

Scenario-Based Acceptability Research

シナリオ共感度調査

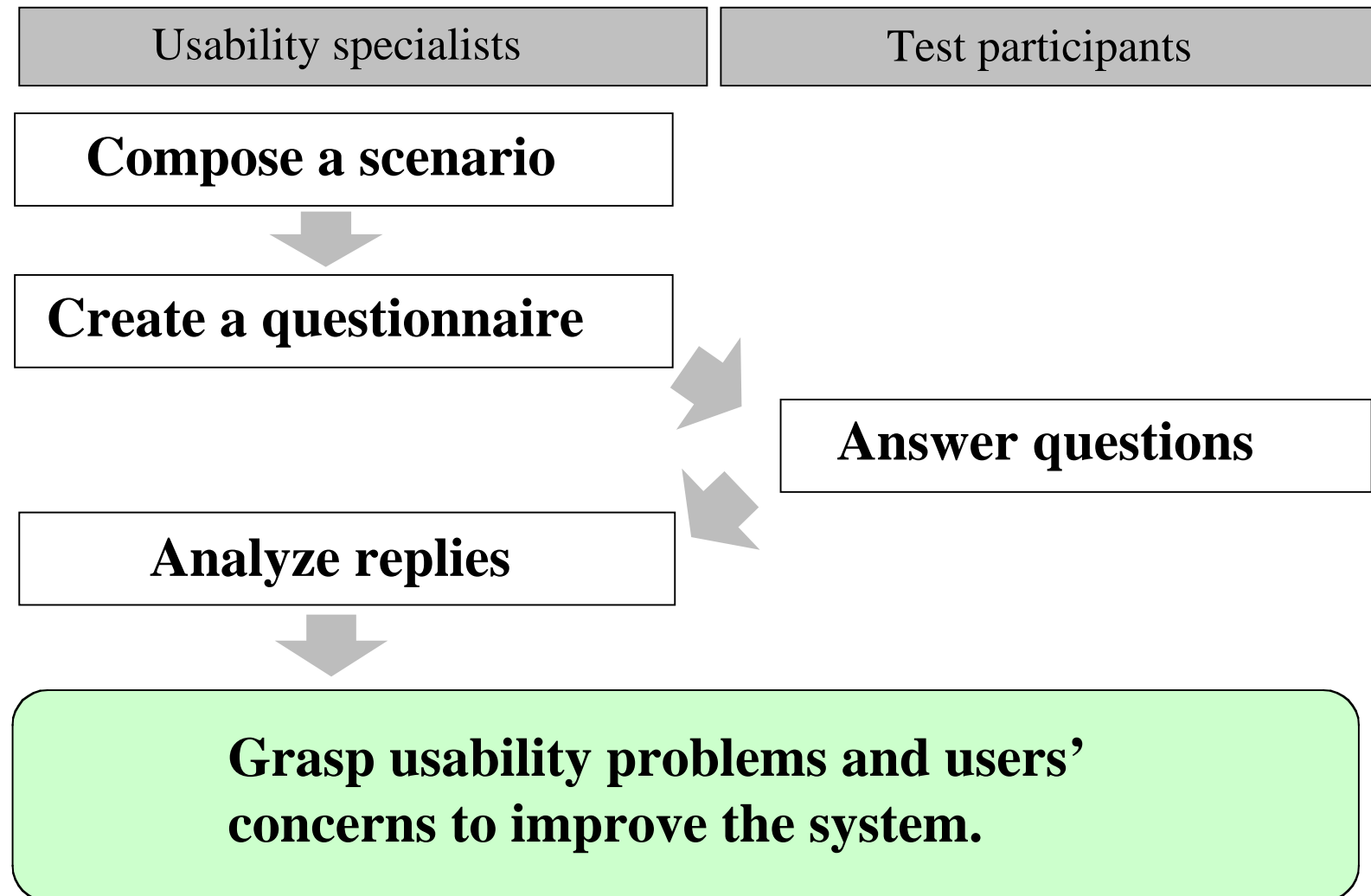


What is Scenario-Based Acceptability Research?




Scenario-Based Acceptability Research= **SBAR**

- a new quantitative research method.
- based on 'scenario-based design.'
- combined with a questionnaire.



Procedure of SBAR



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!

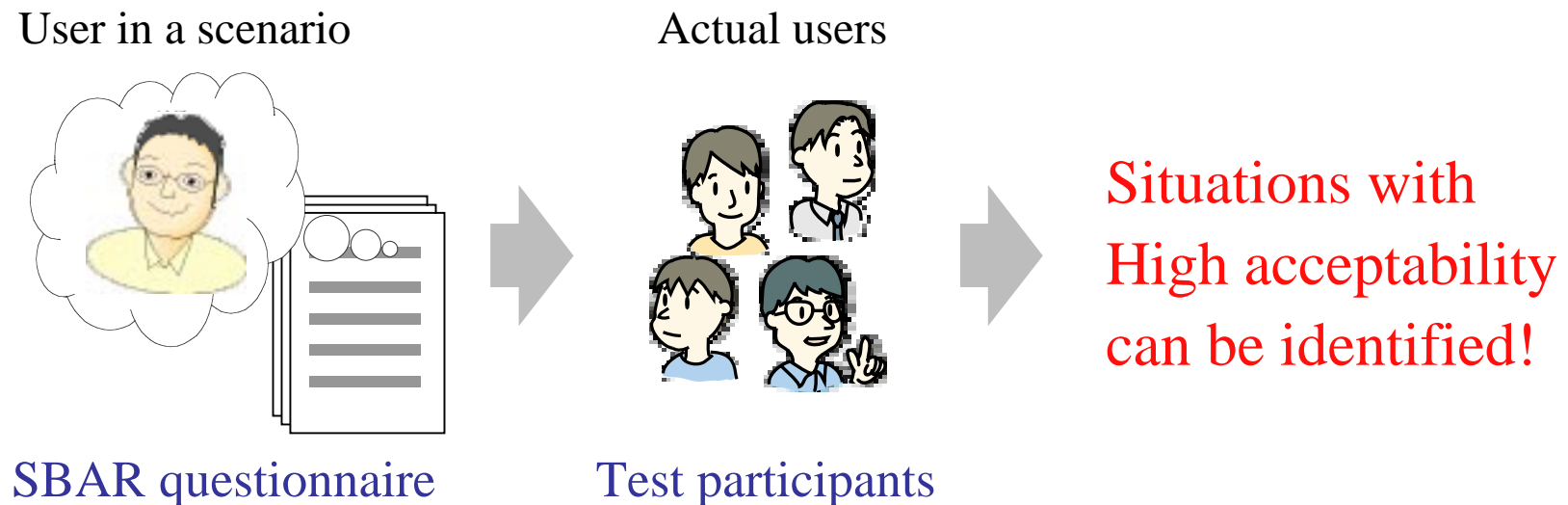
-  Scenario can not shared with users
-  Difficult to prioritize problems

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

Advantages of SBAR (2)

2) Quantitative results help to prioritize problems

	Partial scenario	Acceptability	Priority
Q1	"From 9pm to 11pm, on channel 8. G-code is 1624983." Using a remote controller, he inputs the G-code carefully. "This is an important game, so I would like to make sure that the reservation is correctly done. Well, how can I check it?"	52%	5
Q2	While watching a TV program, he suddenly decides to record it. [Ko-ichi] "Which DVD-RAM can be recorded? Got to check the quantity." He inserts a DVD-RAM into the recorder. "Well, how can I check the quantity? Here is a problem."	21%	6
	⋮		
Q7	Ko-ichi plays a DVD recorded on the other day, and finds that the picture is very rough. [Ko-ichi] "Oops, the picture is rough. Why?" He checks the mode of recording and finds it recorded on EP mode finally.	78%	1

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

Actor: SASAKI, Ko-ichi (25 years old)
 He has worked as a System Engineer since 3 years before. He is working hard from 9am to 5pm every day.
 His hobby is watching soccer games. He was busy enough to watch World Cup games in this June. He used to use VHS to record those World Cup games, but he found it rather hard to keep recording on video tapes. Recently he bought a DVD recorder. Not yet get used to use it.
 Fine and sensitive character is just like him as an SE, but he is sometimes scatterbrained.



Background and characteristics of a user

Please consider the underlined situations, and select one you think the most appropriate for yourself.

Recording reservation on a DVD recorder

(2-2) An alarm clock woke Ko-ichi up 30 minutes earlier than usual. As today's schedule is quite a tough, he decided to go to the office a bit earlier. He turns the TV on first. Watching his favorite morning news program, he gets stressed.
 (News) Tonight, at 9pm, Japanese national soccer team is going to face the very first game since Zico came to direct the team... Japanese team is a match for us tonight, at National stadium.
 (Ko-ichi) "What an important game! I cannot miss it, so need to record it on a DVD."
 Turning his remote, he turns on the DVD recorder which he just bought the other day.
 (Ko-ichi) "Come on! I got to go in 10 minutes."
 While waiting the DVD recorder becomes on, he notices that he is not sure on which channel the game is going to be broadcasted.
 (Ko-ichi) "Oops, I have to go down and get today's newspaper."
 He dashes down to the first floor of his apartment where he can find a post.
 (Ko-ichi) "From 9pm to 11pm, on channel B. G-code is 1024983."
 Using a remote controller, he inputs the G-code carefully.
Ko-ichi thinks it is an important game, so he would like to make sure that the reservation is correctly done. Well, how can I check it? **Q1**
 because he got to go to a meeting, he starts to be in a hurry.
 (Ko-ichi) "Well, time is over."
 After all, he gives up to check the reservation, and heads to work after turned the DVD recorder off.

About 10 hours later, Ko-ichi come home at 10 minutes past 9.
 (Ko-ichi) "Finally finished today's job. New soccer soccer!"
 Although he turned the TV on as soon as he came home, the game has already started.
 (Ko-ichi) "Oh, no! It's late."
 He is shocked to find it because he cannot bear watching a soccer game from the middle of it. He has to get up at 5 tomorrow morning to go on a business trip. As he hasn't prepared anything for it, he turned the TV off once.
 (Ko-ichi) "Even though I'd like to watch the recorded game from the beginning, I don't have time to do so. I'll just skip it. I'll watch it when I have time tomorrow." However, it's just hard not to watch it before going on a business trip from tomorrow.

Example answer

Ex. a. Often
 b. Sometimes
 c. Once or so
 d. Never

Questions with a rating scale of acceptability

Q1. a. Often
b. Sometimes
c. Once or so
d. Never

Q2. a. Often
b. Sometimes
c. Once or so
d. Never


Scenario

Questions with a rating scale of acceptability

a. Often
b. Sometimes
c. Once or so
d. Never

2 Partial-scenario method

Actor: SASAKI, Ko-ichi (25 years old)
 He has worked as a System Engineer since 3 years before. He is working hard from 9am to 5pm every day.
 His hobby is watching soccer games. He was busy enough to watch World Cup games in this June. He used to use VHS to record those World Cup games, but he found it rather hard to keep recording on video tapes. Recently he bought a DVD recorder. Not yet get used to use it.
 Fine and sensitive character is just like him as an SE, but he is sometimes scatterbrained.



Background and characteristics of a user

Please consider the underlined situations, and select one you think the most appropriate for yourself.

Recording reservation on a DVD recorder

Q1. (Ko-ichi) "From 9pm to 11pm, on channel B. G-code is 1024983. Using a remote controller, he inputs the G-code carefully. This is an important game, so I would like to make sure that the reservation is correctly done. Well, how can I check it?"

Q2. (Ko-ichi) "Finally finished today's job. New soccer soccer!" Although he turned the TV on as soon as he came home, the game has already started. "Oh, no! It's late. It's already started." Even though I'd like to watch the recorded game from the beginning when the game is over, it's going to take long time which means I can't have little sleep. However, it's just hard not to watch it before going on a business trip from tomorrow."

Q3. While watching a TV program, he suddenly decides to record it. (Ko-ichi) "Which DVD-RAM can be recorded? Got to check the quantity." He inserts a DVD-RAM into the recorder. "Well, how can I check the quantity?" Here is a problem."

Q4. Although he finds an available DVD-RAM, he cannot find the drive to be ready to record. (Ko-ichi) "Come on! The scene which I wanna record is gonna over. It takes too much time. When does it start to record?"

Q5. Ko-ichi plays a DVD recorded on the other day, and finds that the picture is very rough. (Ko-ichi) "Oops, the picture is rough. Why?" He checks the mode of recording and finds it recorded on EP mode finally.

Example answer

Ex. a. Often
 b. Sometimes
 c. Once or so
 d. Never

Summarization of the scenarios

Q1. a. Often
b. Sometimes
c. Once or so
d. Never

Q2. a. Often
b. Sometimes
c. Once or so
d. Never

Q3. a. Often
b. Sometimes
c. Once or so
d. Never

Q4. a. Often
b. Sometimes
c. Once or so
d. Never

Q5. a. Often
b. Sometimes
c. Once or so
d. Never




Questions with a rating scale of acceptability

a. Often
b. Sometimes
c. Once or so
d. Never




Continued.

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:

Level of acceptability	Point	Level of acceptability	Point	Level of acceptability	Point
a. Often	2	a. Often	3	a. Often	4
b. Seldom	1	b. Sometimes	2	b. Sometimes	3
c. Never	0	c. Seldom	1	c. Seldom	2
		d. Never	0	d. Once	1
				e. Never	0

Conducting SBAR

**Distribute the questionnaire to test participants.
To collect more effective data...**



Data Analysis in SBAR

Level of acceptability	Point	Test participants					
		1	2	3	n	
a . Often	3						Perfect score $k(=3) \times n$
b . Sometimes	2						
c . Once or so	1						
e . Never	0						
		X ₁	X ₂	X ₃	X _n	Total points X_i

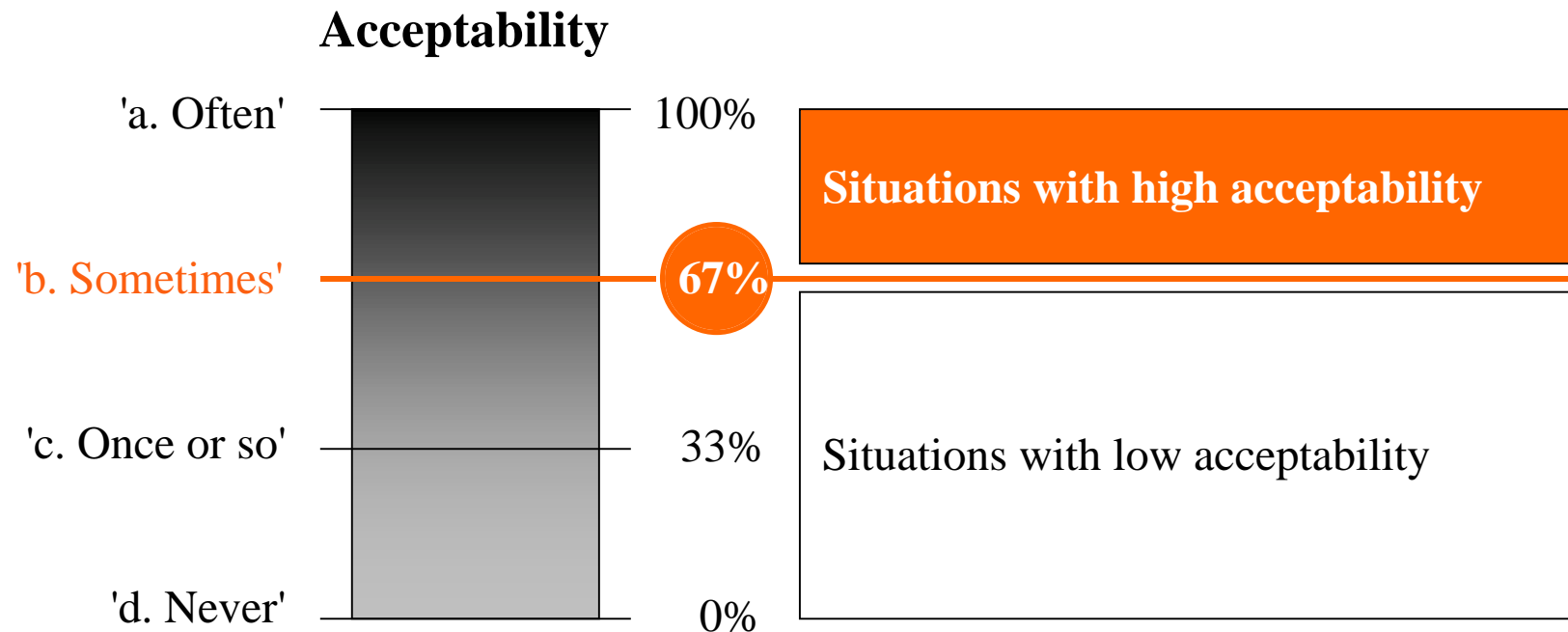


$$\text{Acceptability } A (\%) = \frac{X_i}{k \times n} \times 100$$

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



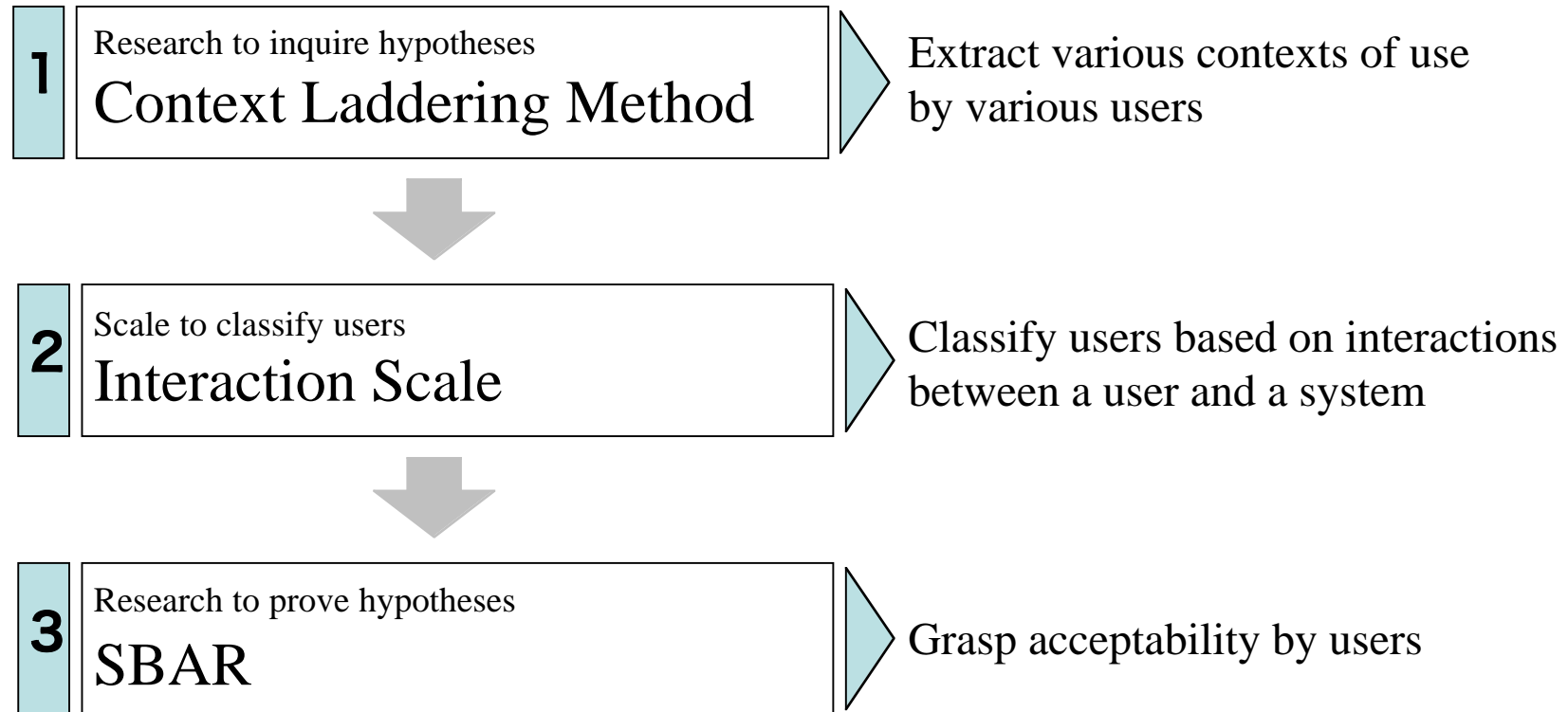
Usability problems are prioritized to be solved.

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



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