Improving Imagery Processing and Effectiveness of Internet Websites Through Progressive Levels of Interactivity and Imagery-Strength
Agenda

1. Theoretical and practical challenges:
   From passive to interactive brand communication

2. Theoretical framework:
   A model for explaining the effects of interactive websites

3. Empirical foundation:
   The positive effects of interactivity on imagery processing and effectiveness of websites

4. Implications for theory and practice:
   Further challenges for interactive brand communication on the internet
From Passive to Interactive Brand Communication

Source: according to Rafaeli, 1988, p. 120; Rafaeli/Sudweeks, 1997
What is the Impact of Interactivity on Imagery Processing and the Effectiveness of Internet Websites?

Which communication effects (especially on imagery processing, attitudes and purchase intentions) can result from the interaction of the visitors with particularly interactive websites on the internet?
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## Research on the Dimensions of Interactivity

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Dimensions of Interactivity</th>
</tr>
</thead>
</table>
2. Exchange of Roles  
3. Mutual Discourse |
3. Responsiveness  
5. Ability to Add Information |
|          |      | 2. Level of Effort  
4. Monitoring Capability  
6. Facilitation of Interpersonal Comm. |
| Steuer, J. | 1992 | 1. Speed of Interaction  
3. Real-World Mapping |
| Ha, L. / James, E. L. | 1998 | 1. Playfulness  
3. Connectedness  
5. Reciprocal Communication |
|          |      | 2. Choice  
4. Information Collection |
| Downes, E. J. / McMillan, S. J. | 2000 | 1. Active Communication  
3. Time Flexibility  
5. Sense of Virtual Place |
|          |      | 2. Level of Control  
4. Responsiveness  
6. Perceived Purpose of Communication |
| Liu, Y. / Shrum, L. J. | 2002 | 1. Active Control  
3. Synchronicity |
|          |      | 2. Two-Way Communication |
3. Speed of Interaction |
|          |      | 2. User Control |
Key Dimensions of Website Interactivity

1. Dimension: **Range of interaction possibilities/features**


2. Dimension: **Responsiveness of communication messages**


3. Dimension: **Speed of interaction**

Definition and Impact of Mental Imagery

Mental imagery is defined as the **representation of any sensory experience in working memory**. It depends on the **stimulation of one or more of the five senses**.

(Source: MacInnis and Price, 1987; Childers and Houston, 1982).

Several studies have shown that **mental imagery affects cognitive and affective responses** to advertising including the recall of advertising messages, the attitudes toward the ad and toward the brand as well as the purchase intentions.


<table>
<thead>
<tr>
<th>Modality</th>
<th>Examples from everyday life</th>
<th>Marketing examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>Eiffel Tower</td>
<td>Marlboro-Cowboy</td>
</tr>
<tr>
<td>Acoustic</td>
<td>Telephone bell</td>
<td>Bacardi music</td>
</tr>
<tr>
<td>Olfactory</td>
<td>Leather</td>
<td>Domestos</td>
</tr>
<tr>
<td>Haptic</td>
<td>Sponge</td>
<td>Underberg</td>
</tr>
<tr>
<td>Flavorful</td>
<td>Lobster</td>
<td>After Eight</td>
</tr>
</tbody>
</table>
A Model of the Effects of Interactive Websites

Progressive Levels of Imagery-Strength:

Interactivity

Imagery strength

Imagery-processing

Mental Images

Associations

A_{site}

A_{B}

Purchase Intention

Progressive Levels of Interactivity:

Interactivity

Imagery strength

Imagery-processing

Mental Images

Associations

A_{site}

A_{B}

Purchase Intention

A_{B} = Attitude toward the Brand, A_{site} = Attitude toward the Website

- Schema Theory/Semantic Networks (Bartlett, 1932; Rumelhart, 1975; Bobrow/Norman, 1975; Quillian, 1968)
- Human-Computer-Interaction Theory (Marchionini, 1995; Goertz, 1995).
Derivation of Hypotheses Based on the Model

H1: Imagery-strong websites are more likely to induce
   a: imagery processing
   b: mental imagery
   c: positive advertising consequences \((A_{site}, A_{brand}, PI)\)
   than imagery-weak websites.

H2: Highly interactive websites more strongly induce
   a: brand cognition
   b: imagery processing
   c: mental imagery
   d: positive advertising consequences \((A_{site}, A_{brand}, PI)\)
   than lesser interactive sites.
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# Method of the Experiment

<table>
<thead>
<tr>
<th>Study</th>
<th>Res. Interest</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Manipulation Check  
  n = 40 persons | Examination of the perception of the manipulation of the independent variables interactivity and imagery strength | Computer supported survey by means of verbal rating scales; Evaluation by average comparisons |
| Main experiment  
  n = 160 persons | Analysis of the effect of the degree of interactivity and imagery strengths of Internet websites on brand cognition, imagery processes, attitudes and purchase intentions | Computer supported survey by means of open questions and verbal rating-scales; Evaluation of frequencies, comparisons of averages as well as ANOVA and MANOVA |
Operationalization of the Independent Variable Interactivity

- A few (10) vs. many (36) clicks and interaction possibilities.
- Slow (2 sec.) vs. fast (0 sec.) response speed on user's interactions/clicks.
- (2) Inappropriate vs. (0) inappropriate responses/reactions on user clicks (linking).
Operationalization of the Independent Variable Imagery Strengths

- More abstract / unrealistic vs. more concrete / realistic pictures
- No differences in the number of pictures
- No differences in the content of the pictures
Experimental Design

Dependent Variables:
- Brand Cognition
- Imagery Processing
- Mental Imagery
- Attitudes \( (A_{\text{site}}, A_{\text{brand}}) \)
- Purchase Intention

low Imagery strengths high

low Interactivity low
Procedure of the Experiment

Measurement of control variables

Surf instruction

Sinalco 2 min.

Sola 2 min.

Bluna 2 min.

Measurement of dependent variables

Measurement of socio-demographic data
Effect of Interactivity on Brand Cognition

Proportion of brand specific associations (in %)

- Low interactivity: 36.3%
- High interactivity: 57.0%*

*(F_{1,158} = 36.278, p < 0.001)

Proportion of positive associations (in %)

- Low interactivity: 35.5%
- High interactivity: 46.5%**

**(F_{1,158} = 7.297, p < 0.01)
Effect of Interactivity and Imagery Strengths on the Origin of Mental Imagery (I)

Scales from 1 to 7

*(F_{1,156}=4.757, p<0.05)*

**(F_{1,156}=16.234, p<0.001)**

***(F_{1,156}=0.620, p>0.05)***
Effect of Interactivity and Imagery Strengths on the Origin of Mental Imagery (II)

Vividness of mental imagery

<table>
<thead>
<tr>
<th>Interactivity</th>
<th>Imagery Weak</th>
<th>Imagery Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>3.50</td>
<td>4.23</td>
</tr>
<tr>
<td>High</td>
<td>4.38</td>
<td>4.73</td>
</tr>
</tbody>
</table>

Complexity of mental imagery

<table>
<thead>
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<th>Imagery Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>2.32</td>
<td>3.28</td>
</tr>
<tr>
<td>High</td>
<td>3.02</td>
<td>3.38</td>
</tr>
</tbody>
</table>

Scales from 1 to 7

*(F_{1,156}=6.328, p≤0.01)
**(F_{1,156}=3.943, p<0.05)
****(F_{1,156}=0.489, p>0.05)

*(F_{1,156}=10.021, p<0.01)
**(F_{1,156}=3.795, p≤0.05)
****(F_{1,156}=2.535, p≤0.10)
Effect of Interactivity and Imagery Strengths on the Attitudes toward the Website and toward the Brand

*(F_{1,155}=20.111, p<0.001)
***(F_{1,155}=6.046, p≤0.01)
***(F_{1,155}=3.240, p<0.10)

*(F_{1,155}=17.929, p<0.001)
***(F_{1,155}=4.189, p<0.05)
***(F_{1,155}=0.232, p>0.05)
Effect of Interactivity and Imagery Strengths on Purchase Intention

Scales from 1 to 7

*(F_{1,156} = 13.835, p<0.001)

**(F_{1,156} = 2.513, p≤0.10)

****(F_{1,156} = 0.729, p>0.10)
Summary of the Results

High interactive brand websites on the internet

Evoking of stronger imagery processes

Leading to the construction of more vivid/complex mental brand imagery

Generation of more brand specific & positive associations

Leading to a
- better attitude toward the website and
- to a better attitude toward the brand
- to more positive purchase intentions

Source: Kiss, 2005
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Impact of Internet Ability of the Visitors?

High interactive brand websites on the internet

Evoking of stronger imagery processes

Leading to the construction of more vivid/complex mental brand imagery

Generation of more brand specific & positive associations

Leading to a
- better attitude toward the website and
- to a better attitude toward the brand
- to more positive purchase intentions

Internet ability of the visitors

Source: Kiss, 2005
Different Impact of Separate Dimensions of Interactivity?

### High Cognitive Involvement
- Clear utilitarian purpose in mind
- E.g. search for product information

### Relevant dimensions of interactivity?
- Speed of interaction
- Responsiveness/Message Relatedness

### High Emotional Involvement
- Experiential surfing situation
- E.g. look around & experience website

### Relevant dimensions of interactivity?
- Range of interaction with high number of interactive features

Relevance of Interactivity Features of a Website

Source: Kiss, 2005.
Interactive Gems on Existing Websites

- Brand Logo as Navigation Element
- Interactive Product Presentation

Elements which are highly relevant for the brand perception should be designed as interactive on a website as these most strongly communicate the brand message.

The interactive brand elements should be designed so that they can be linked to user relevant functions (primary navigation, login area, etc.)
Thank you!