A Value-Added View of Information Systems & Services – the LIS Connection

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University of Washington
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TECHNOLOGY IS THE ANSWER!
TECHNOLOGY IS THE ANSWER!

Now...what was the question?
The User Perspective

• Needs
• Values
Values

• Mathematics - the evaluation of a variable or function

• Personal and cultural – that make-up our system of beliefs, ideas, or opinions

• Economics - the worth of commodities

Values

• Psychology: Value theory - refers to the study of the way in which human beings develop, assert and believe in certain values, and act or fail to act on them.

• Sociology: Personal values which are popularly held by a community; how values might change under particular conditions.

• Economics: Value added refers to the additional value created at a particular stage of production or through image and marketing.

Information Values
Information Systems
Information Values
Information Processes That Add Values
Class Agenda

1. Setting the Scene – An Information Perspective
2. Information Systems
3. R.S. Taylor: The Value-Added Model
4. Applying the Value-Added Model
Information

1. Used “sloppily”

2. Broad term for anything related to the stuff or task of “informing”

3. Above “data” and below “knowledge”
Underlying the Value-Added Perspective

1. Information is ubiquitous.
2. There is a hierarchy of information - the “information spectrum.”
3. The purpose of an information system is to add value to better meet user needs.
4. We are constantly engaged in information problem-solving: encountering, solving, and resolving information problems.
Information Spectrum Example

21 27/32
15:59
27/32
22 11/16
23
1514500
21 3/4
<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Sale</td>
<td>21 27/32</td>
</tr>
<tr>
<td>Time Last Sale</td>
<td>15:59</td>
</tr>
<tr>
<td>Net Change</td>
<td>27/32</td>
</tr>
<tr>
<td>High</td>
<td>23</td>
</tr>
<tr>
<td>Volume</td>
<td>1514500</td>
</tr>
<tr>
<td>Tick</td>
<td>Up</td>
</tr>
<tr>
<td>Exchange</td>
<td>NASDAQ</td>
</tr>
<tr>
<td>Previous Close</td>
<td>22 11/16</td>
</tr>
<tr>
<td>Low</td>
<td>21 3/4</td>
</tr>
</tbody>
</table>

Information Spectrum Example
Information Spectrum Example

SBUX
Sep 15, 1999 @ 16:31

Last Sale 21 27/32
Time Last Sale 15:59
Net Change 27/32
High 23
Volume 1514500
Tick Up
Exchange NASDAQ
Previous Close 22 11/16
Low 21 3/4
Information Spectrum Example

SBUX - STARBUCKS CORP
Sep 15, 1999 @ 16:31

Last Sale 21 27/32
Time Last Sale 15:59
Net Change 27/32
High 23
Volume 1514500

Tick Up
Exchange NASDAQ
Previous Close 22 11/16
Low 21 3/4
Buy or Sell?
Trend Information
Information and Knowledge

• [external] Scientists trying for coffee bean without the buzz - at CBS MarketWatch - 9:19 pm

Wednesday September 8, 1999

• [$$ - free trial] Japan's April-June GDP Up 0.2% vs. Prior Quarter; After-Hours Trading Update - at TheStreet.com - 8:57 pm
• [external] Timor can develop economic potential - at CBS MarketWatch - 5:05 pm
• East Timor Could Turn to Prosperity - AP Business - 2:53 pm
• From Homer Simpson's Diary to a Prisoner-Turned-Poet: Joe 2 Reveals the Inner Lives of Great Writers - Business Wire - 9:02 am

Wednesday September 1, 1999

• RESEARCH ALERT - EdwardJones starts Starbucks - Reuters Securities - 4:12 pm

Monday August 30, 1999

• OPTIONS - Starbucks volume builds, volumes firm - Reuters Securities - 4:53 pm

Friday August 27, 1999

• [external] Starbucks Reports 8% Rise in August Same-Store Sales - at The Motley Fool - 9:03 am

......
News to Go

Interventional and implantable medical devices maker Medtronic (NYSE: MDT) announced that it will get into a new line of business by acquiring ear, nose, and throat surgical products maker Xomed Surgical Products (Nasdaq: XOMD) for $800 million in stock, or $60 per share.

Toy retailer Toys "R" Us (NYSE: TOY) said CEO Robert Nakasone has decided to resign his position due to "differing views regarding the direction of the company." Current chairman and former CEO Michael Goldstein will step into Nakasone's shoes until a replacement is found.

Quicken and TurboTax developer Intuit (Nasdaq: INTU) reported a pro forma loss of $0.26 per share for the fourth fiscal quarter, which beat the First Call mean estimate for a loss of $0.33 per share in the period. Net revenues jumped 28% in the period to $150 million.

Coffee retailer Starbucks Corp. (Nasdaq: SBUX) posted an 8% increase in August same-store sales compared to a year ago. Total sales during the month rose 25% to $135 million.
Buy or Sell?

Action
Action

Bought !!
Information Spectrum Example

Starbucks Corp as of 15-Mar-2000

Splits:

Copyright 2000 Yahoo! Inc.  Volume (1000's)  http://finance.yahoo.com/
Action

Buy or Sell?
Information Spectrum Example
Action

Sold !!
Information Spectrum Example

SBUX - Starbucks
Aug 2, 2002

Last Sale 18.81
Time of Last Sale 4:00
NASDAQ
Net Change -0.03
High 19.49
Volume 4,202,545
Previous Close 18.84
Low 18.478
Information Spectrum Example
The Information Spectrum

- **INFORMATION**
- **DATA**
- **KNOWLEDGE**
- **ACTION**
The Value-Added Approach

- R.S. Taylor
- Value-Added Processes in Information Systems
- Ablex, 1986
You should be able to

1. Identify an information system
2. Describe it from a systems (I-P-O) perspective
3. Describe it from a user perspective
4. State how it meets the values-added definition of an information system
5. Analyze the system in terms of:
   • user criteria
   • related values added
   • related value-added processes
Taylor: Essentially what is being asked:

(a) What do users want from information systems that would enable them to perform better, however “better performance” is defined in their context?

(b) Upon what basis do users make choices when presented with large amounts of potentially relevant information?

(Taylor p. 55)
Information Systems

- Storage
- Search
- Retrieval
- Processing
- Sharing
- Communication

- Accounting systems
- Environmental monitoring systems
- Geographic information systems
- Inventory control systems
- Libraries
- Blogs
- Voice/data/image transmissions systems
Traditional Views of Information Systems

User $\rightarrow$ Interface $\rightarrow$ System

Input $\rightarrow$ Processes $\rightarrow$ Output
User Views of Information Systems

• The user is the focal point of the system

• The user is part of the information system

• There is constant feedback and interaction of the system processes and the user
The Value-Added User View of Information Systems

• The purpose of an information system is to meet the needs of its users

• The system does so by adding value to information
The Value-Added Model

• User - criteria of choice
• Interface - values-added
• System – value-added processes
# Taylor’s Value-Added Model

<table>
<thead>
<tr>
<th>USER CRITERIA OF CHOICE</th>
<th>INTERFACE (Values Added)</th>
<th>SYSTEM (Value-added processes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td>Browsing</td>
<td>Alphabetizing</td>
</tr>
<tr>
<td></td>
<td>Formatting</td>
<td>Highlighting important terms</td>
</tr>
<tr>
<td></td>
<td>Interfacing I (Mediation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interfacing II (Orientation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ordering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical Accessibility</td>
<td></td>
</tr>
<tr>
<td>Noise Reduction</td>
<td>Access I (Item identification)</td>
<td>Indexing</td>
</tr>
<tr>
<td></td>
<td>Access II (Subject description)</td>
<td>Vocabulary control</td>
</tr>
<tr>
<td></td>
<td>Access III (Subject summary)</td>
<td>Filtering</td>
</tr>
<tr>
<td></td>
<td>Linkage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Precision</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selectivity</td>
<td></td>
</tr>
</tbody>
</table>
# Taylor’s Value-Added Model

<table>
<thead>
<tr>
<th>USER CRITERIA OF CHOICE</th>
<th>INTERFACE (Values Added)</th>
<th>SYSTEM (Value-added processes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>Accuracy</td>
<td>Quality control</td>
</tr>
<tr>
<td></td>
<td>Comprehensiveness</td>
<td>Editing</td>
</tr>
<tr>
<td></td>
<td>Currency</td>
<td>Updating</td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
<td>Analyzing and comparing data</td>
</tr>
<tr>
<td></td>
<td>Validity</td>
<td></td>
</tr>
<tr>
<td>Adaptability</td>
<td>Closeness to problem</td>
<td>Provision of data manipulation capabilities</td>
</tr>
<tr>
<td></td>
<td>Flexibility</td>
<td>Ranking output for relevance</td>
</tr>
<tr>
<td></td>
<td>Simplicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stimulatory</td>
<td></td>
</tr>
<tr>
<td>Time-Saving</td>
<td>Response Speed</td>
<td>Reduction of processing time</td>
</tr>
<tr>
<td>Cost-Saving</td>
<td>Cost-saving</td>
<td>Lower connect-time price</td>
</tr>
</tbody>
</table>
Taylor
User Criteria of Choice

• Ease of Use
• Noise Reduction
• Quality
• Adaptability
• Time Saving
• Cost Saving

Which is most important?
Schamber Relevance

- topical
- useful
- reliable
- timely/current
- accurate
- comprehensive

- understandable
- precise/specific
- accessible
- aesthetically pleasing
- interactive
Eisenberg
Info Seeking Strategies Criteria (K-12)

- on the topic
- reliable/authoritative
- accurate
- precise
- complete
- easy to use
- available
- current
- affordable
- fun
# Information Values

<table>
<thead>
<tr>
<th></th>
<th>Taylor</th>
<th>Schamber</th>
<th>Eisenberg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td>Accessible</td>
<td>Easy to use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understandable</td>
<td>Available</td>
<td></td>
</tr>
<tr>
<td>Noise Reduction</td>
<td>Precise/specific</td>
<td>Precise</td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>Accurate</td>
<td>Accurate</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>Comprehensive</td>
<td>Complete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reliable</td>
<td>Reliable/authoritative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timely/current</td>
<td>Current</td>
<td></td>
</tr>
<tr>
<td>Topical</td>
<td>Useful</td>
<td>On the topic (valid)</td>
<td></td>
</tr>
<tr>
<td>Adaptability</td>
<td>Interactive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Saving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost Saving</td>
<td></td>
<td>Affordable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aesthetically pleasing</td>
<td>Fun</td>
<td></td>
</tr>
</tbody>
</table>
Exercise: Sample Information Situations

1. Common information situations
2. In each, think about what is going on in terms of information?
3. Consider each one carefully –
   - Criteria
   - Values Added
   - Value-added Processes
#1 – Cell Phones
#1 – Cell Phones
# Value Added Analysis

<table>
<thead>
<tr>
<th>User Criteria</th>
<th>Values Added</th>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
<td>Cost Saving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entertaining</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
#1 - The Auto Dashboard
## Value Added Analysis

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</table>
#2 - Online Education
## Value Added Analysis

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</table>
#3 – Integrated Library System
Important Information for Parents about Access to Social Networking Sites

Web-based "social networking" websites have become a cultural phenomenon, particularly for young adults between 16 - 34 years of age. Because many today's youth connect through various Internet sites, libraries across the country are beginning to see social networking tools to promote library programs and services for teens and young adults. Beginning Monday, October 2, 2006, KCLS will offer all patrons access to social networking sites, including facebook.com, myspace.com, among others. Learn more.

Meet the Author...
Matt Briggs, author of Shoot the Buffalo. This recent Winner of the American Book Award chronicles the story of a boy growing up in the Snoqualmie Valley during the Gold Rush era.
Bob Stiehn, author of Future Hype: The Myths of Technology Change. How much does it cost you in time and money to keep up to date with technology? There's a downside to technology, and this book exposes some of the myths surrounding high tech.

Get Ready to Read!
Celebrate with us at your library November 4! There will be programs,

This page requires Javascript. Please enable Javascript and refresh the page.
# Value Added Analysis

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Value-Added and the Nature of LIS

- Information and Reference Services
- Resources and Collections
- Organization of Information
- Information Policy – society, making a difference
- Information Systems Design, Development, and Implementation
- Children’s Services
- Education – Information Literacy Instruction
- Management of Libraries and Information Services
- Research in Library and Information Science
Value-added and LIS

• The purpose of an information system is to meet the needs of its users.
• The purpose of a library is to meet the information needs of its users?
• How can libraries add value to information in order to better meet the needs of users?
Summary

1. Remember, it’s an information-rich world!

2. Information scientists view the world from an information perspective – with people using information at the center.

3. The information perspective includes
   - The ubiquity of information
   - The changing nature of information (attributes and behaviors)
   - The Information spectrum
   - Information problem-solving
   - Adding value to meet users needs.
Summary

The Value Added Model provides a framework for:

• Analyzing user needs

• Determining values to add that will meet those needs

• Applying system processes that add the desired values.
Want to -

- Help people?
- Improve society?
- Make money?
- Determine
  - User needs/criteria
  - Values to add
  - Processes to add value
Thanks for listening!