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The Futures Window – A Medium for Presenting Visual Weak Signals to Trigger Employees’ Futures Thinking in Organizations

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Abstract

Images are a powerful tool for transferring information and getting people's attention. However, they have not been utilized much in the field of futures studies. This paper introduces a new method, *the Futures Window*, which uses visual weak signals to trigger futures thinking and innovating in organizations. The method was tested as an adapted version at VTT in two pilots and opinions on the method were asked from the employees. The results show that the method was positively received by the employees and it was considered to trigger futures thinking. The results of this study encourage for further development of the Futures Window.

Key words: *visual weak signals, image, futures thinking, futures studies, anticipation, innovating, futures reporter, the Futures Window*

1. Introduction

Weak signals are today's earliest form of information which can foretell changes in the future. This information might sound funny or strange and it can cause confusion, because it offers a totally new idea, innovation or way of thinking. As time passes, it might come out that weak signals were the first signs or symptoms of a big change, even megatrends. However, weak signals are not always clues about big changes. They might simply be information about strange things that are happening.

In the discipline of futures studies, weak signals are recognized as an important medium for trying to anticipate changes in the future (see for example: Ansoff [1], Coffman [2], Shoemaker and Day [3], Mannermaa [4], Hiltunen [5], Saul [6]). There are several methods for collecting and analyzing weak signals, presented by various researchers (see for example Ansoff [7], Lücken [8], Hiltunen [9], Mannermaa [10], Ilmola [11], Kuosa [12]). However, there seems to be some challenges in utilizing them, because their number is huge and finding patterns of change is challenging. Also, one problem is how to spread the information about weak signals in the organization effectively. The new concept called

the Futures Window, presented in this article, aims to offer a solution to the challenge of spreading weak signals in an organization in visual form.

In the field of futures studies, visual images (photographs, cartoons, drawn images and the like, excluding however normal graphs like pie charts, tables, etc.) have not been utilized much as a technique for anticipating or creating the future.* For example a typical way to present scenarios is in a written form (for example: IPCC Special Report: Emission Scenarios [13], Venäjä:2017: kolme skenaariota [Russia: 2017, three scenarios] [14]). One reason for this can be the fact that written form of reporting is more appreciated by academics and officials. Also, the fact that typical futurists' or scenario planners' skills are not sufficient for creating images of the future can be a major reason for the lack of using images. Artists or designers would be needed for this. There are, on the other hand, some companies that have pioneered in using images in communicating future possibilities. One example of this is Philips and its *Vision of the Future* project in 1995. In that project, the designers created images of possible future products and these images were published in the Internet [15] and as a book [16]. Today, Philips Design is still a pioneer in using visualization in communicating future visions.

The power of images is recognized in the old saying: a picture is worth a thousand words. Pictures are also significant in getting people's attention. This is verified in a study by Knobloch et al. [17], who noticed that adding images to articles in an Internet magazine increased the selection of those articles. Furthermore, threatening images increased attention more than innocuous images. Also, an image is more rapidly understood than a text. Biederman [18: pp. 41-42] has found that "in a 100-millisecond exposure of a novel scene, people can usually interpret its meaning...and recognize a pattern in a single glance." Näsänen [19] on the other hand comments that : "In comparison to verbal information, graphic information, icons and other graphic symbols and representations, may greatly facilitate and speed up the processing of visual information in the sense of sight and the brain. For instance, a mouse cursor icon depicting a hand with the index finger

* Science Fiction movies, cartoons and images are one outstanding way to present future visions in visual forms. However, this form of art is not utilized much by public organizations or companies

pointing out can be perceived by focusing the eyes just once. The equivalent information in the text form “press this button” would require the eye movement to stop at least twice and would therefore at least double the interpretation time.”

The Futures Window method was developed to utilize the power of images, e.g. visual weak signals, in triggering the employees’ futures thinking. The author sees that weak signals are excellent tools for enhancing creativity, which is needed in creating the future and futures thinking (anticipation). The Futures Window was piloted at VTT Technical Research Centre of Finland, which is the biggest contract research organisation in Northern Europe. The results of the pilot were promising and that encourages for further development of the Futures Window.

2. Description of the method of the Futures Window

The concept of the Futures Window was developed by the author and VTT volunteered to test the idea in its premises. Originally, the idea of the Futures Window includes monitors that show visual weak signals in the premises of organizations. Visual weak signals can be, for example, images, photographs, animations or video clips of new inventions or strange things happening today[†]. The Futures Window monitors are installed in canteens, coffee rooms, elevators, lobbies, toilets, or wherever a company’s employees happen to stand still for a while. See the following figure:

[†] Note: weak signals are not equivalent to scenarios. However, one application of the Futures Window could be to show scenarios of the future.



Figure 1. An imaginary Futures Window in a canteen of some company.

The purpose of the Futures Window is to trigger the employees to think of the possibilities in the future. It might also give new ideas for innovations for people working with product or market development, strategy department, etc.

The Future Window concept originally includes a *futures reporter*, whose task is to produce and collect the material (e.g. images of weak signals) for the Futures Window. A company's futures reporter is a kind of a cool hunter, but with a longer time perspective in her mind. She hunts for visual weak signals by surfing the Internet, wandering around in interesting places with a camera, interviewing the company people and interesting people outside the organization. She also transfers the weak signals, which are in the form of e.g. a text or a rumour, into visual images with the help of artists and designers. She holds the

wires of the Futures Window in her hands and edits all material applicable to the Window (for example material send by the company’s employees). The tasks of the futures reporter are portrayed in Figure 2.

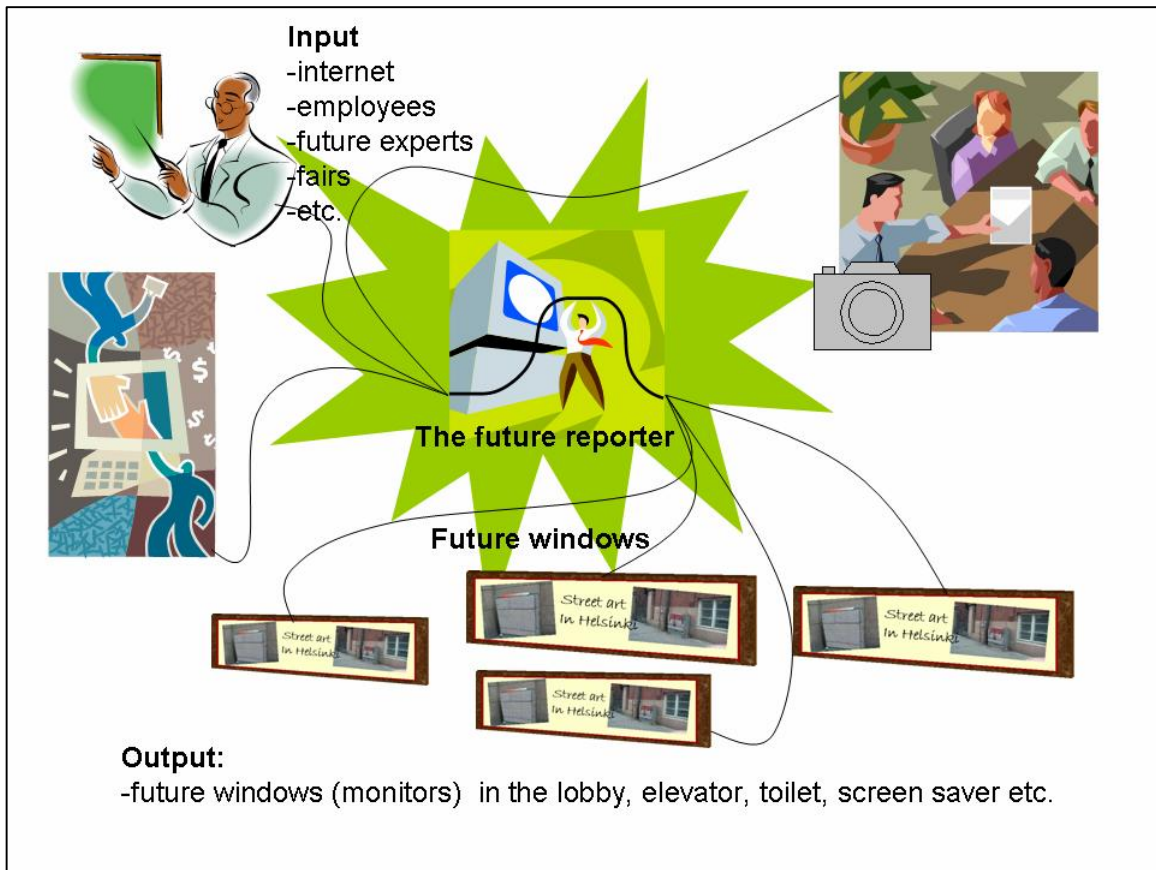


Figure 2. Futures reporter’s tasks in the original idea of the Futures Window

3. Pilot Testing of the Futures Window at VTT

The Futures Window has been piloted as an adapted version at VTT Technical Research Centre of Finland. The piloting was done in co-operation with VTT’s new future-oriented program Technology Futures Forum (TFF), headed by VTT’s Chief Research Scientist *Sirkka Heinonen*. The first pilot (Pilot 1) took place in two seminars arranged at VTT in November 17th (referred to as the first, Somed seminar) and December 1st 2006 (referred to as the second, TFF seminar) and it was combined with group exercises based on the

material in the Futures Window. On the basis of the images, the participants started to think of, for example, services/products that might have a demand in the future. For this process, the participants were given a form which included the basic steps of the exercise.

The second, different type of pilot (Pilot 2) of the Futures Window was arranged in the VTT building DigiHouse during week 9, 2007. This pilot was following the initial idea of the Futures Window more closely. Pilot 2 used the same material as Pilot 1 (see table 1 for details of the pilots). The material, which consisted of 48 images, was collected by the author (44 images) and VTT's Chief Research Scientist *Sirkka Heinonen* (4 images). All the images were shown for 10 seconds at the time, which makes the show about 8 minutes long.

Table 1. Descriptions of Pilots 1 and 2.

	Dates	Occasions	Key idea	Material
Pilot 1	Somed seminar: 17 th November and TFF seminar 1 st December, 2006	Two seminars	The Futures Window material as a starting point of exercises	Power point show of 48 visual weak signals (10 second for each images at the time)
Pilot 2	From 26 th February till 2 nd March, 2007	A continuous image show for one week in DigiHouse's lobby	Trigger futures thinking of by passers	Same as in the Pilot 1

3.1. Material for the Futures Window

The criterion for selecting the images was that they showed some new idea, invention (social, marketing and technical) or something different from what we are used to see today – i.e., the images could be called *visual weak signals*. Examples of the images were Ecopod coffin made of recycled paper (criteria: a new product concept/thinking in a very traditional

business), Lamborghini for sale in a supermarket next to lemonade bottles (even though being a marketing trick, a new idea of selling even high luxury stuff in every day market existed here), an eye jewellery that was implanted in the eyeball (a totally new concept of implanting extra stuff to eyes), MetroNaps sleeping chair for working environments (present a new idea in the working culture), an ad for “internet free day” (an antitrend for dominating tendency of using internet). Some of the figures also included some text, such as the source of the image and key words of the image. For example in an image of Down’s syndrome children modelling the latest spring fashion in a magazine there was the text: ”Child Models in the *Perhe* magazine.” (In this case, the image also contains text from the magazine article, as for instance the title “Kids Fashion Show” in Finnish.) The image is shown in Figure 3 .



Image 3. An image in the Futures Window: Child models in the *Perhe* magazine

This image was selected as one visual weak signal because it is unusual to use disabled people as fashion models.

3.2. Carrying out the pilots

In Pilot 1 (the two seminars), visual weak signals were presented to the audiences as a power point slide show on big screens during seminar breaks. Also, for a group work based on the visual weak signals, the images were printed as posters that were attached to the walls to make easier the participants' discussion about all the images.

The seminar participants were also asked to fill in a questionnaire about the Futures Window. In the seminars, the questionnaire was available online in computers which were there for that purpose. The participants were encouraged to fill in the questionnaire. The questionnaire consisted of questions related to the respondents' background (gender, age, business at VTT) and opinions about the Futures Window measured in different ways. Also, the respondents had the opportunity to write their comments about the Futures Window method.

In Pilot 2 the same show of visual weak signals was projected on the "glass box" in the lobby of the so-called DigiHouse of VTT. Because of the nature of the "glass box", the images could also be seen from the other side as a mirror images. This was seen as an extra attractor for employees to come to see the Futures Window. Also, a short advertisement of the Futures Window was put on VTT's Intranet, so people working in other VTT buildings were encouraged to come and see the pilot. This pilot took place during 26th February to 2nd March, 2007. The show was switched on by the lobby personnel of the DigiHouse every morning at approximately 7.00-8.00 a.m and it was switched off at about 17.00 p.m.. The next week a questionnaire, which slightly differed from the Pilot 1's questionnaire, was send to all the employees working in the DigiHouse. In addition, people not working at DigiHouse had the opportunity to answer the study via a link put on the Intranet of VTT.

3.3 Results of Pilot 1.

In this section, the results of seminars one and two are put together because of the similarity of the situations. In Pilot 1 (in Somed seminar and TFF seminars), 30 participants (Somed: 13; TFF: 17) from the total of 74 participants answered to the questionnaire, resulting in a

response rate of 40,5%, which can be considered good. 40,0% of the respondents were women and 60,0% men. The majority (40,0%) of the respondents belonged to the age range 26-35 years while the next biggest age group (23,3%) were people 36-45 years. In the seminars, 2/3 were from VTT and 1/3 were outside of VTT.

3.3.1 Opinions about the Futures Window

The participants were asked to comment on some claims about the Futures Window in the questionnaire. It was possible to estimate the claims in four possible degrees (fully disagree, somewhat disagree, somewhat agree and fully agree). Also it was possible to tick “cannot say” if none of the descriptions the values were suitable.

The claims of the study were the following:

1. Futures Window gave me new ideas about the future.
2. The Futures Window could be a useful activator of futures thinking in my own work.
3. In my opinion, it is important to think in a futures oriented way in my work.
4. At VTT (or other organization, if I am outside of VTT), there could be Futures Windows for example in canteens and coffee rooms.
5. It should be possible for all employees to send images to the Futures Window.
6. The Futures Window gave me new ideas about the possibilities of the technology area that I am working with in the future.

The statistics of the respondents' answers to the claims are shown in Figure 4.

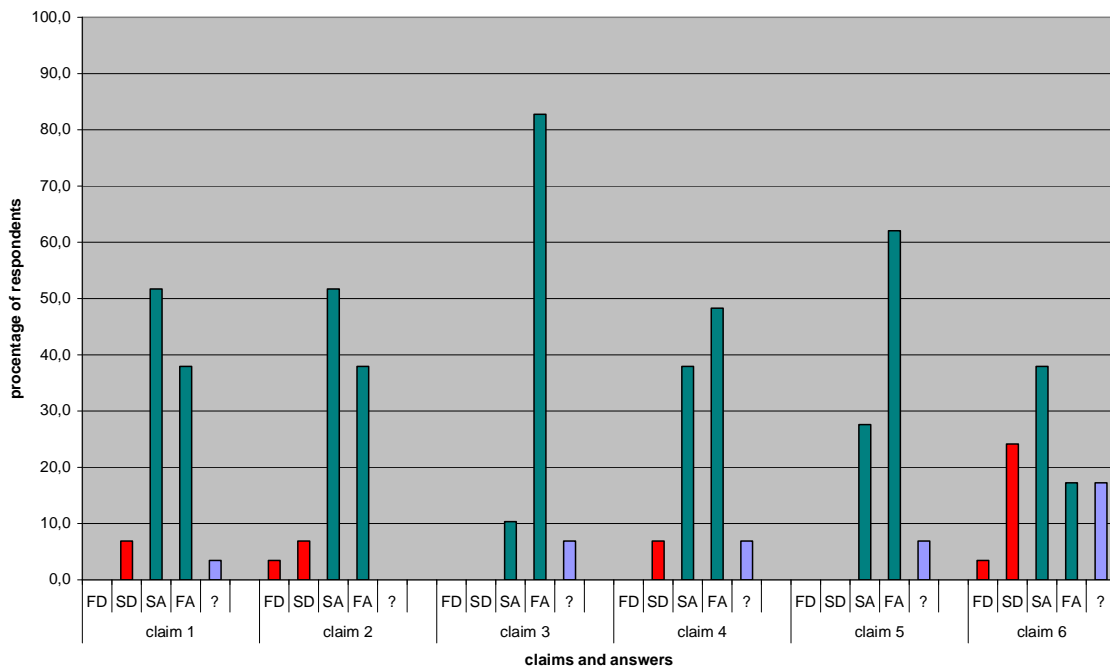


Figure 4. Pilot 1, claims and answers to them.

In the figure 4, the y-axis marks the percentage of respondents. In the x-axis, there are all the claims (1–6) and different possibilities to answer them, which are marked by the following codes: FD= fully disagree, SD= somewhat disagree, SA= somewhat agree, FA= fully agree and ?= cannot say. The overlook of the figure reveals that the attitude to the claims has been very positive. Agreeing with the claims was more preferred than disagreeing. Especially in the claim 3 (“In my opinion, it is important to think in a futures oriented way in my work”), there were no disagreements as an answer, which tells that the participants were future oriented. This could also explain the positive feedback to the Futures Window.

89,7% of the respondents agreed (fully + somewhat) and only 6,9% disagreed (somewhat) with the fist claim (“Futures Window gave me new ideas about the future”). Based on that result, the Futures Window is a valuable tool for triggering futures thinking. The second claim (“The Futures Window could be useful activator of futures thinking in my own work”) had similar results than the first. The percentage of

(somewhat + fully) agreeing respondents was again 89,7%, and 10,3% of the respondents disagreed.

The third claim (“In my opinion, it is important to think in a futures oriented way in my work”) inquired the importance of futures thinking in the work of the respondents. The percentage of the (somewhat + fully) agreeing was as high as 93,1%. No one disagreed with this claim. The reason for this high numbers is the fact that the pilot was conducted in a research organization which is supposed to look to the future. In addition, the projects (Somed and TFF) are very future oriented, so the participants are also interested in the future.

The purpose of the fourth and fifth claims was to inquire whether there is further need for using the Futures Window at VTT (or other organizations). And if this happened, how should employees be involved with the Window? Thus the fourth claim was: “At VTT (or other organization, if I am outside of VTT), there could be Futures Windows for example in canteens and coffee rooms.” 86,2% of the respondents agreed (fully + somewhat) with that claim and 6,9 % disagreed (somewhat). The fifth claim stated: “It should be possible for all employees to send images to the Futures Window.” 89,7% of the respondents agreed and no one disagreed. Obviously, the Futures Windows concept could have a demand for further use in organizations. In this case, the employees of the organization should be involved in the process by giving them a chance to participate in creating the content to the Windows.

The sixth claim (“The Futures Window gave me new ideas about the possibilities of the technology area that I am working with in the future”) divided opinions the most. 27,6 % of the respondents disagreed (fully + somewhat) and 55,2% agreed (somewhat and fully). Using employees in content providing for the Futures Window might be a solution for getting more ideas from the technology perspective. In this pilot, the material was mainly produced by a person (the author) who does not have that deep knowledge in futures technologies.

The positive attitude to the Futures Window was also seen in the end of the questionnaire where the respondents had the opportunity to write freely comments about the Futures Window. The comments were mainly positive, such as “really good idea,” “OK,” “an interesting method,” and “funny and inspiring.” In addition to writing opinions of the Futures Window, the respondents also started to think of the possibilities to use the Window and further applications.

3.3.2 Reactions to the images

The respondents were also asked to mark which images stuck in their mind best. As a memory aid, the respondents had posters of all the images next to the computer. It appears that the images that stuck in their mind were the most “radical” ones. Also, images that had something “cute” in them raised the interest of people. Examples of radical images in the Window were: eye jewellery (5 notices), the operation to put magnetic implants into fingertips (4 notices), a lady with a corset piercing (5 notices), a mouse with a human ear growing from its back (5 notices). Cute pictures that captured attention were Nabaztag Internet Rabbit (4 notices) and Lifestyle cats (4 notices). Other pictures got less than 3 notices and some of them did not get any.

The respondents were also asked to tick, why some image got their attention. They had approximately eight alternatives from which to choose the one which best describes why the image stuck in their mind. The table 2. summarizes the times each reason was mentioned in the study.

Table 2. Reasons why images stuck into the respondents' mind

Reason	Number of times mentioned by respondents
It irritated me	7
It was a new thing to me	10
It amazed me	5
It made me laugh	8
It raised my interest	16
It raised positive feelings	24
It raised negative feelings	18
Some other reason	11

It is possible to see from the table that the images which raised positive feelings (24 mentions) stuck in the respondents' minds best. Similarly, the images that raised negative feelings (18 mentions) also stuck in people's mind. There should be at least something in the image that is raising the interest (16 mentions) of the viewer. It is interesting to notice that the newness of the issue (10 notions) as such was not enough to make an image stick in people's minds.

3.4. Results of the Pilot 2

Pilot 2 of the Futures Window was accomplished in DigiHouse at VTT in one working week (5 days) between 26th February and 2nd March, 2007. The Future Window slide show was projected to a big glass box type of screen in a lobby of DigiHouse at least nine hours a day (8.00–17.00). See image 5.



Image 5. The Futures Window in DigiHouse at VTT. In the figure, there is an image of the starting page of the show.

The slide show of visual weak signals was the same as in Pilot 1. The questionnaire was sent as a link via email to the people working in the DigiHouse the next week. About 280 people received the email. This questionnaire slightly differed from the questionnaire of Pilot 1. For example, the first question in this case was: *Did you see the Futures Window at DigiHouse lobby in week 9?* If the answer to that was yes, more questions were provided to the respondent. If the answer was no, the respondent was only asked to leave his/her email address in case further information was needed.

The respondents who saw the Futures Window were asked to answer questions such as did she/he stop to see the images, how long did she/he watch the images, what images she/he remembers, his/her opinions about the Futures Window, and some background information.

All in all 39 people answered the questions. 64,1% of them reported having seen the Futures Window. 64,0% of those who saw the Futures Window stopped to watch the show. Reasons for passing the show by were enquired from the 36,0% (altogether 9 people) who did not stop to see the show at all. 33,3% of them said they were in hurry, 11,1% (one person) commented that she/he was not interested in it and 55,6% (5 people) commented that they had some other reason for not stopping, such as not knowing what the show was about, thinking that it is not anything important and thinking that the place for the show was inappropriate. One respondent pointed out that the area was not suitable for standing around for “nothing”, since it would give the customers a wrong impression of VTT’s employees.

Half (50,0%) of the 16 people who stopped to see the Futures Window stayed only for a moment and saw 1–5 images, while 31,3% stayed and watched the entire show.

In the questionnaire, people were given the opportunity to comment on the images that they remembered, without further hints about the images. On the basis of the written comments on the images, the image that stuck in people’s mind most was an image of a lady with a corset piercing (4/5 respondents; note that here the group of respondents is limited to the 5 respondents who saw the whole Futures Window show). Also, a tattooed girl with horn type of implants in her head drew the respondents’ attention (3/5 respondents). Individual respondents remembered other images, too. It was possible to see from the descriptions of the images that the way some of the images were understood differed from the genuine purpose of the image. This was by no means a negative thing, however, as the researcher wished that to happen, because misunderstanding the images is triggering new ways of thinking and breaking mental models.

In the next question, the respondents were helped to remember the images by giving their names and numbers. Also, a link to the Futures Window show was given in the questionnaire, which made it possible for the respondents to have a look at the images again. Here, the respondents were asked which images they remember seeing in the

Futures Window and why did they remember them. An image of new beetle art car was remembered best (9 respondents out of 15), the eye jewellery and Nabaztag were remembered the second best (7/15), and the third most popular image to remain in the respondents' minds was the lady with the corset piercing (6/15). However the results should not be taken as absolute, because not all respondents followed the whole show. The respondents added the following adjectives to the "why" question ("Why these images stuck in your mind?"): weird, interesting, new, good idea, irritating, ironic, unusual, illustrative, and familiar.

In this pilot, the claims of the Futures Window were presented to the respondents as in Pilot 1. However, this time some claims were added and one erased because of its complexity which made it difficult to understand. The claims of Pilot 2 are listed below (italicized claims are similar to claims in Pilot 1).

1. *Futures Window gave me new ideas about the future.*
2. *The Futures Window could be useful activator of futures thinking in my own work.*
3. *In my opinion, it is important to think in a futures oriented way in my work.*
4. *At VTT (or other organization, if I am outside of VTT) there could be Futures Windows for example in canteens and coffee rooms.*
5. *It should be possible for all employees to send images to the Futures Window.*
6. The Futures Window could be taken advantage of also in project works, for example in seminars or brain storming sessions.
7. The Futures Window adds the creativity and innovativeness of the working environment
8. The Futures Window could be shown again with new images in the lobby of DigiHouse for example once a year
9. I have told about the Futures Window or discussed about it with my colleagues or friends.

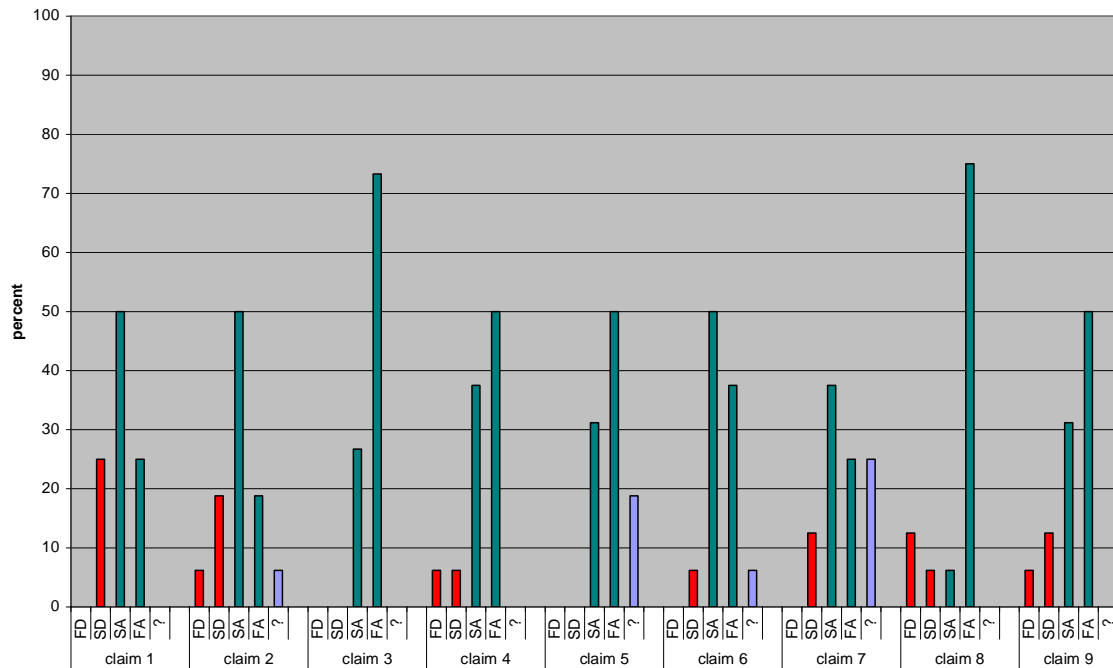


Figure 6. Pilot 2, claims and answers to them.

The results from the claims are shown in Figure 6. In the figure, the y-axis marks the percentage of respondents. In the x-axis, there are all the claims (1–9) and different possibilities to answer them, marked by following codes: FD= fully disagree, SD= somewhat disagree, SA= somewhat agree, FA= fully agree, and ? = cannot say. The results of these claims in Pilot 2 resemble the results of Pilot 1. Again, the feeling about the Futures Window was positive. Claim 1 (“The Futures Window gave me new ideas according to the future”) was agreed (somewhat + fully) by 75,0% of the respondents. Claim 2 (“The Futures Window could be useful activator of futures thinking in my own work”) was agreed also by a majority of 68,8%. All respondents thought their work requires futures thinking (claim 3). The Futures Window’s applicability to organizational environment was considered good by the respondents, of whom 87,5% agreed with claim 4 (“At VTT [or other organization, if I am outside of VTT] there could be Futures Windows for example in canteens and coffee rooms”). Majority of the respondents (81,2%) agreed with claim 5, which stated that the employees should also have a possibility to send their images to the Futures Window.

Claims 6–9 were not presented in Pilot 1 and for Pilot 2 they were added by the request VTT’s representative. Claim 6 estimated what the respondents thought of the idea of using the Futures Window for other purposes, for instance, as an assisting method for project work, such as seminars or brainstorming. The majority of the respondents (87,5%) agreed with the claim. When asking opinions about whether the Futures Window enhances creativity and innovativeness, 62,5% agreed, 25,0% did not know and 12,5% disagreed. Also, the degree of interest towards the Futures Window was asked in claim 8, in the form of whether the Futures Window could be displayed with new images in DigiHouse for example once a year. 81,2% agreed with the claim. Claim 9 enquired whether the respondents had talked about the Futures Window to other people. It appeared that 81,2% agreed that they had discussed the Futures Window with their colleague and/or friends.

It was also possible to add comments and suggestions for developing the Futures Window in the questionnaire. Some of the comments concerned the place where the Futures Window was located, which in Pilot 2 appeared not to be optimal for the purpose. A more peaceful place was wished for in order to enable one to have a better look at the Futures Window. The lobby in Pilot 2 was not considered to be a good place, because people usually just pass it by quickly. Some respondents criticized the quality of the images, too. They were considered to be too blurry, visually not so appealing (too Power Point-like) and the meaning of the images did not come clear to one respondent because there was too little information in it. However, the Futures Window also received positive feedback. It was considered a good idea and more of these types of pilots were asked for. Applying the same technique to other internal communication of VTT was suggested also. One respondent suggested having the same images on the VTT Intranet.

4. Discussion

The Futures Window, a new concept in which visual weak signals are shown to the employees in an organization to trigger their futures thinking, was tested at VTT in two

pilots during the end of the year 2006 and the beginning of the year 2007. The feedback received from the survey asking people's opinions about the Futures Window was generally very positive in both of the pilots, as revealed by the statistics of the answers and the respondents' written comments. The majority of the respondents thought that the Futures Window triggered futures thinking. The majority the respondents also agreed with the idea that there could be Futures Windows in cafeterias or canteens at VTT. The majority of the respondents also wanted the employees to be able to participate in creating the contents of the Window by sending images to the Futures Window.

The images which triggered people's attention were clearly the ones that had something shocking or radical in them. Especially, the images with manipulations of the human being were of interest. Also, something that could be considered as cute (Nabaztag, a cat) were also remembered better than other images. In summary, the images that invoked feelings (positive or negative) were the ones that received attention.

Pilot 2 revealed that the environment in which the Futures Window is displayed is essential, as it turned out that the lobby was not appreciated. A more convenient milieu for experimenting this kind of method would be one where it would be possible to stand still or sit watching and discussing the images with other people. A cafeteria or a canteen might work better for the Futures Window, because there the situation (lunch or a coffee break) would provide a good setting for unhurried discussion.

On the basis of the results of the experiments of the Futures Window at VTT, the method seems to be recommendable to other organizations too for triggering futures thinking. If one is not willing to use it in public spaces, it is also possible to use it elsewhere. For example, it might be a useful device for enhancing futures-oriented thinking in seminars or brainstorming. In whichever way the Window is used, it is important to involve the employees in the method by giving them a chance to send images to it.

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