



MenoMaps

Usability Evaluation of a Map-Based Multi-Publishing Service

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Motivation

- MenoMaps I (2008-2010)
 - 'Multi-Publishing in Supporting Leisure Outdoor Activities'
- MenoMaps II (2010-2013)
 - 'Map Services for Outdoor Leisure Activities Supported by Social Networks'

 Map-based multi-publishing service prototype

Map-Based Multi-Publishing Service

- Allows users to access the same spatial information contents through different channels
- Channels may be
 - Map applications for the web, mobile phones and other interactive media
 - Printed maps
- Users may use the channel, or the combination of channels that is best suited for the current situation



Usability Evaluation

- Evaluation for three channels:
 - Web map application
 - Mobile map application
 - Printed maps

➔ The channels share the same geospatial information and visual identity



- Evaluating the whole multi-publishing service is essential
 - The user experience is formed across the channels

Evaluation of the Web Map and the Mobile Map Applications

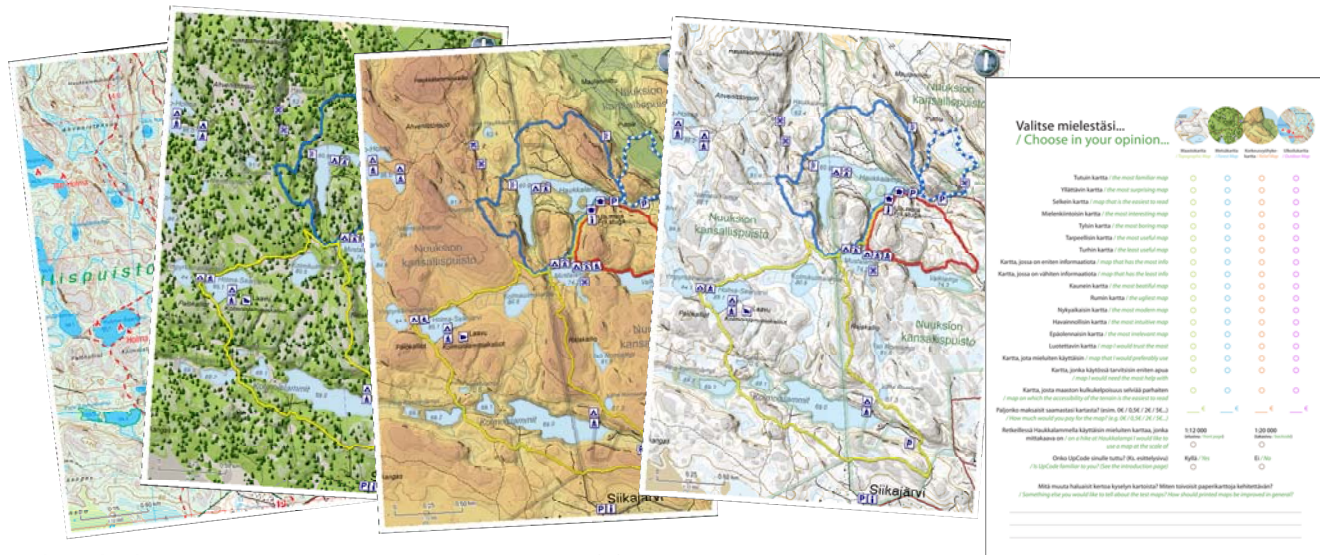
- The evaluation in lab environment included
 - Pre-test and post-test questionnaires
 - Tasks with the applications utilising the thinking aloud method
- Six participants
 - 3 female, 3 male
 - 32-58 years
 - A history of leading various kinds of hikes



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Evaluation of the Printed Maps

- Questionnaires distributed to an information centre in Nuukio National Park near Helsinki
- Four different maps were included
- A total of 166 completed questionnaires were received
 - 136 were Finnish
 - 20-73 years
 - 71 female, 93 male



Results for the Web Map Application

New Features

For example:

- Current information about other hikers visiting the same area
- User-generated information, such as the current state of fireplaces

User Experience

For example:

- Clear and intuitive terms
- Adding an overview map

Individual Content

For example:

- More options for personalisation
- Possibility to choose the colour and type of things the user can add to the map

Map Data

For example:

- Traditional looking maps were considered to be the safest
- Need for a legend

Results for the Mobile Map Application



Contents

For example:

- Current condition of the trails
- Up-to-date information about cafés, bus timetables and such

Hardware

For example:

- Getting used to the touch screen phone
- Problems with the internet connection

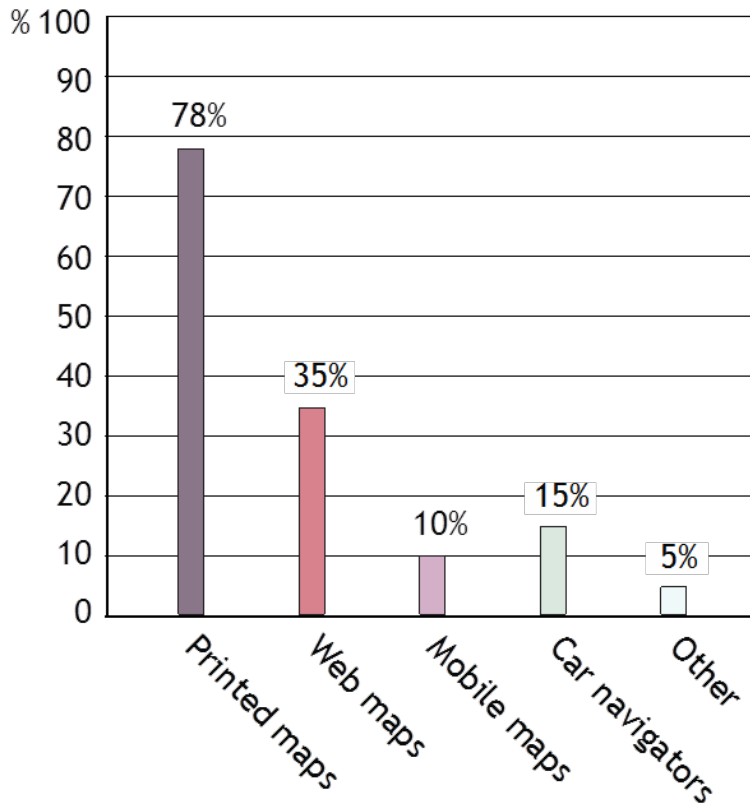
User Interface

For example:

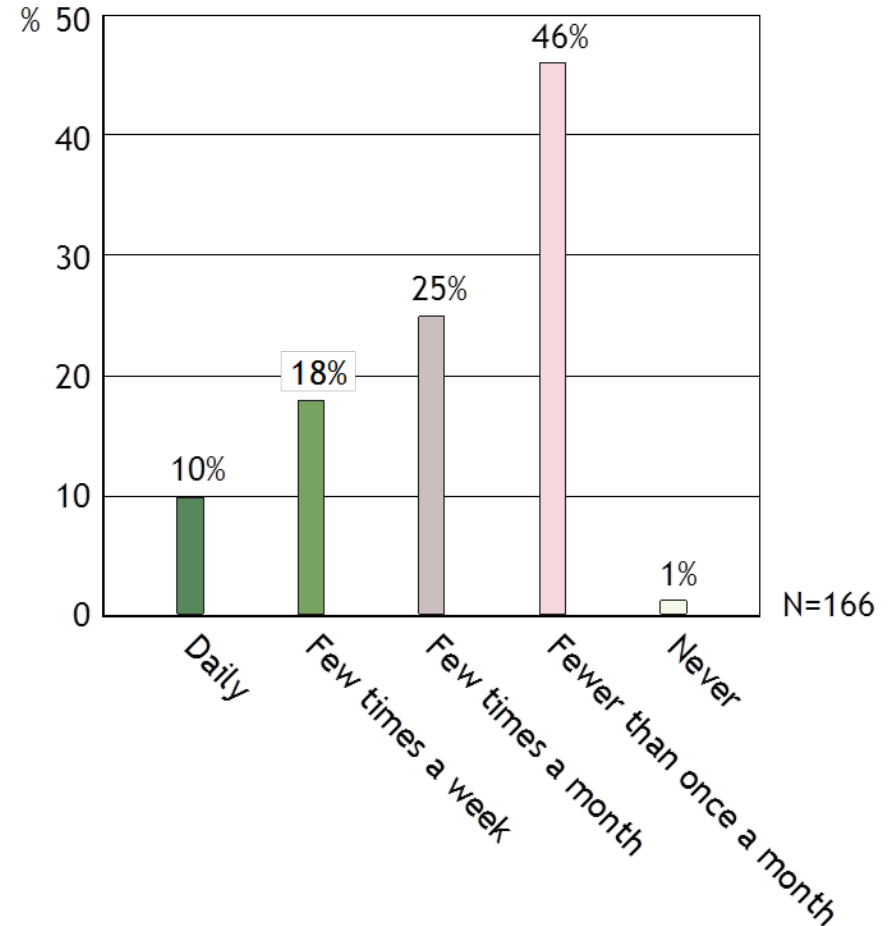
- The number of actions the user needs to perform should be minimized
- A search function is needed

Results for the Printed Maps

The types of maps the participants preferred to use

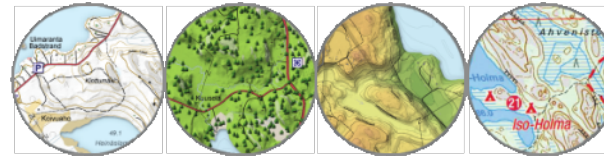


The frequency of map usage





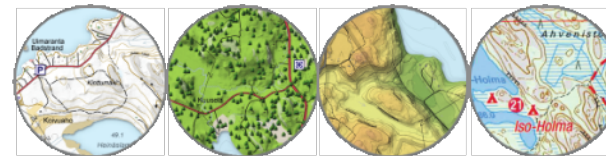
MenoMaps



	Topographic Map	Forest Map	Relief Map	Outdoor Map
The most familiar map	<u>41</u> %	<u>3</u> %	<u>3</u> %	<u>54</u> %
The most surprising map	<u>3</u>	<u>63</u>	<u>31</u>	<u>4</u>
Map that is the easiest to read	<u>46</u>	<u>15</u>	<u>18</u>	<u>21</u>
The most interesting map	<u>21</u>	<u>27</u>	<u>30</u>	<u>23</u>
The most boring map	<u>19</u>	<u>30</u>	<u>27</u>	<u>25</u>
The most useful map	<u>38</u>	<u>4</u>	<u>6</u>	<u>52</u>
The least useful map	<u>5</u>	<u>60</u>	<u>30</u>	<u>6</u>
Map that has the most info	<u>20</u>	<u>4</u>	<u>6</u>	<u>70</u>
Map that has the least info	<u>8</u>	<u>61</u>	<u>28</u>	<u>3</u>
The most beautiful map	<u>12</u>	<u>45</u>	<u>40</u>	<u>4</u>
The ugliest map	<u>21</u>	<u>13</u>	<u>16</u>	<u>50</u>
The most modern map	<u>32</u>	<u>18</u>	<u>29</u>	<u>22</u>
The most intuitive map	<u>37</u>	<u>17</u>	<u>18</u>	<u>29</u>
The most irrelevant map	<u>8</u>	<u>59</u>	<u>24</u>	<u>9</u>
Map I would trust the most	<u>39</u>	<u>2</u>	<u>7</u>	<u>53</u>
Map that I would preferably use	<u>39</u>	<u>8</u>	<u>15</u>	<u>38</u>
Map I would need the most help with	<u>13</u>	<u>33</u>	<u>26</u>	<u>29</u>
Map on which the accessibility of the terrain is the easiest to read	<u>21</u>	<u>10</u>	<u>22</u>	<u>48</u>
How much would you pay for the map? (e.g. 0€ / 0,5€ / 2€ / 5€...)	<u>2.00€</u>	<u>1.50€</u>	<u>1.40€</u>	<u>2.30€</u>



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Conclusions

- Keeping the information up-to-date was emphasised
- The idea of the multi-publishing service was adopted quickly
 - The users expected the channels to look alike and work in the same manner

 The user experience is constituted across the channels

 Requires consistency between the channels

Future Plans

- The prototype of the map-based multi-publishing service is further developed in an iterative process
 - Including usability evaluations
- Exhibition in the Nuuksio Nature Centre in Finland (2013)
 - Welcome!



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Thank you!



Flink H-M, Oksanen J, Pyysalo U, Rönneberg M, Sarjakoski LT (2011) Usability Evaluation of a Map-Based Multi-Publishing Service. In Ruas A (Ed) Advances in Cartography and GIScience, Volume 1, Lecture Notes in Geoinformation and Cartography, 2011, Part 2, 239-257, Springer.

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