Bringing usability to pretesting of Business Survey Web Forms in Statistics Finland

Jussi Rouhunkoski, Statistics Finland
Contents

- Cognitive Interviewing on Business Statistics in StatFin
- An Example Usability Case - Quarterly inquiry on international trade in services
- Step Further in Research and Development
  - Contents of the Analysis
  - Frameworks
  - Usability Problem Classification
Cognitive Interviewing on Business Statistics in StatFin

- Sessions are held on site in the respondent’s premises
  - Vs. household/individual in a laboratory
  - Methodologist always present
- The testing session is recorded with a software that captures audio and on-screen activity of the computer
  - Only the web questionnaires are tested
- Usability issues are also included in the protocol
AN EXAMPLE USABILITY CASE

Quarterly inquiry on international trade in services
The due date by which responses must be returned is the 20th of the following month or the first weekday after it.

1) You can fill in the electronic form on the "Exports of services abroad" and "Imports of services from abroad" tabs.

or alternatively

2) Submit the data on exports and imports of services as a csv file on the "Send csv file" tab.

- This way of answering is suitable for enterprises that have several items of international trade in services to several different destinations and whose information systems enable automatic creation of the file.

Further information about the data content is available from the following persons:

- Marjatta Tenhunen: +358 17 34 2027
- Riho Sippola: +358 17 34 3383
- Switchboard: +358 17 3411

Service email address

globalisaatio.tilaat@stat.fi

Further information about data collection:

Quarterly inquiry on international trade in services
International trade in services homepage
Foreign trade in services

Contact information

*Required input

Details of the enterprise

Enterprise id*
Name of enterprise*

Details of the enterprise’s contact person

Name of contact person*
Telephone number
Email address
Address of contact person
Postal code
Post office

Information on the person filling in the form (if not the same as the contact person)

Data submission modes

1) Fill in the electronic form on the "Exports of services" and "Imports of services" tabs

Save and go to exports page
### Foreign trade in services

**Exports of services**

- This inquiry concerns the quarter that has just ended, but you can also update or correct data for three preceding quarters.
- You can find more details about each service by pressing the information button in connection with the legend.
- The data are reported in euros (EUR 1).

#### Communication services

<table>
<thead>
<tr>
<th>Postal Services</th>
<th>2012 Q1</th>
<th>2012 Q2</th>
<th>2012 Q3</th>
<th>2012 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Add country</th>
<th>Save</th>
</tr>
</thead>
</table>

Total: 5765

---

<table>
<thead>
<tr>
<th>Courier Services</th>
<th>2012 Q1</th>
<th>2012 Q2</th>
<th>2012 Q3</th>
<th>2012 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Caledonia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Add country</th>
<th>Save</th>
</tr>
</thead>
</table>

Total: 654
Respondents found it difficult to browse through the classification and match with their own business functions.
• 30 categories (*countries) can be exhaustive for the respondent
  • E.g. One transportation company had to input almost 100 values for both pages (exports and imports)

• Need for redesign but limited time for planning and execution

→ Ad hoc modifications after the testing round
  • Information buttons next to each question → overlay dialog
  • An attachment file option for the larger business
Foreign trade in services

Exports of services

- This inquiry concerns the quarter that has just ended, but you can also update or correct data for three preceding quarters.
- You can find more details about each service by pressing the information bullet in connection with the legend.
- The data are reported in euros (EUR 1).

**Communication services**

<table>
<thead>
<tr>
<th>958 Postal services</th>
<th>2012 Q1</th>
<th>2012 Q2</th>
<th>2012 Q3</th>
<th>2012 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>12</td>
<td>321</td>
<td>321</td>
<td>555</td>
</tr>
<tr>
<td>Danmark</td>
<td>5174</td>
<td>55</td>
<td>8548</td>
<td>5165</td>
</tr>
</tbody>
</table>

Postal services, telegram services and post office counter services.

<table>
<thead>
<tr>
<th>958 Postal services</th>
</tr>
</thead>
<tbody>
<tr>
<td>5765</td>
</tr>
</tbody>
</table>

959 Courier services

<table>
<thead>
<tr>
<th>2012 Q1</th>
<th>2012 Q2</th>
<th>2012 Q3</th>
<th>2012 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Caledonia</td>
<td>8511</td>
<td>4512</td>
<td>5871</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>654</td>
</tr>
</tbody>
</table>
Foreign trade in services

Contact information

*Required input

Details of the enterprise

Enterprise id
Name of enterprise

Details of the enterprise's contact person

Name of contact person
Telephone number
Email address
Address of contact person
Postal code
Post office

Information on the person filling in the form (if not the same as the contact person)

Data submission modes

1) Fill in the electronic form on the “Exports of services” and “Imports of services” tab.

2) Submit the data on exports and imports of services as a csv file on the “Send csv file” tab.
   • This way of answering is suitable for enterprises that have several items of international trade in services to several different destinations and whose information systems enable automatic creation of the file.
Submitting data on international trade in services as a csv file

Submitting data as a csv file is an alternative method. If you have already filled in data on exports and imports of services, a csv file must not be sent.

This inquiry concerns the quarter that has just ended, but you can also update or correct data for quarters or years prior to the one being reported. If you update or correct previous quarters, please report that in the Additional information field of the Contact information page. Please also indicate whether this submission adds to previous data or replaces a previous submission concerning the quarter in question.

- Send the data in .csv format.
- The maximum size of the file is 20 Mb.
- An example of a csv file

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12345678</td>
<td>2012:2:EE:200:K:545</td>
</tr>
</tbody>
</table>

In the example, an enterprise, whose Business ID is 12345678, imported in the second quarter of 2012 financial services from the United States to the tune of EUR 32:15, exported financial services to Estonia to the value of EUR 54:5 and exported construction services to Sweden worth EUR 26.

Instructions on forming a csv file
List of country codes
List of service items

Send file

- When you have sent the csv file, you can log out from the end page or from the log out button in the top right corner of the page.

Go to end page

- If you have submitted data for other quarters than the one being inquired, please report that in the Additional information field of the Contact information page. Please also indicate whether that submission replaces or supplements any previous data.

Go to contact information
Step Further in Research and Development

- The problem could be that the information gained in the testing is not exploited in redesign issues in the future
- Need for better practices
  - Systematic and transparent way for organizing the observations
  - More detailed insight
    - How to simultaneously take into account the issues related to the overall response process and usability
  - Information sharing
  - Documentation
Contents of the Analysis

- The analysis is divided under two themes:
  - Usability: the interaction between the respondent and the web form
  - Survey response process: Organizational and behavioural factors that affect the survey response of an establishment
- Objective to exploit different frameworks to guide development activities and facilitate usability problem reporting
Usability

- Screenshot
- ID of respondent(s)
- Time tag
- Description of problem/other observation
- Usability or response process categorization

Response process

- ID of respondent(s)
- Time tag
- Description of problem/other observation
- Usability or response process categorization
Frameworks

Usability: A modified version of the user action framework¹

Response process: the hybrid response process model for business surveys²

1. Encoding in memory/record formation
2. Selection and identification of the respondent or respondents
3. Assessment of priorities
4. Comprehension of the data request
5. Retrieval of relevant information from memory and/or existing company records
6. Judgment of the adequacy of the response
7. Communication of the response
8. Release of the data

(x) = number of subcategories

Usability Problem Classification

1. Planning
   1.1. User's model of the system
   1.2. Goal decomposition
   1.3. Supporting planning for error avoidance
   1.4. User and work context

2. Translation
   2.1. Existence of a way
   2.2. Existence of a cognitive affordance

3. Perception / Physical Actions
   3.1. Perceiving physical objects (Static/Dynamic)
   3.2. Manipulating physical objects (location and control)
   3.3. Personal preferences

4. Assessment
   4.1. Feedback
   4.2. Information Display

5. Independent
   5.1 Look
   5.2. Style
   5.3. Feel
   5.4. Other

“Cognitive affordances help the user think or know about something and how it can be used. Cognitive affordances are screen objects that are, for example, visual cues to help determine actions to carry out an intention.”*

Solution for the example issue:
Information buttons and dialog

---

Thank you for your attention!

Questions and Comments:
jussi.rouhunkoski@stat.fi
References
