Information, Organization, and Management

Unit 8: Information and Communication Models

Prof. Dr. Martin Hepp

http://www.heppnetz.de
mhepp@computer.org

http://www.heppnetz.de/teaching/img/

This unit is based on: Wigand/Picot/Reichwald: Information, Organization and Management, John Wiley & Sons, 1997
Unit 8: Overview

• Motivation for Models of Information and Communication
• Communication Models
  – Levels of Semiotics
  – Technical Communication Model
  – Novelty Confirmation Model
  – Axioms of Communication (Watzlawick, Beavin, Jackson)
  – Communication Interferences (Schulz von Thun)
  – Coordination of Action (Habermas)
  – Radical Constructivism

• Models for Information Behavior
  – Restricted Human Capabilities
  – Rationality Restrictions
  – Context Variables (O'Reilly)
  – Information as Signal and Symbol
  – Empirial Analysis of Media Usage
  – Media Richness and Managerial Choice (Daft/Lengel)
  – Information Pathologies
  – Problems in Interorganizational Information Transfer

• Models for the Production of Information
  – Information Production
  – Information Need and Supply
  – Life Cycle
  – Evaluation of Information

cf. Wigand/Picot/Reichwald (1997)
Motivation for Models of Information and Communication

• Late acknowledgement of information as a production factor
• Valuable for the interpretation of entrepreneurial behavior and organizational structures
• Foundation for rational decision making on the design and improvement of
  – Information Systems
  – Organizational Arrangements
  – Communication structures and habits

cf. Wigand/Picot/Reichwald (1997)
Models of Information and Communication

- There exists no single, uniform model
- Various models from various angles
  - intrapersonal understanding
  - behavioral options, restrictions, and problems
  - production of information / information as a good

cf. Wigand/Picot/Reichwald (1997)
Communication Models

• Object of communication processes:
  – Choice at the recipient‘s side: interpretation and action
  – Example: Asking sb. vs. physical action

• Chain of Signals

cf. Wigand/Picot/Reichwald (1997)
Levels of Semiotics

- Semiotics: Scientific research of objects and functions of communication processes

- Three levels:
  - **Syntactic**: Analysis of signals and relationship between signals
  - **Semantic**: Analysis of signals and their meanings
  - **Pragmatic**: Analysis of signals and their effects

- Example

cf. Wigand/Picot/Reichwald (1997)
Syntactic Level

• Signals and relation between signals
• Formal rules determining the structure (e.g. grammars)
• Example: XML Schema Definition, Backus-Naur Form (BNF)

cf. Wigand/Picot/Reichwald (1997)
Semantic Level

• Relation between signals and meanings (designata)
• Message: requires semantic agreement
• Example: Ontologies are such semantic agreements

cf. Wigand/Picot/Reichwald (1997)
Pragmatic Level

• Relation between signs and their effects
• Intended and actual effects
• Example: Ordering a book by sending a message „1 pcs of Information, Organization, and Management“

cf. Wigand/Picot/Reichwald (1997)
Technical Communication Model

• Shannon and Weaver 1949
Novelty Confirmation Model

- von Weizäcker/von Weizäcker (1972)
- Pragmatic effect depends on previous experiences
- Pragmatic effect can unfold only if confirming elements exist
- Example: Differences in cultural backgrounds

cf. Wigand/Picot/Reichwald (1997)
Axioms of Communication (Watzlawick, Beavin, Jackson)

1. It is impossible to not communicate.
2. Communication consists of a content and a relation aspect
   - Lasting effect on social bonds
   - Familiar social context simplifies communication of facts
3. The nature of a communication process is determined by the "punctuation"
4. Communication is based on digital and analog modalities
   - Digital: written and spoken language
   - Analog: mimics, gestures, intonation
5. There exist symmetric and complementary communication relations
   - Symmetric: All partners on the same level
   - Complementary: Differences in role and status

http://www.uni-essen.de/buenting/Axiome.html

Husband
withdraws
complains
withdraws
complains
withdraws
complains

Wife
withdraws
complains
withdraws
complains
withdraws
complains

cf. Wigand/Picot/Reichwald (1997)
Communication Interferences (Schulz von Thun)

- Every message contains four different components
  - **Content**: Facts
  - **Relation**: Relation between sender and receiver
  - **Appeal**: what is requested/intended from the receiver
  - **Self-revelation**: intended/unintended information about the sender

 cf. Wigand/Picot/Reichwald (1997)
Coordination of Action (Habermas)

- Goal: Comprehensive social theory
- Conditions and patterns of social interaction
- Not actually a communication model, but still relevant
- Two fundamental types of coordination:
  - mutual intervention
  - creation of rationally justified agreement

cf. Wigand/Picot/Reichwald (1997)
Coordination of Action (Habermas)

- Mutually exclusive
- Non-social context: objective world with properties, circumstances, conditions
- Social context: certain rules of social interaction apply
- Agreement oriented = Communicative action – Coordination by communication

cf. Wigand/Picot/Reichwald (1997)
### Habermas: Types of Action

<table>
<thead>
<tr>
<th>Action Orientation</th>
<th>Success-oriented</th>
<th>Agreement-oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Situation</td>
<td>Non-social</td>
<td>Social</td>
</tr>
<tr>
<td></td>
<td>Instrumental Action</td>
<td>Strategic Action</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>Communicative Action</td>
</tr>
</tbody>
</table>

*cf. Wigand/Picot/Reichwald (1997)*
Radical Constructivism

World: Phenomena

cf. Wigand/Picot/Reichwald (1997)
Models for Information Behavior

• Restricted Human Capabilities
• Rationality Restrictions

cf. Wigand/Picot/Reichwald (1997)
Context Variables (O‘Reilly)

• The likelihood that information is considered increases with
  – more power of the informing party
  – relevance for task completion (subjective/objective)
  – strong relationship with control and evaluation systems (e.g. peer-reviewed journal)
  – contribution to positively sanctioned actions
  – compliance with decision-maker’s goals
  – little conflict with cooperation partners
  – degree of accessibility (online, good writing,...)
  – conciseness
  – degree of personal contact
  – degree of trust in the source

cf. Wigand/Picot/Reichwald (1997)
Information as Signal and Symbol

• Information behavior has signaling effects
• Information used mainly to refute expected criticism
• In particular, if consequences are to be carried by the decision-maker but not information costs
• Typical example: Business consulting

cf. Wigand/Picot/Reichwald (1997)
## Communication Media and Purpose

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>Promptness &amp; Convenience</th>
<th>Confidentiality</th>
<th>Complexity</th>
</tr>
</thead>
</table>

High Degree of Structure

- Increasing importance of written and asynchronous media
- Increasing importance of oral and synchronous media
- Increasing possibility of distance
- Increasing need for physical proximity

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cf. Wigand/Picot/Reichwald (1997)
Media Richness and Managerial Choice
(Daft/Lengel)

- Information Richness
  - High
  - Low

- Complexity
  - Low
  - High

Overcomplication
Effective Communication
Oversimplification

cf. Wigand/Picot/Reichwald (1997)
Information Pathologies

- Actor-related
- Interaction-related
- Knowledge-based

cf. Wigand/Picot/Reichwald (1997)
Problems in Interorganizational Information Transfer

- Prisoner’s dilemma
- Basic value of information
- Additional value of information
- Multiple periods allow for cooperation
- Tit-for-Tat strategy

cf. Wigand/Picot/Reichwald (1997)
Models for the Production of Information

- Information Production
- Information Need and Supply
- Life Cycle
- Evaluation of Information

cf. Wigand/Picot/Reichwald (1997)
Review Question 1

• Why do you think is information a special good? Is it fundamentally different from capital, land, labor, and other input factors to production?
Review Question 2

• What are the three levels of Semiotics and what is their scope?
Review Question 3

• How can the novelty-confirmation model be used to explain why long-term collaborations in the production of software are more productive?
Review Question 4

• Communication is based on digital and analog modalities. What does this mean for someone presenting a novel proposal to a new audience?
Review Question 5

- Why do you think recommends an increased level of confidentiality an increase in proximity (e.g. f2f)?
Review Question 6

• Explain how hiring business consultants can have a signaling effect.
Review Question 7

• How can the media richness theory explain why e-mail is not always the most efficient means of communication?
Additional Reading

• Radical Constructivism
  – https://tspace.library.utoronto.ca/citd/holtorf/3.8.html

• Semiotics
  – http://www.aber.ac.uk/media/Documents/S4B/semiotic.html

• Shannon and Weaver
  – http://www.cultsock.ndirect.co.uk/MUHome/cshtml/index.html

• Watzlawick, Beavin, Jackson
  – http://en.wikipedia.org/wiki/Paul_Watzlawick
  – http://www.colorado.edu/communication/meta-discourses/Theory/watzlawick/

• Schulz von Thun
  – http://de.wikipedia.org/wiki/Vier-Seiten-Modell (in German only)

• Speech Act Theory

• Media Richness
Thank you!

The slides of today‘s class will be available at http://www.heppnetz.de/teaching/img/ shortly.