Scenario-Based Acceptability Research

シナリオ共感度調査
What is Scenario-Based Acceptability Research?

Scenario-Based Acceptability Research = SBAR

• a new quantitative research method.
• based on ‘scenario-based design.’
• combined with a questionnaire.
Procedure of SBAR

- Compose a scenario
- Create a questionnaire
- Analyze replies
- Grasp usability problems and users’ concerns to improve the system.

Usability specialists → Test participants

Answer questions

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Pros and cons of scenario-based design

+ Context of use could be well considered
+ Context-oriented problems could be extracted
+ Stakeholders can share the situation easily

However!

- Scenario can not shared with users
- Difficult to prioritize problems
Advantages of SBAR

1) Hypotheses are validated by research involving users

2) Quantitative results help to prioritize problems

3) Many replies from test participants can be expected
Advantages of SBAR (1)

1) Hypotheses are validated by research involving users

- Screen those who match the user in the scenario
- Ask to pretend being the user in the scenario

Situations with High acceptability can be identified!

User in a scenario  SBAR questionnaire  Test participants  Actual users
### 2) Quantitative results help to prioritize problems

<table>
<thead>
<tr>
<th>Partial scenario</th>
<th>Acceptability</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 &quot;From 9pm to 11pm, on channel 8. G-code is 1624983.” Using a remote controller, he inputs the G-code carefully. &quot;This is an important game, so I would like to make sure that the reservation is correctly done. Well, how can I check it?&quot;</td>
<td>52%</td>
<td>5</td>
</tr>
<tr>
<td>Q2 While watching a TV program, he suddenly decides to record it.</td>
<td>21%</td>
<td>6</td>
</tr>
<tr>
<td>{ Ko-ichi } &quot;Which DVD-RAM can be recorded? Got to check the quantity.&quot; He inserts a DVD-RAM into the recorder. &quot;Well, how can I check the quantity? Here is a problem.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7 Ko-ichi plays a DVD recorded on the other day, and finds that the picture is very rough. { Ko-ichi } &quot;Oops, the picture is rough. Why?&quot; He checks the mode of recording and finds it recorded on EP mode finally.</td>
<td>78%</td>
<td>1</td>
</tr>
</tbody>
</table>
Advantages of SBAR (3)

3) Many replies from test participants can be expected

Because test participants...

- can enjoy the story and answering questions.
- are interested in the new style of research.

Impact from test participants:
“Interesting style of questionnaire.”
“It was fun to answer questions!”

Impact from clients:
“It normally takes longer to collect questionnaire.”
“Test participants response so quickly!”
Two different approaches in SBAR

The size and purpose of the research decides which...

1. All-scenario method

- Background and characteristics of a user
- Example answer
- Scenario
- Questions with a rating scale of acceptability
  a. Never
  b. Sometimes
  c. Once or so
  d. Often

2. Partial-scenario method

- Background and characteristics of a user
- Example answer
- Summary/ration of the scenarios
- Questions with a rating scale of acceptability
  a. Often
  b. Sometimes
  c. Once or so
  d. Never
Pros and cons of each approach

All-scenario method

+ Context of use is sufficiently provided
+ Situations are more realistically considered
- Not so many questions can be asked

Partial-scenario method

+ Larger number of questions can be asked
- Context of use is not sufficiently provided
- Trimming of a scenario requires time and effort
Tips to conduct SBAR

A) Compose a scenario as realistic as possible

B) Research the system and users before composing

C) Screen test participants who agree with the attributes of the user in the scenario
How to set a rating scale

A) # of levels should be reasonable
B) Expression of ‘level of acceptability’ should be carefully considered
C) The lowest level must always be allotted 0 point

Examples of a rating scale with marks:

<table>
<thead>
<tr>
<th>Level of acceptability</th>
<th>Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Often</td>
<td>2</td>
</tr>
<tr>
<td>b. Seldom</td>
<td>1</td>
</tr>
<tr>
<td>c. Never</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of acceptability</th>
<th>Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Often</td>
<td>3</td>
</tr>
<tr>
<td>b. Sometimes</td>
<td>2</td>
</tr>
<tr>
<td>c. Seldom</td>
<td>1</td>
</tr>
<tr>
<td>d. Once</td>
<td>1</td>
</tr>
<tr>
<td>e. Never</td>
<td>0</td>
</tr>
</tbody>
</table>
Conducting SBAR

Distribute the questionnaire to test participants. 
To collect more effective data…
# Data Analysis in SBAR

<table>
<thead>
<tr>
<th>Level of acceptability</th>
<th>Point</th>
<th>Test participants</th>
<th></th>
<th>Perfect score</th>
<th>Total points</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Often</td>
<td>3</td>
<td></td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Sometimes</td>
<td>2</td>
<td></td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Once or so</td>
<td>1</td>
<td></td>
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<td>□</td>
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</tr>
</tbody>
</table>

\[
\text{Acceptability } A (\%) = \frac{\sum X_i}{k \cdot n} \cdot 100
\]
Criterion of acceptability

Analysts are to decide a criterion to distinguish situations with high acceptability and low acceptability.

When decided the case all test participants selected ‘b. sometimes‘ as a criterion…
Problem solving and idea developing

Situations with high acceptability

- Usability problems are prioritized to be solved.

- Potential needs and various ideas are extracted to develop utility concepts.
Case study with SBAR

• Creating a concept model of interior elements, and information and communication appliance for a next generation of cockpit for the US

• Context of use research of car navigation systems

• Creating a concept model of information and communication appliance, and future devices for a next generation of cockpit

• Context of drive - clarifying requirements for development of next generation of information and communication appliance
Some other ideas

1. Research to inquire hypotheses
   Context Laddering Method
   Extract various contexts of use by various users

2. Scale to classify users
   Interaction Scale
   Classify users based on interactions between a user and a system

3. Research to prove hypotheses
   SBAR
   Grasp acceptability by users
And from now...

We keep verifying various possibilities to apply these methods and their effectiveness.

Thank you very much for your kindest attention.

Any comments or questions are welcome to: tahira@novas.co.jp