AUDIENCE BEHAVIOR AROUND LARGE INTERACTIVE CYLINDRICAL SCREENS

Gilbert Beyer, Florian Alt, Jörg Müller, Albrecht Schmidt, Karsten Isakovic, Stefan Klose, Manuel Schiewe, Ivo Haulsen.
Flat Screen
Rectangle
Cylindrical screens
Columns
Classical columns
Digital columns

still bloody
expensive
Prototype

interactive rear-projection column
Prototype

interactive
rear-projection
column
Applications
Reactive Typo
Move to Paint
Ambient Column
Screen theory
Lev Manovich

> Imprisonment of the viewer’s body in front of classical screens
Rectangle
Sweet spot / Prison
Sweet spot / Prison
Hypotheses

> H1: Users walk more when interacting with the column
> more distance, more time, more positions
> H2: Users position themselves frontally with flat screens – not with column screens
User study
User study

> Lab study, 2 days, 4 prototypes
> within-subject design
> Video observation, interviews and questionnaires
Survey Prototypes
Fake Prototypes

Purpose: to distract from displays under investigation
Room layout
Participants

> 15 participants, 10 male, 5 female, 32.7 years mean age, diverse demographic backgrounds
> send them on „screen museum round tour“
Results
H1: Walking / H2: Frontal Position
H1: Walking / H2: Frontal Position

H1a: Distance Walked

H1b: Time spent standing

H2: Parallel shoulder position

Flat/Column

Flat/Column

Flat/Column

mean

std
### H1: Walking / H2: Frontal Position

<table>
<thead>
<tr>
<th>Measure</th>
<th>Scale</th>
<th>Column mean</th>
<th>Flat mean</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance walked</td>
<td>meters</td>
<td>47.3</td>
<td>21.2</td>
<td>0.01</td>
</tr>
<tr>
<td>Time spent standing</td>
<td>percent</td>
<td>44.9</td>
<td>62.8</td>
<td>0.05</td>
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<tr>
<td>Mean duration of stops</td>
<td>seconds</td>
<td>3.5</td>
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<tr>
<td>Total time spent</td>
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<tr>
<td>Time spent with shoulders parallel</td>
<td>percent</td>
<td>41.5</td>
<td>69.5</td>
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<tr>
<td>Time spent with shoulders parallel</td>
<td>percent</td>
<td>70</td>
<td>82</td>
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<tr>
<td>Stops per minute</td>
<td>1/min</td>
<td>8.3</td>
<td>6.8</td>
<td></td>
</tr>
<tr>
<td>Mean distance from display</td>
<td>meters</td>
<td>1.5</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Variance in location</td>
<td>rows</td>
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All comparisons with Wilcoxon-signed-rank-test with paired samples.
H1: Walking / H2: Frontal Position

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All comparisons with Wilcoxon-signed-rank-test with paired samples.
Results

H1: walking, position variance  >> supported
H2: frontal positioning  >> partially supported
Sweet spot / Prison
Interpretation
Flat Screen: Imprisonment
Column: Breaks the Prison
Columns

> are encountered laterally.
  Design for one-hand use.
> are for passers-by.
  Design for walking.
> are only semi-framed.
  Design for variable positions.
Flat screens

> are faced frontally.
  Design for both-hand use.
> are for standing still at a fixed spot for longer times.
  More complexity is possible.
Next Step
Next Step: Multiple users

> Planned study on social interaction around columns
> No sweet spot: are there less inhibitions to start performing?
Discussion
Discussion & Questions