length (10 min setup; 5 min breakdown)

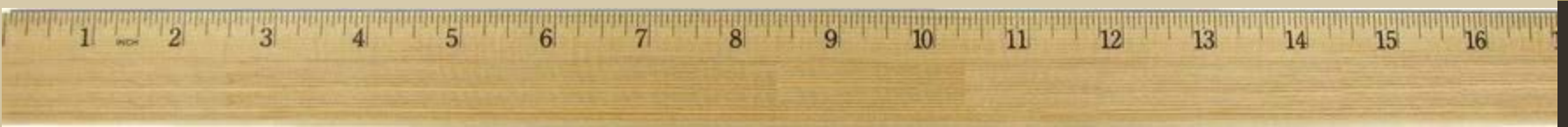


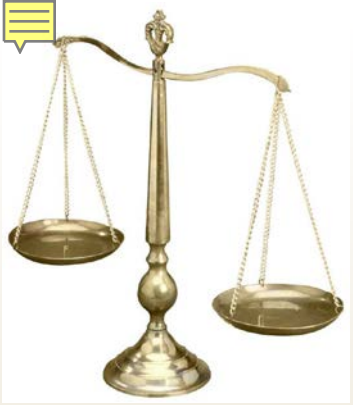
Assessing Costs

Example: cost estimate for digitization project

Staff pay levels per hour: • digitization/optimization • metadata/documentation • quality control
General overhead cost (per hour)
Number of captures expected
Average number of captures per item

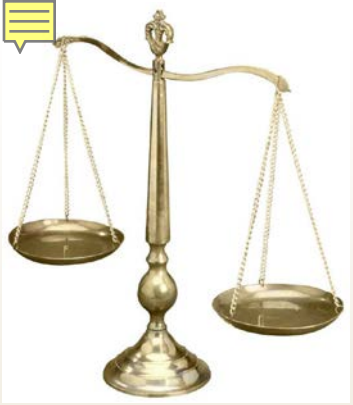
http://statelibrarync.org/plstats/digitization_calculator.php





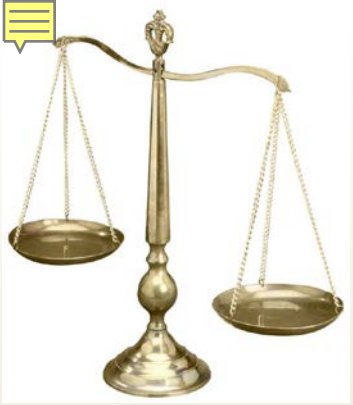
Framework

- **Assessing Costs**
- **Meeting User Needs**
- **Assessing Benefits**



Meeting User Needs

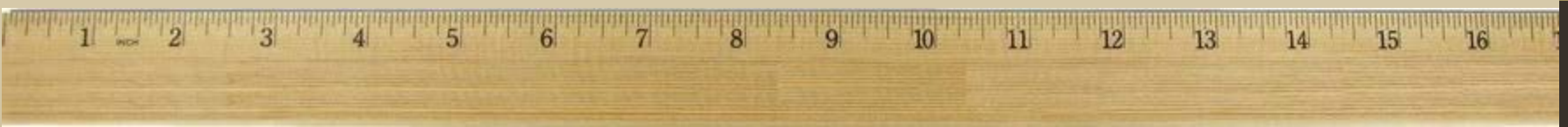
1. Identifying users
2. Identifying user needs
3. Finding and addressing gaps
4. Communicating findings effectively
5. Implementing modifications
6. Measuring improvements

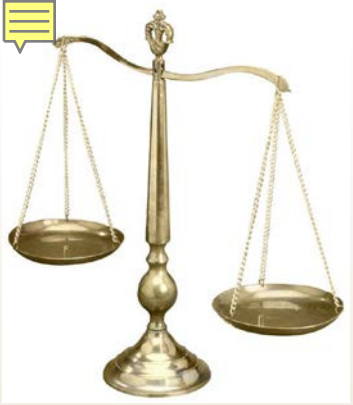


Meeting User Needs

Identifying users:

- IP addresses
- Web surveys
- Target audience surveys
- Other?

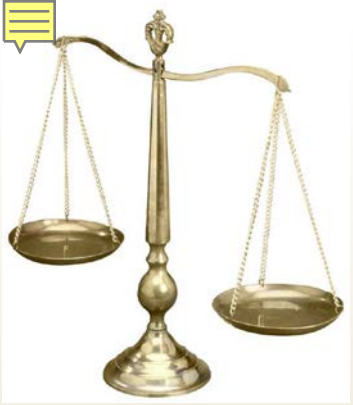




Meeting User Needs

Identifying user needs

- Feedback forms
- Web surveys
- Focus groups
- Quantitative studies
- Qualitative studies
- Study site use and failed searches



Meeting User Needs

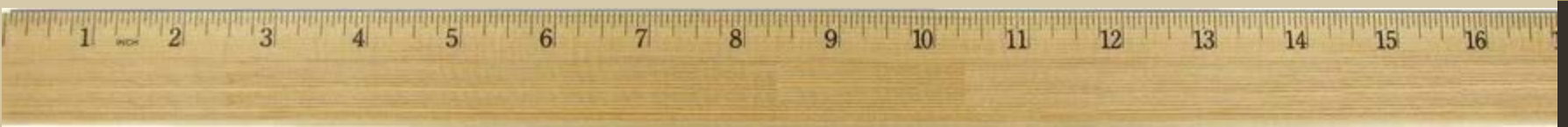
Example: quantitative study

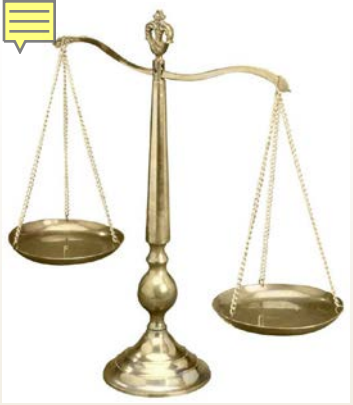
Set A: Nichols	Question 3			
Participant #	**Start time**	**End time**	**Outcome**	**Elapsed time**
5	02:47	09:26	gave up	06:39
9	04:00	05:17	gave up	01:17
10	03:36	04:25	gave up	00:49
			0%	

AVERAGE SUCCESS: 44.44%
AVERAGE TIME: 1.70 MIN

Set B: Nichols	Question 3			
Participant #	**Start time**	**End time**	**Outcome**	**Elapsed time**
1	05:41	06:03	success	00:22
11	03:57	04:36	success	00:39
12	03:09	03:30	success	00:21
			100%	

AVERAGE SUCCESS: 77.8%
AVERAGE TIME: 1.07 MIN





Meeting User Needs

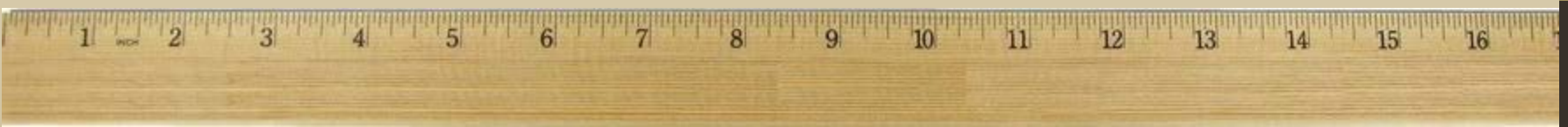
Quantitative study results:

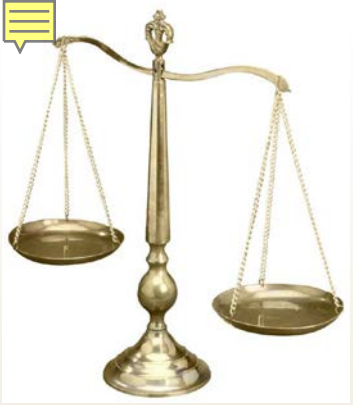
Findings: not clear cut at all!

- Discrepancies in use of fields
- Outliers skewed time measurements
- Participants said they found one set of metadata easier to use
- But their success rate/times said otherwise!

And:

- Staffing changes since study began
- Differences in what was identified as an item

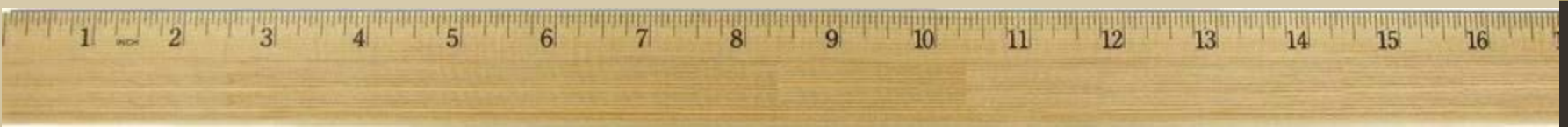


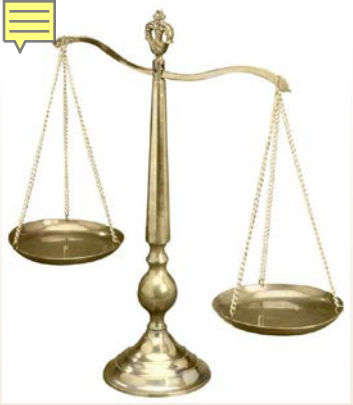


Meeting User Needs

Example: quantitative study 2

Participant #	Q2: estate document				Q4: family history			
	1st click	All clicks	Time	Success	1st click	All clicks	Time	Success
1	2	3	13	Y	14	9	52	Y
13	2	3	18	N	1	3	10	Y
16	1	7	108	Y	1	4	15	Y
Average	1.35	4.70	24.15		2.10	4.50	16.55	
%				95.00				95.00



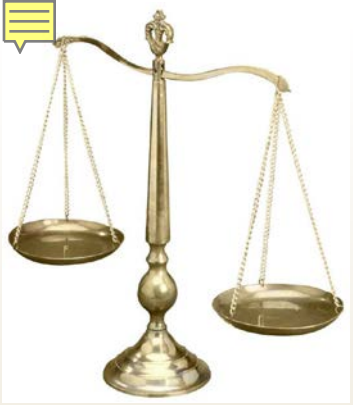


Meeting User Needs

Results: identifying patterns

61% longer to **first click** if no background in history
21% **more clicks** if no background in history
55% **more time** if no background in history
3% **less success** if no background in history

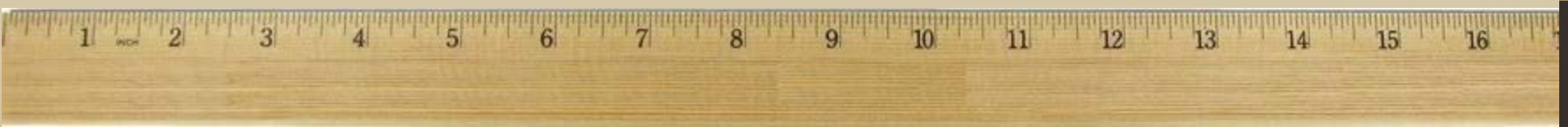
Conclusion: *Those with a background in history had a significant advantage in this interface over those who did not.*

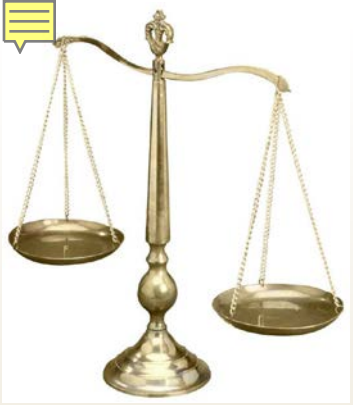


Meeting User Needs

Results: Pros and Cons

- No previous experience in Special Collections:
  Item –level description is better
- No previous experience in digital libraries:
  Finding aid interface is better

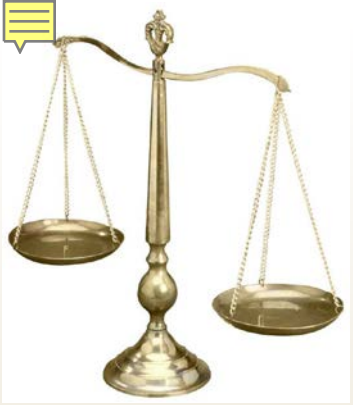




Meeting User Needs

Example: qualitative study

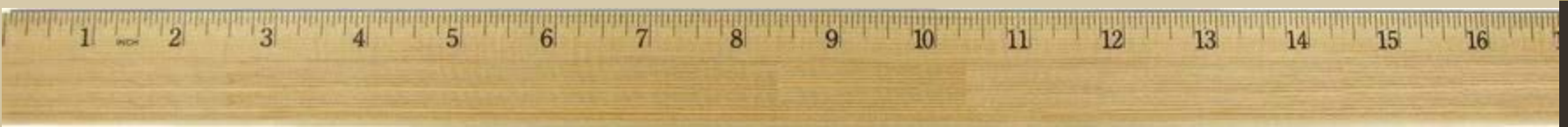
- Categorization of comments
- Rating of importance of comments
- Grouping problems and suggestions
- ***Extensive*** analysis to organize data, find commonalities and correlations

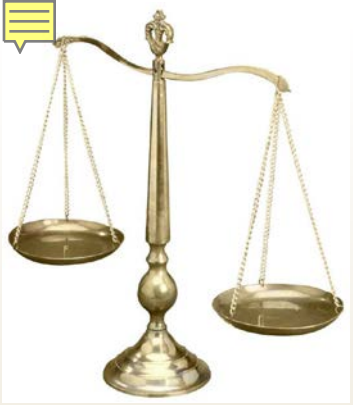


Meeting User Needs

Example: qualitative study

- Display Functionality (223 comments):
- Metadata by location (113 comments)
- Information (35 comments)
- Coverage (22 comments)



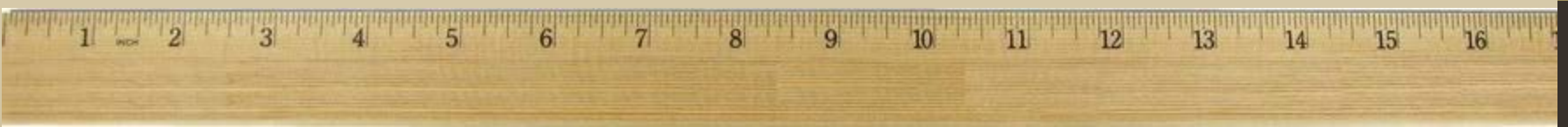


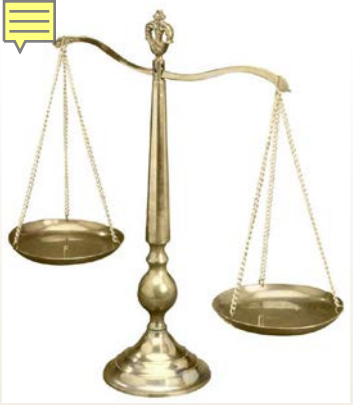
Meeting User Needs

Example: qualitative study

Display Functionality (223 comments):

- Navigation (72)
- Extraction (56)
- Intuitiveness (23)
- Search (23)
- Options (15)
- Size issues (12)
- Access (12)
- Highlighting (10)



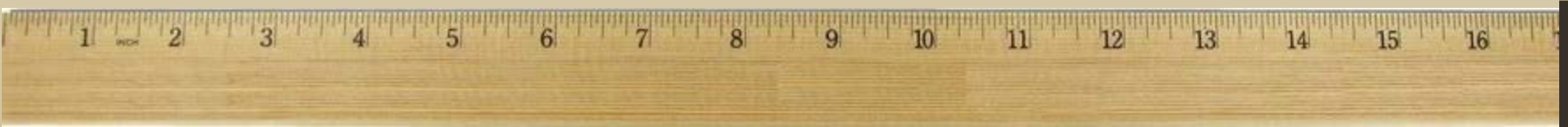


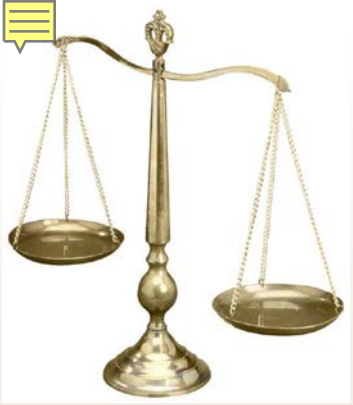
Meeting User Needs

Results: qualitative study

- Can’t find content
- Why should they look here?
- Don’t know how to search
- Can’t find browse options
- Can’t extract content
- Can’t find it after download

You discover what you didn’t know to ask!

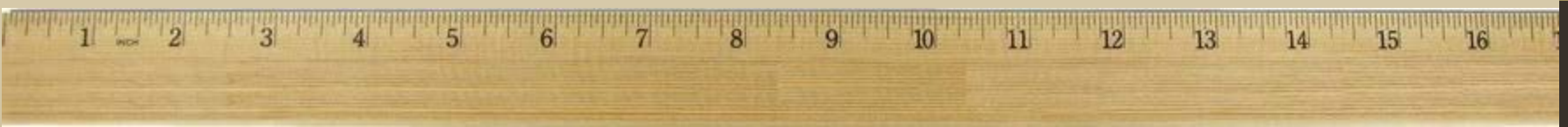


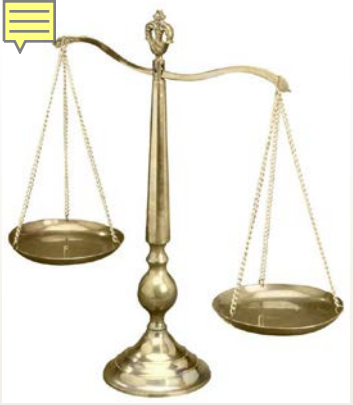


Meeting User Needs

Finding and addressing gaps in:

- Information
- Functionality
- Content
- Findability
- Metadata
- Formats
- Extraction
- Services

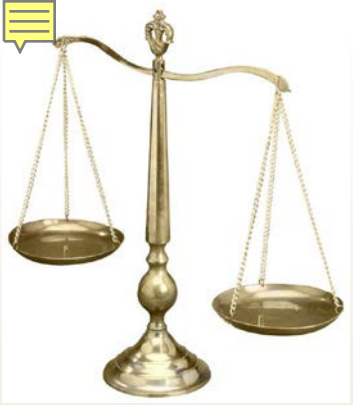




Meeting User Needs

Communicating findings effectively to:

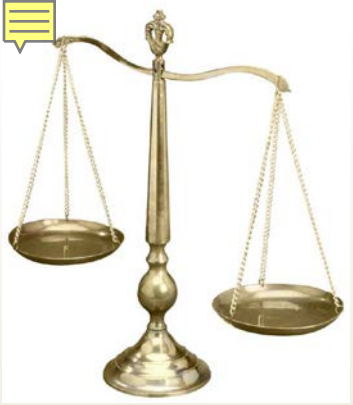
- Stakeholders
- Administrators
- Technical support
- Others in the field



Meeting User Needs

Implementing modifications

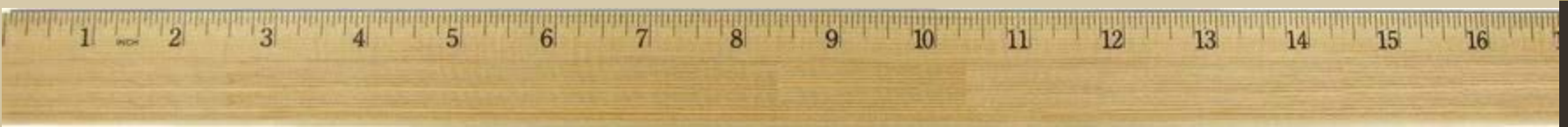
- Negotiations
- Diplomacy
- Follow-through

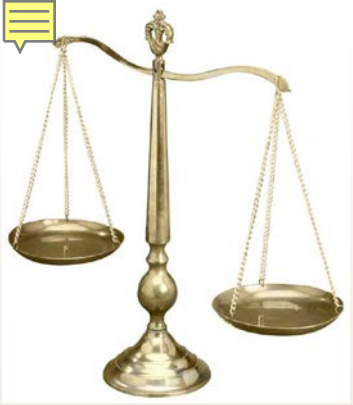


Meeting User Needs

Measuring Improvements

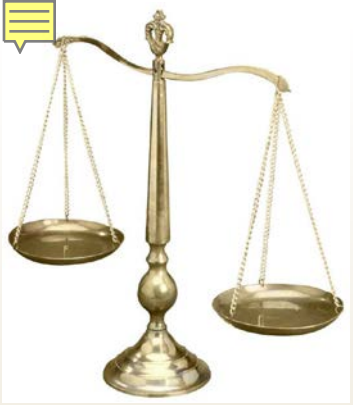
- Software testing
- User testing
- User feedback
- Changes in usage statistics





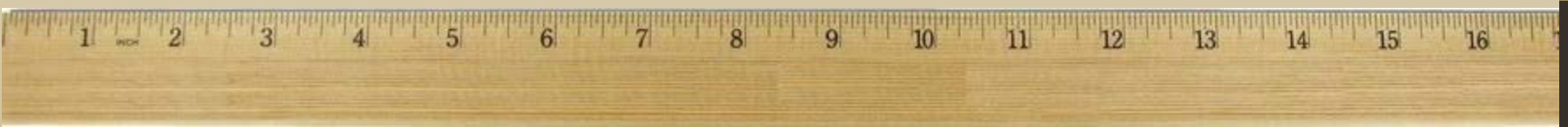
Framework

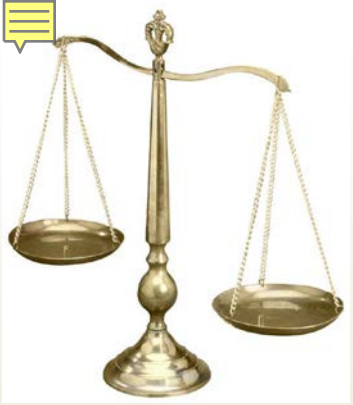
- **Assessing Costs**
- **Meeting User Needs**
- **Assessing Benefits**



Assessing Benefits

1. What is the definition of value?
2. Alignment with institutional goals
3. Measuring results

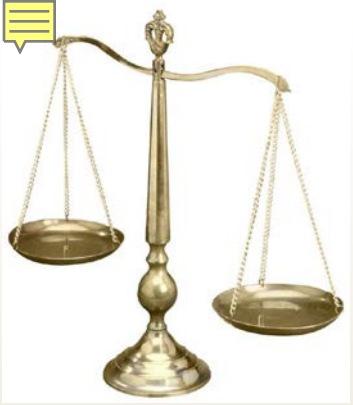




Assessing Benefits

What is the definition of value?

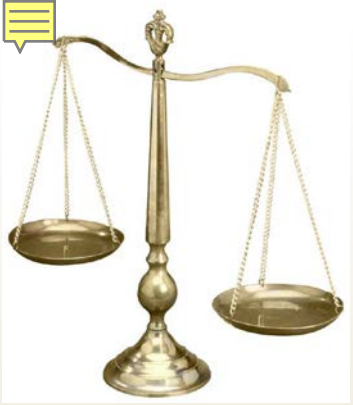
- Number of hits or users?
- Number of citations?
- Number of social media shares?
- Target audience positive feedback?
- Something else?



Assessing Benefits

Alignment with institutional goals

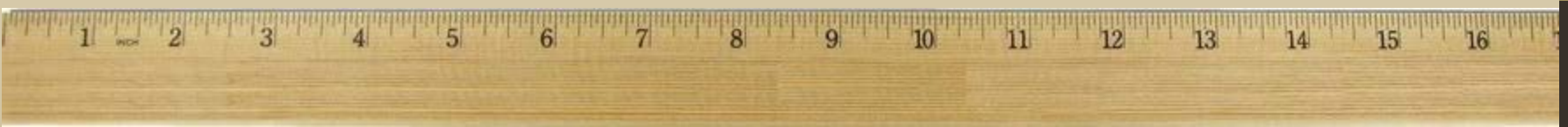
- Research
- Education
- Service
- Outreach

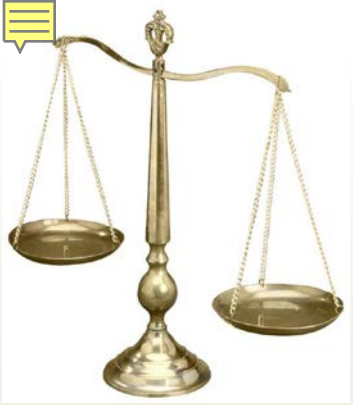


Assessing Benefits

Measuring:

- Citations
- Altmetrics
- Web stats and Google Analytics
- Other measurements and methods

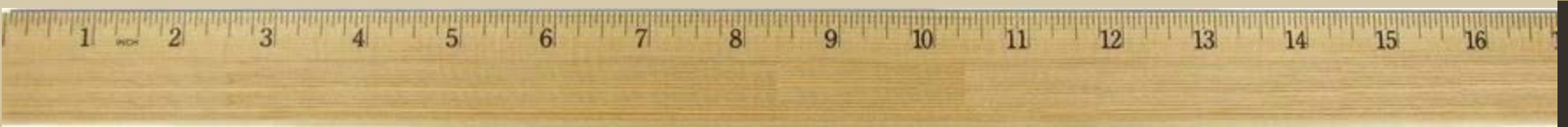


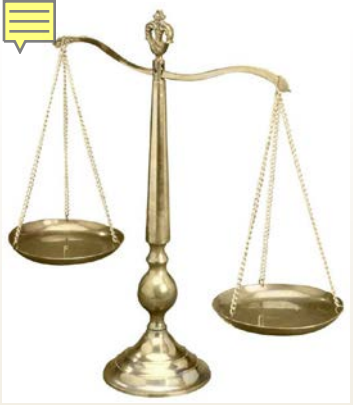


Assessing Benefits

Example: measuring levels of use

	Oct 2012-Sept 2013	Oct 2013-Sept 2014	Percent change
Visits	64,864	72,042	11% increase
Visitors	52,174	57,429	10% increase
Page views	734,949	879,662	19.69% increase

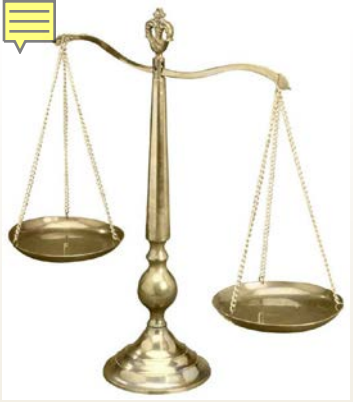




Assessing Benefits

Example: measuring success of access points

Referring site	# visits 2012-2013	# visits 2013-2014	Percent change
Library website	9,452	11,486	22% increase
Wikipedia	2063	2247	9% increase
Scout	1138	1054	7% decrease
AlabamaMosaic	632	758	20% increase
Digital Services blog	514	659	28% increase
Digital Services Facebook	359	438	22% increase



Conclusion

Why do we build digital libraries?

1) To provide access to:
- information users need
- in the form needed
- at the point of need.

2) To meet the goals of our host institution.

ASSESSMENT tells us the extent to which we are succeeding!

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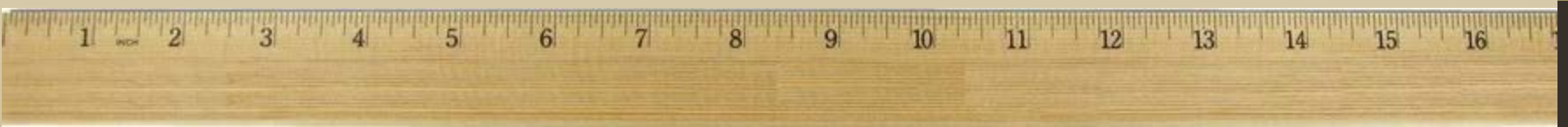

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