Theories of Social Media Services
and Information Systems

Min-Yuh Day
Assistant Professor
Dept. of Information Management, Tamkang University

http://mail.im.tku.edu.tw/~myday/
2011-09-30
<table>
<thead>
<tr>
<th>週次</th>
<th>日期</th>
<th>內容（Subject/Topics）</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100/09/09</td>
<td>Course Orientation for Social Media Management</td>
</tr>
<tr>
<td>2</td>
<td>100/09/16</td>
<td>Web 2.0, Social Network, and Social Media</td>
</tr>
<tr>
<td>3</td>
<td>100/09/23</td>
<td>Theories of Media and Information</td>
</tr>
<tr>
<td>4</td>
<td>100/09/30</td>
<td>Theories of Social Media Services and Information Systems</td>
</tr>
<tr>
<td>5</td>
<td>100/10/07</td>
<td>Paper Reading and Discussion</td>
</tr>
<tr>
<td>6</td>
<td>100/10/14</td>
<td>Behavior Research on Social Media Services</td>
</tr>
<tr>
<td>7</td>
<td>100/10/21</td>
<td>Paper Reading and Discussion</td>
</tr>
<tr>
<td>8</td>
<td>100/10/28</td>
<td>Midterm Project Presentation and Discussion</td>
</tr>
<tr>
<td>9</td>
<td>100/11/04</td>
<td>期中考試週</td>
</tr>
</tbody>
</table>
10 100/11/11 Business Models and Issues of Social Media Service
11 100/11/18 Paper Reading and Discussion
12 100/11/25 Strategy of Social Media Service
13 100/12/02 Paper Reading and Discussion
14 100/12/09 Social Media Marketing
15 100/12/16 Paper Reading and Discussion
16 100/12/23 Social Network Analysis, Link Mining, Text Mining, Web Mining, and Opinion Mining in Social Media
17 100/12/30 Project Presentation and Discussion
18 101/01/06 期末考试週
Social Media Services and Information Systems

• Social Media Services (SMS)
• Information Systems (IS)
• Computer Mediated Communication (CMC)
Theories of Social Media Services

• Media Richness Theory (MRT)
  – (Daft & Lengel, 1986)

• Media Synchronicity Theory (MST)
  – (Dennis et al., 1998, 1999, 2008)

• Media Naturalness Theory (MNT)
  – (Kock, 2001; 2004)
Media Richness Theory (MRT)

• Daft, 1984
• Information Richness Theory
• Origin from
  – Information Processing Theory
    • Galbraith
  – Contingency Theory
Media Richness Theory (MRT)

• Media Richness is a function of
  – Instant Feedback
  – Multiple cues
  – Language variety
  – Personal focus
Media Richness Theory
(Daft & Lengel, 1986)

MORE EFFECTIVE

Face-to-Face

Video Conferencing

Telephone

2-Way Radio

Written, Addressed Documents

Unaddressed Documents

LEANER MEDIUMS

Letters

E-Mail

Bulk Mail

Posters

**Media Richness Theory**

- **Information richness**
  - The ability of information to change understanding within a time interval
Media Richness Theory

- Media richness is a function of
  1. The medium’s capacity for immediate feedback
  2. The number of cues and channels available
  3. Language variety
  4. The degree to which intent is focused on the recipient

http://en.wikipedia.org/wiki/Media_richness_theory
Media Synchronicity Theory (MST)

• Dennis et al. (1998; 1999; 2008)
MISQ Paper of the Year Recipients

• **Paper of the Year for 2009**
  Dianne Cyr, Milena Head, Hector Larios, and Bing Pan
  (Volume 33, Issue 3, September 2009)

• **Paper of the Year for 2008**
  “Media, Tasks, and Communication Processes: A Theory of Media Synchronicity”
  Alan R. Dennis, Robert M. Fuller, and Joseph S. Valacich
  (Volume 32, Issue 3, September 2008)

• **Paper of the Year for 2007**
  “Toward a Deeper Understanding of System Usage in Organizations: A Multilevel Perspective”
  Andrew Burton-Jones and Michael J. Gallivan
  (Volume 31, Issue 4, December 2007)
Media Synchronicity Theory (MST)

## Media Synchronicity Theory (MST)

<table>
<thead>
<tr>
<th>Communication Process</th>
<th>Information Transmission Characteristics</th>
<th>Information Processing Characteristics</th>
<th>Media Synchronicity Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conveyance</td>
<td>Higher Quality</td>
<td>Retrospective</td>
<td>Lower</td>
</tr>
<tr>
<td></td>
<td>Various Formats</td>
<td>Slow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple Sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convergence</td>
<td>Lower Quality</td>
<td>Verification</td>
<td>Higher</td>
</tr>
<tr>
<td></td>
<td>Specific Format</td>
<td>Adjustment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specific Sources</td>
<td>Negotiation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faster</td>
<td>Faster</td>
<td></td>
</tr>
</tbody>
</table>

Media Synchronicity Theory (MST)

## Media Synchronicity Theory (MST)

**Table 2. Comparison of Selected Media and Their Capabilities**

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Transmission Velocity</th>
<th>Parallelism</th>
<th>Symbol Sets</th>
<th>Rehearsability</th>
<th>Reprocessability</th>
<th>Information Transmission</th>
<th>Information Processing</th>
<th>Synchronicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face</td>
<td>High</td>
<td>Medium</td>
<td>Few-Many</td>
<td>Low</td>
<td>Low</td>
<td>Fast</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Video Conference</td>
<td>High</td>
<td>Medium</td>
<td>Few-Medium</td>
<td>Low</td>
<td>Low</td>
<td>Fast</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Telephone Conference</td>
<td>High</td>
<td>Low</td>
<td>Few</td>
<td>Low</td>
<td>Low</td>
<td>Fast</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>Synchronous Instant Messaging</td>
<td>Medium-High</td>
<td>Low-Medium</td>
<td>Few-Medium</td>
<td>Medium</td>
<td>Medium-High</td>
<td>Medium</td>
<td>Low-Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Synchronous Electronic Conferencing</td>
<td>Medium-High</td>
<td>High</td>
<td>Few-Medium</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>Asynchronous Electronic Conferencing</td>
<td>Low-Medium</td>
<td>High</td>
<td>Few-Medium</td>
<td>High</td>
<td>High</td>
<td>Slow</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Asynchronous Electronic Mail</td>
<td>Low-Medium</td>
<td>High</td>
<td>Few-Medium</td>
<td>High</td>
<td>High</td>
<td>Slow</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Voice Mail</td>
<td>Low-Medium</td>
<td>Low</td>
<td>Few</td>
<td>Low-Medium</td>
<td>High</td>
<td>Slow</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Fax</td>
<td>Low-Medium</td>
<td>Low</td>
<td>Few-Medium</td>
<td>High</td>
<td>High</td>
<td>Slow</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Documents</td>
<td>Low</td>
<td>High</td>
<td>Few-Medium</td>
<td>High</td>
<td>High</td>
<td>Slow</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

Media Naturalness Theory (MNT)

Figure 1  The Media Naturalness Scale

e-mail, Internet chat, video-conferencing, etc.  decrease in naturalness  super-rich virtual reality media  decrease in naturalness

face-to-face medium

Note. The highest degree of naturalness is found at the center of the scale.

Media Naturalness Theory (MNT)

Media naturalness scale

Source: https://secure.wikimedia.org/wikipedia/en/wiki/File:Media_naturalness_theory_Fig2.png
Theories of Information Systems

- Theory of Reasoned Action (TRA)
- Technology Acceptance Model (TAM)
- Theory of Planned Behavior (TPB)
- Unified Theory of Acceptance and Use of Technology (UTAUT)
- Integration of User Satisfaction and Technology Acceptance (IUSTA)
FIG. 10.2. Theory of planned behavior.

FIG. 1. Theory of planned behavior

Icek Aizen (Ajzen)

Professor of Psychology
University of Massachusetts
TAM (1989)

Figure 1  Proposed TAM2—Extension of the Technology Acceptance Model

Subjective Norm

Image

Job Relevance

Output Quality

Result Demonstrability

Experience

Voluntariness

Perceived Usefulness

Intention to Use

Perceived Ease of Use

Usage Behavior

Technology Acceptance Model

Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003)

- Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975)
- Technology Acceptance Model (TAM) (Davis 1989)
- Motivation Model (MM) (Davis et al. 1992)
- Technology Acceptance Model and Theory of Planned Behavior (C-TAM-TPB) (Taylor and Todd 1995)
- Combined TAM and TPB (C-TAM-TPB) (Taylor and Todd 1995)
- Theory of Planned Behavior (TPB) (Ajzen 1991)
- Model of PC Utilization (MPCU) (Tompson et al. 1991)
- Innovation Diffusion Theory (IDT) (Moore and Benbasat 1991)
- Social Cognitive Theory (SCT) (Compeau and Higgins 1995)
US
(User Satisfaction)

Figure 2  The User Satisfaction Research Stream Approach

System quality antecedents (e.g., reliability, flexibility, integration, accessibility, timeliness)

Information quality antecedents (e.g., completeness, accuracy, format and currency)

System quality

Information quality

System satisfaction

Information satisfaction

Object-based beliefs

Object-based attitudes

Conceptual gap

Use and/or IT value

IUSTA (integration of user satisfaction and technology acceptance)

References

- Erik Qualman, Socialnomics: How Social Media Transforms the Way We Live and Do Business, Wiley, 2010