UX Evaluation of a Mobile Application Prototype for Art Museum Visitors

Presentation for ACHI 2020

Pekka Isomursu*, Minna Virkkula**, Karoliina Niemelä*, Jouni Juntunen*** and Janne Kumpuoja**

*School of Media & Performing Arts **Business Department ***Information Technology
Oulu University of Applied Sciences, Oulu, Finland
e-mail: firstname.lastname@oamk.fi

Presenters: Pekka Isomursu and Minna Virkkula
Presenters

**Pekka Isomursu**  
Adjunct professor, Doctor of Technology (SW & Electrical Engineering), EMBA, Professional photographer  
Head of Master’s Degree Programmes at School of Media and Performing Arts  
Principal Lecturer of Media Production  
Oulu University of Applied Sciences, School of Media and Performing Arts  
LinkedIn: [www.linkedin.com/in/pekka-isomursu-678737149/](www.linkedin.com/in/pekka-isomursu-678737149/)  
Instagram: [https://www.instagram.com/esapekkaisomursu/](https://www.instagram.com/esapekkaisomursu/)

**Minna Virkkula**  
Master of Arts, Bachelor of Engineering (BEng)  
Senior Lecturer and Project Manager at Oulu University of Applied Sciences, Business Department.  
Co-founder of user experience design office Soul4Design  
The research projects she works with, are focusing on service design, user experience and usability.  
LinkedIn: [www.linkedin.com/in/minna-virkkula-b5b24515/](www.linkedin.com/in/minna-virkkula-b5b24515/)
Earlier, we have developed a mobile application called smARTapp where you can learn about participating institutions, art works and local projects through, e.g., exclusive videos, Augmented Reality (AR) features, and a game called Storyworld.

In this paper, we discuss user evaluation of a new application, to be integrated in smARTapp. We call it Your Personal Art Tour (YPAT). YPAT focuses on enhancing the experience of a visit to an exhibition. At the time of writing, YPAT was a lo-fi prototype on a mobile phone, including the basic functionality with a rudimentary user interface.
Test setup & methodology

- A prototype application in iPhone
- 31 users tested (25-30 minutes each)
- Our own art exhibition at Gallery Å, Oulu University of Applied Sciences
- Testing methodology:
  - Modified/enhanced AttrakDiff
  - Observation and discussion
  - Questionnaire
- Their task was to walk freely at the gallery and test the app on their own, while they were observed.
- Some users were tested and interviewed in pairs which helped spark discussion. The questionnaire was filled individually.
- Afterwards, a questionnaire was filled.
A Poster of Our Exhibition and Screenshots of YPAT

YOUR PERSONAL EXHIBITION TOUR WITH AUGMENTED REALITY GUIDE
10-13.5.2019
Exhibition opening 9.5. at 2 pm
Galleria Ä, Kotkantie 1, 90250 Oulu

www.thecollectionoamk.com
Modified/enhanced AttrakDiff

- Human: technical, complicated, impractical, cumbersome, unpredictable
- Pragmatic: confusing, unruly
- Innovative: unprofessional, ugly
- Attractive: misrepresented, unappealing, repelling, boring
- Manageable: rejecting, bad
- Appealing: discouraging, boring
- Motivating: engaging, boring
- Pleasant: unpleasant, ordinary, unpleasing, ugly
- Simple: complicated, impractical
- Practicable: impractical, cumbersome, unpredictable
- Clearly structured: confusing, unruly
- Presentable: unpleasant, ordinary
- Engaging: boring, discouraging
- Predictable: unpredictable, confusing
- Inspired: unprofessional, ugly
- Inviting: rejecting, bad
- Good: bad, unruly
Questionnaire

- **Demographics:**
  - Age
  - Gender
  - Student / Staff
  - iPhone / other phone

- **Number of museum visits per year**

- **AttrakDiff (modified)**

- **Your first impressions?**

- **What did you like / did not like** in the app? Why?

- **What kind of** functionality **would you like the app to have?**

- **What kind of** content **would you like the app to have?**

- **From the table of attribute pairs, please mark 3 pairs that you are most certain about. Tell us about them.**

- **Would you like to add something?**
Participants were most certain of the answers marked dark. (How do you feel about using YPAT?)

<table>
<thead>
<tr>
<th>human</th>
<th>technical</th>
<th>complicated</th>
<th>impractical</th>
<th>cumbersome</th>
<th>unpredictable</th>
<th>confusing</th>
<th>manageable</th>
<th>unruly</th>
<th>ordinary</th>
<th>unpleasant</th>
<th>ugly</th>
<th>rejecting</th>
<th>bad</th>
<th>repelling</th>
<th>discouraging</th>
<th>boring</th>
</tr>
</thead>
<tbody>
<tr>
<td>simple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>practical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>straightforward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>predictable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clearly structured</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manageable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>innovative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pleasant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>attractive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inviting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>appealing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>motivating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>engaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Overall, feelings were positive about our prototype.

Note the pair “human – technical”: technical was not necessarily felt as being negative.
“Simplicity and practicality are important, because I want to be at the museum, not on my smart phone.”

“It’s nice that you do not need to go close to the artwork before it is recognized.”

“I liked links and related material, no need to google”

“While at an exhibition, audio feedback would be less distracting.”

“I would plan my own tour”, “I would search the object from the (interactive) floor plan”

“I’d love to share in social media” and just directly with friends.”
Design implications

- **Supporting role** of the application: at the exhibition, physical works of art are the focus of attention.
  - Works of art are at the center of the experience, users do not want to focus on their phone app.
  - Application gives freedom to choose the objects that user finds most interesting and study them at own pace.
- **Varying contexts of use**: user journey with the application can start at different points and with different goals.
  - **Before** exhibition: Planning your own tour
  - **During** exhibition: Using interactive map, audio guide including image recognition with camera, interesting content, user history and favorites
  - **After** exhibition: Learning more about stored information, and sharing with friends
- **Content is king**: the role of good content is crucial for the success of the application.
  - Many participants commented that the application is motivating and it is great to get more information about the artist and art piece, but the content must be inviting and interesting.
  - Another issue of high priority is to have interactive content (e.g., interactive map and elements)
- Considerations on **interaction and technology**: we found plenty of improvement ideas related to technology and interaction – such as too quick image recognition and avoiding user embarrassment.

Future Considerations

- A chatbot.
- To have **social aspects** included, e.g., recommendations based on other users with similar interest
- Recognition of **3D objects**.
- **Copyright** issues.
Thank you!

ACKNOWLEDGMENT
We gratefully acknowledge that smARTplaces is co-funded by the Creative Europe Programme of the European Union.