AWARENESS SESSION AT SEABED GEOPHYSICAL

Improving customer service in SeaBed seismic systems

Company's profile

SeaBed Geophysical is a small Norwegian service company that specializes in SeaBed seismic. The concept is to deploy geophone sensor nodes into the SeaBed and acquire high quality multi-component data.

The company deliver a new technology called CASE (CAbleless SEismic system), and can provide all aspects of SeaBed seismic; feasibility studies and pre-survey planning, data acquisition, on site quality control, data processing and interpretation.

SeaBed Geophysical has ambitions to be a market leader and operate world wide through the development and implementation of this emerging technology. The aim is to be able to solve the problems that are very difficult or impossible to solve with traditional or conventional surface marine seismic.

Place and date of the sessions

Trondheim, Norway, 11 March 2005

Presenters/ facilitators

Sebastiano Lombardo, SINTEF Technology and Society

Ottar Bakås, SINTEF Technology and Society

Application field

Process development

Creative Phases involved

Predisposition, Idea Generation, Evaluation

Description of the participants

The awareness session was attended by staff central in developing the company's products and services. Six employees were present, representing the following functions of the company:

- CTO, Chief Technical Officer
- Software team (IT, programming etc)
- Hardware team
- Sales

Agenda of the session

Time	Session	Phase
09.00 – 09.15	Introduction	Predisposition
09.15 – 09.45	Creativity and creative techniques	
09.45 – 10.15	Presentation of 'Provocation and Movement'	Idea generation
10.15 – 10.30	Break	
10.30 – 11.15	Exercise with 'Provocation and Movement'	
11.15 – 12.00	Lunch	Idea evaluation
12.00 – 12.30	Presentation of 'Six Thinking Hats'	
12.30 – 13.00	Exercise with 'Six Thinking Hats'	
13.00 – 13.15	Break	Idea generation
13.15 – 13.45	Presentation of 'Morphological Analysis'	
13.45 – 14.15	Exercise with 'Morphological Analysis'	
14.15 – 14.30:	Break	Idea generation
14.30 – 15.00	Presentation of 'Creativity Templates'	
15.00 – 15.30	Summary and conclusions	Overall evaluation of awareness session
15.30 – 16.00	Feedback and final discussion	

Description of the session

PREDISPOSITION PHASE

The awareness session started with an exercise where each person had to present himself. The participants had to draw a symbol that represented his interests. This worked well as an ice breaker and sparked a sense of creative thinking.

The first presentation ('Creativity and creative techniques') had the purpose of raising the awareness of the team about the importance and usefulness of creativity. Further, it worked as a motivation for the participants to use the creative techniques in the following presentation.

Feedback:

- Participants were successfully involved by giving personal definitions of creativity

IDEA GENERATION PHASE

❖ Provocation and Movement

After presenting the technique, the exercise started with defining a focus area where SeaBed wanted to find improvements. The company had prepared a list of possible areas, and after a discussion, the participants agreed to focus on Quality Control.

A clear purpose of the session was determined:

"Improving customer confidence and satisfaction from our CASE technology"

Participants listed a set of known facts about today's situation. Based on these facts, a set of provocations were listed on a flip-over. Together, the participants selected the provocation they wanted to continue working with.

Known facts	Provocations	Provocation Method
A high number of nodes are placed in the water with a large distance between them	PO: Seismic data is collected before the node is put in the water	Exaggeration
The equipment is operated in water	**PO: The equipment is operated above water**	Negation
Communication in water give a restraint on bandwidth	PO: We do not need more bandwidth	Dream
The customer wants reliable data with little "noise"	PO: The customer doesn't care about data quality if we sell waffles instead!	Change of logic

The company selected to work with the provocation "the equipment is operated above water".

Then each person in the group was challenged to state movements. The different methods for generating movements were employed. This resulted in a list of 7 ideas for how to change their measurement process.

Feedback:

- One should not care if the provocations are not realistic
- During an exercise of 25 minutes, SeaBed was able to create seven new ideas for their operations. This shows the potential of the technique

❖ Morphological analysis

The technique was presented and received much enthusiasm from the company. The exercise followed the a clear process, including definition of problem, finding parameters, expressing values, examining combinations and formulation of idea.

SeaBed decided to continue working on the same problem:

"How to increase the customer's faith and satisfaction from CASE-technology?"

Then the group started to find the different parameters of the problem. Then they described suitable right values to the parameters. The following is a short version of the result:

Image	Physical attributes	Organisational attributes	Competing technology	Price
Track record	Noise	Financial strength	Bottom cable	High
Health, Security & Environment	Timing	HSE processes	Streamer	Middle
	Connector	Nr. of employees	Other node-systems	Low
			EM-methods	Free

After the matrix was created, the participants started to play with ideas from different combinations of the values. Within this 40 minute exercise, the group was able to detect 4-5 different ideas for improving customer satisfaction and faith in CASE-technology:

1. ***Reliability:*** *by making the node system more reliable and expanding functionality (requiring less people for service and operation), one can offer a lower price and lower exposure to HSE-issues.*

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2. ***Different market segments:*** *by reducing response time (timing), one can reduce use of energy and thereby reduce price for segments with less purchasing power*
3. ***Customer relations:*** *By doing some initial work for free, one can be obtain larger projects from customers later*
4. ***Partnerships:*** *by allying with other node systems, one can be able to provide the best results for customers*

Feedback:

- Defining the focus for the application of the technique is essential
- The techniques was found to be very useful for improving products and processes
- The key issue is to define the 'right' parameters and their values
- The matrix can be prepared in advance in such sessions, and then the group can join together to examine new ideas
- Typical product sheets might be used as an input for the matrix

❖ Creativity templates

The technique was given an in-depth presentation, as four variations of the technique exist. In agreement with the company, this session focused on presenting each of the four templates in the technique:

- Attribute dependence template
- Component replacement template
- Component displacement template
- Component control template

Due to the fact that this presentation was prolonged, an exercise of this technique was not conducted.

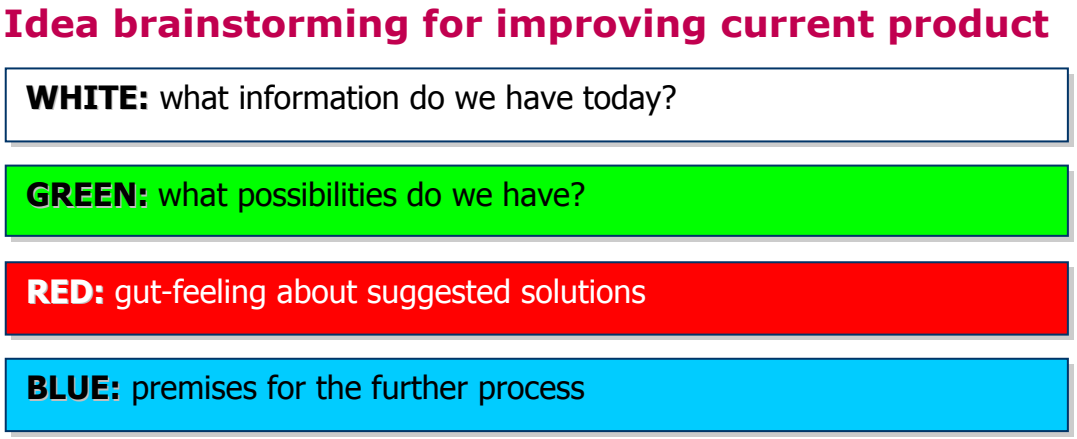
Feedback:

- SeaBed found this technique to best fit for product development, and less apt for process innovation
- The first of the four variations (attribute dependence template) seem to be the most applicable technique

EVALUATION PHASE

❖ **Six Thinking Hats**

The concept of 'Six Thinking Hats' was presented, followed by an exercise. A focus area was defined for the discussion based on current issues in the company. SeaBed selected to discuss how they can improve the nodes in their measurement systems. With help from the facilitator, the group defined a sequence of 'hats' to employ in the discussion:



The discussion itself had a very technical nature and spent a lot of time one the first phase. The discussion ended up going back and forth between the different 'hats', but the concept of using the different 'hats' for different types of statements were easily conceived. The facilitator made a few interventions to make the participants aware of which 'hat' they were using at the moment.

Feedback:

- It is essential to have a clear definition of the purpose of the discussion
- Even though the discussion was not very effective, the group was very positive about the Six Thinking Hats
- It is easy to get into a pattern where the discussion jumps back and forth between 'yellow hat' (positive aspects) and 'black hat' (negative aspects)
- SeaBed stated that in order to institutionalise the technique, it is necessary to practice it over and over again

Conclusions

The awareness session ended with a discussion about the importance of creativity and the applicability of the presented techniques.

These were overall feedback from SeaBed about the techniques:

- Having a planned approach to use of creativity is essential – and the presented techniques seem to be powerful tools
- The threshold to employ the techniques seem very low
- 'Provocation and Movement' and 'Six Thinking Hats' were the two favoured techniques
- Create a user forum where companies using these techniques can share experiences, knowledge and ideas about the use.
- Create a simple sheet about each technique that can be put on the wall in the meeting room – this way employees can be easily reminded about the contents and use of each technique

The Chief Technical Officer points out new ideas generated during the awareness session to one of the facilitators.