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Master Thesis in Science Communication

Petter Börjesson

Supervisor: Lars Broman

Local supervisor: Elisabet Eronn

Public Authorities' Use of Exhibition

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Contents

Abstract

This thesis studies the use of exhibitions by public authorities and the possibilities of making exhibits out of authority topics. The theme is public authorities and their work of informing the public. The methods used are a literature study, survey to 37 museums and science centres, interview with 14 different public authorities, Internet search, and the planning of 14 exhibits with a public authority theme. The literature study states that learning is an active process of using senses, constructing knowledge and how exhibitions can stimulate learning. The research gives that informing the public is a natural part of the authority's work and they use all sorts of media communications. Public authorities can use exhibitions as a means to inform the public about their work and there are available examples. In the discussion it is stated that the use of exhibitions could be increased and used in settings outside the museum. Small exhibits could highlight a topic just the way a brochure does.

Keywords

Keywords: public authority, science centre, interactive exhibit, information, principle of public access

1 Introduction

The theme of this thesis is public authorities and their work with information. The theme is chosen because of the author's experience of working both with and for public authorities. The experience is combined with previous year of studies in communicating science at Högskolan Dalarna and the question that is studied in this thesis is: "Can public authorities use interactive exhibitions for their information?"

The work will also be interesting as no previous text directly covering the same topic was found while searching for background material. That was searching internet and article database of Högskolan Dalarna with the combination of "public authority" and "exhibition"

The experience of the author is that information is an important part of the daily by public authorities. The feeling at a public authority can sometimes be frustrated when all the people than calls ask the same things and equally frustrating that they do not ask about things that they ought to ask about. The experience comes from among other things working with energy guidance at a public company.

The questions will be answered by studying the work of public authorities and the planning of exhibits. That is studies of the work with information in general given from the authority to the public and study the existing use of exhibitions as a mean to inform the public. Figure 1 displays a graphic layout of the thesis. Much of the work has been done during a period of fieldwork at Framtidsmuseet, a science centre in Borlänge Dalarna.

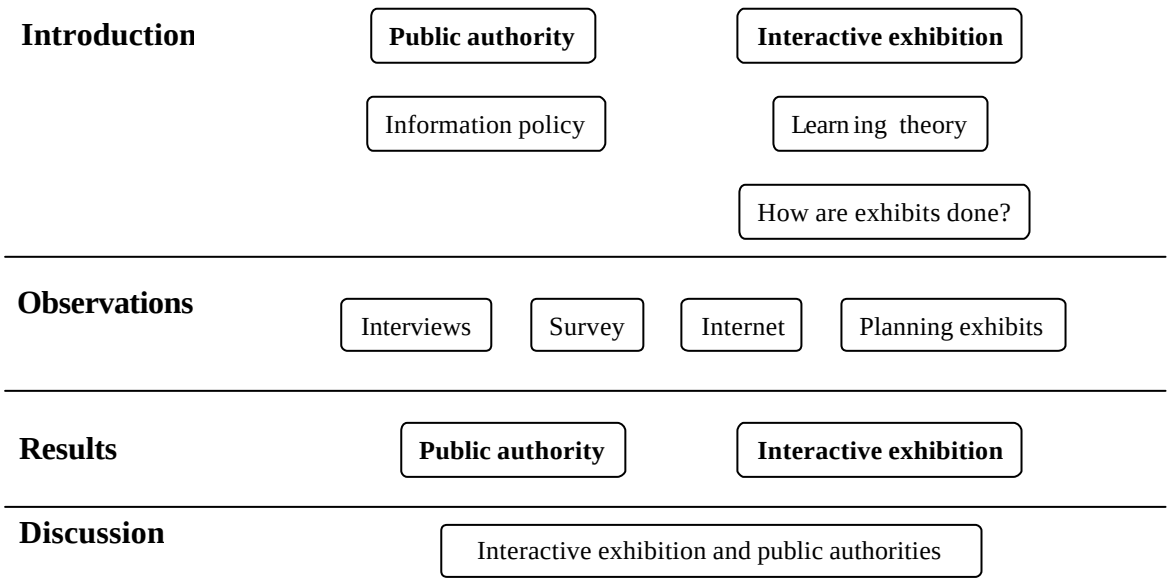


Figure 1: Graphics presentation of the layout of the thesis.

1.1 Public authorities

The definition of public authority used in this text is:

Any institute, organisation, establishment, company, or similar that is managed or owned by the people. People in this case is the nation, county or municipal.

It is a vide definition and the key issue common for the authorities is that they have information and they are obliged to inform the public.

The introduction leaves the learning theory and looks at public authorities in order to state the fact that public authorities are obliged to inform the public.

So far we have seen that we can learn in a science centre or museum settings. The next step is to see if there is a need from the public authorities to inform the public; to study public authorities and their work with information. Public authorities work under the Principle of Public Access in Sweden (www.sweden.gov.se 2004) this means that much of the work of a public authority must be available to the public:

> *"The principle of public access means that the general public and the mass media newspapers, radio and television are to be guaranteed an unimpeded view of activities pursued by the government and local authorities."*

The authority in e.g. documents like information policy can complement the principle of public access. That can include that information should not only be available but also be available the most convenient way. Some of the organisations interviewed in this thesis have published their information policy on the internet. These documents give a hint that the work with information is important. At the home page of Borlänge municipality (www.borlange.se 2004) publish their policy of information:

> *"… The activity of Borlänge municipality is to make available services with a high level of quality and it is the best for the people of Borlänge that should guide the activity. In order to establish trust in our action among our employee, companies and the public the work with information is of outmost importance and shall therefore always be considered in the planning of our work…(translated by author of thesis)"*

Another authority, Banverket the authority responsible for rail traffic in Sweden, interviewed in the thesis has a similar approach to information, (www.banveket.se 2004), in their policy of information it is possible to read:

> *"…The work with information is a part of the regular work of Banverket. It is important that the aspect of information always is taken into consideration before decisions… Banverket should be seen as a clear and accessible organisation…(translated by author of thesis)"*

It is obvious that public authorities are aware of the importance of giving information to the public. These documents of policy are not just empty words but are set in to action and influence the daily work of public authorities. The important arguments from this heading is:

- authorities have to inform the public, principle of public access
- authorities want to inform, information policy

1.2 Learning theory

Next in the introduction some words about learning theory. This is to make a base for stating that interactive exhibits can be educational.

The base for this thesis is the theory of constructivism. According to definition (www.wordiq.com), constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge There is an objective world outside our mind and as individuals construct knowledge and meaning as we learn. Hein (1991) have outlined some principles of learning in the theory of constructivism:

> *- Learning is an active process in which the learner uses sensory input and constructs meaning out of it. Learning is not the passive acceptance of knowledge that exists "out there" but that learning involves the learner engaging with the world.*
>
> *- People learn to learn as they learn: learning consists both of constructing meaning and of constructing systems of meaning. For example, if we learn the chronology of dates of a series of historical events, we are simultaneously learning the meaning of a chronology. Each meaning we construct makes us better able to give meaning to other sensations that can fit a similar pattern.*
>
> *- One needs knowledge to learn: it is not possible to assimilate new knowledge without having some structure developed from previous knowledge to build on. The more we know, the more we can learn. Therefore, any effort to teach must be connected to the state of the learner must provide a path into the subject for the learner based on that learner's previous knowledge.*
>
> *- Learning is contextual: we do not learn isolated facts and theories in some abstract ethereal land of the mind separate from the rest of our lives: we learn in relationship to what else we know, what we believe, our prejudices and our fears*
>
> *- Learning is a social activity: our learning is intimately associated with our connection with other human beings, our teachers, our peers, our family as well as casual acquaintances.*

However, the knowledge constructed is nothing that lasts forever. If we look at an aspect of cognition, Clancey (1996) describes human knowledge:

> *"The theory of situated cognition claims that human knowledge is dynamically reconfigured…during transactions in an environment, within the person's conception of context as a social actor. Situated cognition suggests that human knowledge does not consist of pattern descriptions that are encoded in the brain (i.e., verbally modelled in the brain like frames or rules in a knowledge base)."*

Clancey continues that situated cognition stresses what people conceive and how this relates to their physical and social coordination of activities and actions. In this sense, a person's knowledge, ways of categorising and coordinating behaviour, is dynamically reconfigured and cannot be seen as things existing independently of an interaction or environment.

One of the key issues is that learning is an active process; it is stated in the first principles by Hien and also indirectly stated by the use of words in the other principles. For example *"constructing systems"*, *"to build on"*, *"connected"*, and *"intimately connected"* are all words describing an action that is taking place within a person, that learning is an active process. The theory also states that the construction of meaning and learning is taking place in the head of the individuals, Clancey (1996) describes it as people are the "carriers" of knowledge.

People are different in ways of learning and constructing knowledge. Howard Gardner (1987) has constructed a theory of multiple intelligences to describe these differences. In the theory, Gardner argues that human beings have evolved to be able to carry out at least seven separate forms of analysis:

- *Logical-Mathematical Intelligence consists of the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking.*
- *Linguistic Intelligence involves having a mastery of language. This intelligence includes the ability to effectively manipulate language to express oneself. It also allows one to use language as a means to remember information.*
- *Spatial Intelligence gives one the ability to manipulate and create mental images in order to solve problems. This intelligence is not limited to visual domains; spatial intelligence is also formed in blind children.*
- *Musical Intelligence encompasses the capability to recognize and compose musical pitches, tones, and rhythms. (Auditory functions are required for a person to develop this intelligence in relation to pitch and tone, but it is not needed for the knowledge of rhythm.)*
- *Bodily-Kinaesthetic Intelligence--is the ability to use one's mental abilities to coordinate one's own bodily movements.*
- *The Personal Intelligences, intrapersonal intelligence, the ability to understand one's own feelings and motivations.*
- *The Personal Intelligences, interpersonal feelings and intentions of others.*

Gardner gives us a way to sort the process in different areas that is helpful when we want to teach. As we all have different capabilities in each "intelligence", we learn in different ways. Gardner describes it as *"…multiple windows leading into the same room."* A way to teach as many as possible in a group would be teaching the same thing in different ways. That is to display the facts to be learned with different intelligences, spoken, written, with the body and so on.

This heading in the introduction gives the theoretical basis for the use of interactive exhibits using the arguments that:

- learning is an active process, people construct their own knowledge
- several intelligences, people analyse the surroundings differently

1.3 Informal learning in science centre

This part of the introduction reviews learning in a science centre it is done to strengthen the arguments for the educational benefits of exhibits and exhibitions.

The heading "Informal learning…" is chosen to describe the learning taking place in a museum or science centre. Learning in a museum is often categorised as informal learning, (Heimlich et al. 1996), because the learning is voluntary, the learners have the objectives and motivation for learning with the means controlled by the educator or organisation.

Before looking at the learning in the informal setting, some words about "informal learning". Colley Hodkinson, and Malcolm (2003) has done a thorough analysis of the concepts of formal and informal learning. They analysed different attempts to classify the differences between formal, non-formal and informal learning and identified ten sets of definitions. There are frequent claims about the non-formal/informal learning as the powers of students and teachers are equal. Their study showed that

> *"…all learning situations contain significant inequalities of power. Any form of learning can be both voluntary and oppressive, often at the same time. This leads us to argue that power differentials and issues of learner inequality need to be analysed and taken seriously in all contexts, not taken for granted.*
>
> *…Nor are we arguing that adjectives such as formal or informal should never be used to describe learning. Rather, their uses should be carefully developed and explained for particular purposes, and authors should make clear how they are using this term -- and why."*

So guided by the recommendation this thesis uses the definition of informal learning that Hein (1998) describes. Paraphrasing the definition: "informal learning is reserved for a description of settings without a formal curriculum. There is no curriculum that progress from lower to higher levels, it does usually not require attendance and there are no tests to certify the knowledge."

Now back to describing museums and science centres and the learning that takes place in such settings.

The informal settings described in this thesis comprise science centres and museums. According to definition of The Swedish National Encyclopedia (www.ne.se 2004) a science centre is a centre for activities and exhibitions with the aim to popularise natural science and technology, the exhibits are often interactive. A museum can do the same but according to Burcaw (1997), a museum is a non-profit institution that keep, study and displays collections of objects of cultural or scientific value, for the good of the community as a whole.

Semper (1999) describes science museums that can also describe the significance of the setting in a science centre as:

> *"A science museum is created by its contents and the activities relating to them. These contents may be historical artefacts, such as a steam engine, or exhibits of natural phenomena, scientific ideas or technological inventions. A serious and exciting learning environment where the relationships between one exhibit and the next, the visitors and the space as a whole are important. This location-and-object specific attribute sets museums apart from other communications media such as television, books and periodicals."*

Semper goes on to say that museums should present natural phenomena, technological innovations and scientific ideas in ways that prompt visitors to ask themselves questions and reinforce their own learning. Exhibits are designed to isolate a piece of nature or a concept from the complex world so that a visitor has a chance to poke at, fiddle with, and thereby begin to comprehend it. Museums and science centres also sponsor programs and activities designed to relate to particular audiences. Museums and science centres are not part of formal educational. They can have science-related activities that are specially made for groups that are underrepresented in professional science. An example of this is the project "simply technology" at Framtidsmuseet (Eronn personal communication) where women immigrants where introduced to technology. The women were given a guided tour at the museum and made some technical experiments during a lecture.

However, if we look at a museum, do people come there to learn? Heimlich (1996) say that not all visitors come for learning. There are differences between different researches in how many of the visitors that visit a museum with learning as a purpose. However, no one saw more than half of the numbers of visitors came to learn. Studies such as this suggest there are many visitors attending for primarily social reasons and that learning may need to be constructed in a manner that supports the social activity.

Learning is not just for those who attend with the intent of learning. Visitor studies of adults show that there is not big difference of the immediate learning between those who intend to learn and those who did not.

But how can we know that people learn in a museum? Semper (1999) writes that research on learning in museums is hard to do because of the episodic nature of the interaction, the divergent backgrounds of the visitors, the free-form nature of a museum visit itself and the non-verbal character of the experiences that museums particularly excel in providing. However, it is also just those features of the museum experience that make the question of learning in museums interesting and worthy of study.

The research is even harder because it takes time to learn. Hein (1991) describes it as if you reflect on anything you have learned; you soon realize that it is the product of repeated exposure and thought. Even, or especially, moments of profound insight, can be traced back to longer periods of preparation.

Instead of looking at the specific things that are learned at a museum, there is a possibility to study the behaviour of the visitor. The behaviour reveals some indicators of learning. Griffin (1999) writes in a collection of articles about indicators of learning in a museum setting. Griffin finds a similarity in views from many fields and authors on the conditions that are favourable for learning and the behaviours that reflect the presence of these conditions. Griffin has made a synthesis of the literature that led to the development of a set of indicators of engagement in learning which include both individual and social behaviours. The set of indicators were applied to learning within a museum environment, each item has been expanded to create a set of specific indicators of engagement in learning processes within a museum, shown in Table 1.

Table 1 Indicators of student engagement in learning process in a museum setting. (Griffin 1999)

Behaviour indicative of favourable conditions for learning	**Indicators for the behaviour**
Showing responsibility for and initiating their own learning:	• know what they want to look for/ making choices; • writing/drawing/taking photos by choice; • talking to themselves; • deciding where and when to move.
Actively involved in learning:	• standing and looking/reading; • exhibiting interest by engaging with an exhibit; • absorbed, close, concentrated examination; • persevering with a task e.g. drawing.
Purposefully manipulating and playing with objects and ideas:	• handling exhibits with care and interest; • purposefully 'playing' with exhibit elements/using hands-on exhibits as intended.
Making links and transferring ideas and skills:	• comparing exhibits; • referring to their prepared questions; • comparing/referring to previous knowledge/experiences.
Sharing learning with peers and experts:	• talking and pointing; • pulling others to show them something; • willingness to be pulled to see others' interests; • group members talking and listening; • asking each other questions; • talking to adults / experts (eg teacher or museum staff).
Showing confidence in personal learning abilities:	• asking questions of displays; • explaining to peers; • reading to peers; • comparing information with another source.
Responding to new information or evidence:	• evidence of changing views; • evidence of discovering new ideas.

Griffin stresses though that these indicators gives no indication of what, if anything, is being learned, only that a process is being used which indicates that the student may be learning. Such a tool nevertheless has potential for gauging learning, particularly when used in conjunction with measures of learning outcomes.

Barriault (1999) has a similar approach to learning in a museum, defining behaviour that indicates learning and adds a level of learning to the behaviour. Barriault divides the behaviour into eight discrete learning behaviours that occur as part of a visitor's interaction with an exhibit and that these behaviours can be grouped further into three categories that reflect increased involvement and depth of the learning experience, Table 2.

Table 2 Indicators of learning behaviour and depth of learning (Barriault 1999)

Learning Behaviour	**Depth of Learning**
Doing the activity Spending time watching others engaging in the activity Taking information or assistance offered by staff or other visitors	Initiation behaviours
Repeating the activity Expressing positive emotional response in reaction to engaging in activity	Transition behaviours
Referring to past experiences while engaging in activity Seeking and sharing information Engaged and Involved: testing variables, making comparisons, using information gained from activity	Breakthrough behaviours

Barriault discusses the behaviours described in Table 2 and the depth of learning. In the "Initiation behaviours", the visitors are taking the first steps towards a meaningful learning experience. Even though visitors are not yet completely involved in the experience, they are gaining some level of information through the experience that in turn, could lead to more learning. "Initiation behaviours" enable them to 'test the waters' with minimum personal risk and provide an entry point into further learning opportunities offered by the exhibit. As Hein (1991) describes above we learn in relationship to what we already know and this first step is to see what we already know about the exhibit. Barriault goes on to say that if the exhibit stimulates to repeating the activity that is an indicator of "transition behaviour". That it is an indication that a level of comfort has been achieved and that visitors are comfortable. Regardless of whether the activity is repeated in order to better understand it, to master the functions or to observe different outcomes, the visitor have a more committed and motivated learning behaviour. This can be referred to Gardner's (1987) theories of multiple intelligences, people have different ways of analysing the surroundings and interacting with an exhibit as it pleases using the most convenient intelligence, is a step towards new knowledge.

Barriault say that an exhibit can be even more engaging and by that indicating "breakthrough behaviour", with the visitor for example seeks and share information. Each of these behaviours acknowledges the relevance of the activity, and the learning gained from the activity, to the individual's everyday life. The learning behaviours in this category, "breakthrough behaviour", reflect a commitment of the visitor to gain information and knowledge and to further exploring the ideas being presented. By "Referring to past experiences", "Seeking and Sharing Information" and becoming "Engaged and Involved", a visitor's interaction with an exhibit becomes a meaningful learning experience which takes full advantage of the exhibit's learning opportunities. A personal level of comfort has been established that encourages a free flow of ideas and exchanges, and enables real learning to occur. This last step can be seen as a description of Hein's (1991) and Clancy's (1996) theories of learning as an active process of using sensory input dynamically reconfigure constructed knowledge.

This heading adds to the argumentation that:

- a museum/science centre inspires the visitor to be active
- inspiration can be given by interactive exhibits
- it is possibly to study a behaviour that indicates learning

This far we have learning is an active process and exhibits can stimulate activities. It is also possible to study a learning behaviour at science centres and museums. By this it is possible to state that exhibits have educational features and can be a efficient tool in order to teach or give information.

1.4 Exhibitions

As we now have arguments for de educational value of exhibits and authorities are obliged to inform the public there is time for a closer look at the making of exhibits. The theoretical background of exhibit making is needed when exhibits are planned within this study.

An exhibition is according to definition by Burcaw (1997) an assemblage of objects which the visitor move from unit to unit designed to be meaningful to the visitor. The exhibition consists usually of exhibits, which is the presentation of an idea with the attempt to educate the viewer.

Hein (1998) translates the theory of constructivism to the making of exhibitions. Hein defines three basic questions:

- *How is the situation designed to make it accessible – physically, socially and intellectually - to the visitor?*
- *How is learning itself made active?*
- *What is done to acknowledge that knowledge is constructed in the mind of the learner?*

Hein continues discussing the questions by saying that an exhibition is accessible if there is something familiar to the visitor. It is fundamental for a learner to be able to associate an educational situation with something already known.

> *People learn as they are stretched beyond their own knowledge but only within a range that is within their grasp given what knowledge and skills they bring to a task.* (Hein 1991)

Not only the exhibition that makes a difference, the architecture and design make a physical impact on the visitor inviting or rejecting depending on the style. The subject of the exhibition, the words and pictures chosen to describe, the level of needed prior knowledge all make social and intellectual impact on the visitor. It is possible to see Gardner's idea of multiple intelligences when Hein discusses ways of making the learning active. He says that it is important for exhibits to provide different kinds of entry points, using various sensory modes, different kinds of stimuli, to attract a wide range of learners. The idea is that learners need to be active; we need to engage the learner in doing something, in hands-on involvement, in participatory exhibits and programs and important is that the actions developed for the audience engage the mind as well as the hand. The exhibits must provide something to think about as well as something to touch. There is also the social aspect; the exhibits should encourage visitors to discuss, to share, to find out together.

Robert J Semper (1999) has looked closer on the design of exhibitions in order to be as educational as possible.

> *There are at least four rich themes in education theory that especially relate to the learning activities found in museums. These comprise curiosity or intrinsically motivated learning in education, multiple modes of learning, play and exploration in the learning processes, and the existence of self-developed world views and models among people who learn science.*

Semper describes an important quality of an exhibit; the user of an exhibit, not the designer, should be in control of the learning activity. That is the design should not dictate the behaviour of the user so that any kind of independent learning is impossible. The visitor should have the possibility to control the interaction and learning of the exhibit.

Semper continues with that it is important that there are possibilities to play and explore. Play is a serious matter in science education. It leads to the development of skills in observation, experimentation and the testing of ideas, and it provides an opportunity to independently discover order in nature. Playing develops creativity and learning skills, the manipulation of objects, helps the brain think creatively about problems. By providing a garden of rich and relatively unrestricted examples of natural phenomena and technological props, a museum can create a playground of science that helps develop the fundamental experiences necessary for later learning.

Among all the exhibitions done in museums and science centres, Gammon (1999) has summarised experience of the making of interactive exhibitions from about 100 museums and science centres. Much of the success of an exhibition lies upon visitors' prior knowledge and understanding of the specific content of each exhibit. It is important that the exhibit developer has taken account of this. Gammon has put the experience under eight headings that are commented closer below

- Visitors' Understanding of the Exhibit
- Design of Interface Controls
- Positioning of Exhibits
- Visitors' Interpretation of the Exhibit Content
- Labels and Instructions
- How Visitors Behave
- Planning Exhibit Content
- Visitors do Weird Things in Museums

Visitors' understanding of the exhibit

Gammon describes feedback as the single most important feature of interactive design. Without effective feedback from the exhibit, visitors have little chance of working out what to do or finding out what the exhibit is trying to show them. The first few seconds of interaction with an exhibit are crucial. An exhibit must respond to the visitor's input within the first few seconds. This initial 'hand-shake' is vital to a successful interaction between visitor and exhibit. A good rule of thumb is that an exhibit must respond in some way within 1-2 seconds even if it is only a message saying "Wait a moment." Anything less and visitors may assume the exhibit is broken and/or start using it inappropriately.

Design of interface controls

Visitors need to understand what each control does and which control causes which effect. One effect, if this is not the case, is according to Gammon that visitors often assume that they are causing the exhibit to respond even when they are not. If there are multiple controls on an exhibit visitors often cannot tell which control is operative. This leads to enormous confusion and frustration as the visitor cannot make sense of what the exhibit is doing. Make the link between operating parts and controls clearly visible. Visitors then can build up a mental model of how the exhibit works. Visitors will try their very best to do things in the wrong order. Clearly differentiate the exhibit structure from the controls. Beware of features that look like controls but do not operate anything. Many visitors will assume these are controls and try to use them, as do lights that look like push buttons. Handles should operate when turned either clockwise or anti-clockwise. Visitors will often choose the wrong direction and then not understand why nothing is happening.

Positioning of exhibits

Items on the ceiling must be viewed from a long distance so visitors do not have to raise their heads more than a few degrees to see them. Because Gammon have found the experience that visitors do not look up. Interactivities that involve visitors communicating with other people at a distance need to be designed so that both visitors can see whether anyone is at the other end of the exhibit. Otherwise, they have no way of knowing what and when to communicate.

Visitors' interpretation of the exhibit

Visitors do tend to take things very literally. Although metaphors are a popular method of conveying complex abstract information, they should be used cautiously. Both children and adults tend to take an incredibly literal interpretation of everything they seen in exhibitions. But then again exhibit developers can be obsessively literal as well.

There are several examples of models to show day and night on earth. Less suitable is to have the earth with a lamp inside and half the lamp covered representing the dark night. It might look correct with half the earth with light and half in the dark. But completely wrong to let the earth have the light coming from within. (Lars Broman Personal conversation 2004)

Labels and instructions

Visitors read some labels but only if they are highly motivated. Gammon have found this experience and you might as well find it if you think about your own behaviour, he continues, if visitors possibly can, they will try to work things out for themselves. This means that they will often ignore lengthy instructions and instead do what the design of the exhibit appears to tell them to do. The instructions should merely be a back-up system. Anything more than about 20 words will be ignored. Nonetheless, controls and objects do need to be labelled so that visitors can see what they are supposed to do or be. A much-preferred method of finding out how to use an interactive exhibit, rather than reading the label, is to watch someone else it and then copy them. This is fine if the previous person was using the exhibit correctly but this is often not the case. Diagrams illustrating how the exhibit is to be operated are extremely effective method of conveying instruction. A diagram or cartoon is more likely to be looked at than a block of text and pictures can quickly convey large amounts of information. Labels must be placed as close as possible to the exhibit and must be in-line-of-sight as the visitor operates the controls. The label should never be more than 0.5 metres from the exhibit and if possible physically attached to it. The title is the one piece of text that is most likely to be read. Ideally, the title should provide visitors with a thumbnail sketch of what the exhibit is about and what they will do.

How visitors behave

Young children experience particular problems, Gammon states. One of the main problems we have encountered with exhibits aimed at young children is to encourage the accompanying adults to join in with the activity to an appropriate degree. Adults tend to either, step back and provide too little help, or completely take over the whole activity and not let the children do anything. Exhibits aimed at very young visitors still need to be labelled so that accompanying adults know how to help their children. Text should be written bearing in mind that it is likely to be read aloud or quickly paraphrased by the accompanying adults for their children. Visitors are attracted to things that have at least some of the following characteristics: move, make a pleasant noise, are brightly coloured and well lit, have a complex shape, an intrinsic surface, are famous, nostalgic, have been sectioned, are unusual quirky or amusing, look like they can be manipulated and operated, that can be touched, have people crowded around them.

Planning exhibit content

Be clear about what your exhibit is trying to achieve, planning is an important part in the making of an exhibition according to Gammon. Problems often arise early in the development of an exhibit if there is doubt, confusion, or obfuscation about what the exhibit is trying to do.

Visitors do Weird Things in Museums

As a last word in the list of recommendations Gammon say, do not make assumptions - visitors do weird things in museums. Visitors come to the Museum expecting to behave in a particular way and to do particular things. The only way to reduce the chances of making a bad interactive is to do as much prototype testing as possible.

Although the great amount of characteristics of a successful exhibits and exhibition described above there is something more to say about a good exhibition. Sandifier (2003) has described some characteristics of an exhibit/exhibition that contribute to the visitors' attention and motivation to interact. The characteristics are:

Technologically novelty

- *The exhibit contains visible state-of-the-art devises*
- *The exhibit though technology, illustrates phenomena hard for the visitor to conduct on their own*

Open-ended

- *The exhibit allows for the achievement of multiple visitor set goals*

User-centred

- *The outcome of the exhibit manipulation involved the visitor's body or voice*

Stimulates the senses

- *The exhibit emits sounds when used*
- *The exhibit has one or more viable parts that move when the exhibit is in use*
- *The exhibit has lights that blink of flash when the exhibit is in use*

Therefore, an exhibit should have certain characteristics that appeal to the human nature of motivation and learning skills, preferably appealing to as many of Gardner's intelligences as possible. It is also important to place the visitor in the centre; the visitor shall be active and learn from the exhibit. Sandifier (2003) describes it as "open-ended" and "user-centred". Semper (1999) in his text writes that the user not the designer should be in control of the activity. Moreover, Gammon (1999) writing about visitors' behaviour say that visitors try their best to do things the "wrong" way and stresses that people do weird things in museums. By this gammon indicates that visitor acts as if the exhibit is designed for he or she to be in centre what ever way the exhibit is designed. The ultimate exhibit meet up with a long list of design properties all together makes the exhibit easy and fun to use, at the same time educational. To combine all of these properties into one exhibit is a challenge to the constructor. Above this, the visitors all have different background that affects the educational outcome of the exhibit. In the view of the experience described above future production can benefit a lot by the use of prior experience.

As defined earlier science centres and museums usually displays natural science and technology and hence exhibitions have been done covering those topics. Still there is nothing that says that it is impossible to make an exhibition out of any subject. The theories and practical experience describe nothing topic-specific. This thesis test the theory that is possible to use the knowledge of good exhibit design and make exhibitions out of any topic. The text below will give examples of several exhibits from a diverse set of topics taken from public authorities. For the thesis the important arguments are

- exhibits do not require a specific topic
- a good exhibit has the right characteristics

1.5 Summarize of introduction

This introduction has looked at learning through exhibits and the work of information by public authorities. The important theoretical backgrounds found in the literature review are:

- learning is an active process, people construct their own knowledge
- several intelligences, people analyse the surroundings differently
- a museum/science centre inspires the visitor to be active using different senses
- inspiration can be given by interactive exhibits
- it is possibly to study a behaviour that indicates learning
- authorities have to inform the public, principle of public access
- authorities want to inform, information policy
- exhibits do not require a specific topic
- a good exhibit has the right characteristics

This list of arguments gives good theoretical conditions for using exhibitions in the work by public authorities of informing the people.

1.6 Acknowledgments

The author of current thesis wishes to express appreciation to Framtidsmuseet, a science centre in Borlänge, for giving the opportunity to work with them during three months. Special thanks to my supervisor at Framtidsmuseet Elisabeth Eronn and Heléne Ecström with whom I shared office, tanks for their time, support, and ideas. Thank you Lars Broman my supervisor at Högskolan Dalarna and my fellow student Gloria Seitei who was my opponent. Also a great thank you to my family who supported me and forced me to explain what I was doing the way a four year old would understand.

2 Methods

The work of this thesis is divided in two parts;

- Studying public authorities and their use of exhibitions. This is done by qualitative interviews with public authorities, search, and study of internet, and a quantitative survey to a large numbers of museums and science centres.
- The making of an exhibition with a subject from a public authority. This is done by a qualitative study of the process of planning an exhibition and exhibits

2.1 Public authorities

This heading describes the methods used to collect data regarding public authorities and their attitude towards information and their present use of exhibitions.

2.1.1 Interviews

In order to get more information about the attitude towards information among public actors a series of interview were made. The aim of the question was to find indications about if the Principle of Public Access in Sweden and information policies are only empty words and not established in the daily work. The interviews are chosen from different authorities in order to get a wide variety in size, assumed target group, area of activity and from persons in different levels in the organisations. The authorities were chosen by taking the big, generally well-known authorities in Borlänge and by studying the website www.sverigedirekt.se and choosing authorities that appeared to have information to the public. If an organisation has several offices in Sweden, the most local to Borlänge was selected.

The thirteen chosen authorities were:

- A governmental project against racisms "Arm in Arm"
- Banverket
- Borlänge Municipal, Department of Information
- Borlänge Energy, Department of Information and Waste Treatment
- Consumer Guide, Borlänge and Gagnef
- County Administration of Dalarna
- County Council Department of National Health, Dalarna
- Municipal Office for Sustainable Development, Borlänge
- National Dental Service
- Roslagsbanan, Public Transport in Stockholm County
- Swedish Road Administration
- The National Institute of Public Health.
- The National Social insurance Board

Interviews were done both visiting the persons, having the interview at their office or interviews by telephone. The length of the interviews were not measured but estimation by the author is that they varied between ten and twenty minutes. All interviewees are given an introduction of the thesis in which the interviews are included followed by a summary of the subject of the questions. The interviews are conducted with open-ended questions. Some questions were asked at all occasions and some given by the conversation, Appendix 1. None of the interviewees had any objections towards having the interview published in the thesis.

Notes are taken during the interviews and a summary is conducted after the interview. Time between interview and writing summary varied between some minutes to four hours, the majority of the summaries were done some minutes after the interview. The interview summaries were sent to the interviewees just some weeks after the interviews and they were given the period of one month for comments. There were only minor comments sent in return. The summaries were sent out in Swedish for convenience for the interviewees and later translated to English for the inclusion in thesis. Notes of interviews were divided under three headings, “What, why and to whom”, “How and evaluation” and “comments”.

The notes were studied qualitatively looking at the work with information. How the work is done and the general attitude towards information and exhibitions.

2.1.2 Internet

Internet was searched in order to find published examples of exhibitions made by public authorities. Google was used as an internet search motor searching Swedish pages with following words in different combinations (words written in Swedish):

> Cooperation, exhibit, exhibition, public, public authority, travelling exhibition, and together.

Four examples were chosen to exemplify the use of exhibitions by public authorities.

The homepages of the interviewed authorities were also visited in order to get contact information a general picture of the pages; www.armiarm.nu, www.borlange.se, www.borlange-energi.se, www.vv.se, www.banverket.se, www.rfv.se, www.borlange.se/kommun/agenda21/index.html, www.borlange.se/kommun/konsument/, www.ltdalarna.se, www.w.lst.se, www.fhi.se, and www.roslagstag.se.

2.1.3 Survey

A survey was sent to 80 museums and science centres in Sweden see Appendix 1. Most of the Swedish science centres and bigger institutions were chosen together with county museums and some municipal museums. Addresses was found using internet. The survey was sent out in May 2004 and the museum had two weeks to answer the survey. The survey consisted of a letter describing the thesis and background, the survey for the recipient to fill in, Appendix 3 and an envelope with return address and postage. The paper and envelope had Högskolan Dalarna's name and logo. A reminding letter was not sent out.

The replies were studied quantitatively looking at public authorities' connection with museums and science centres like exhibitions initiated by authorities. The survey also gave material to study some characteristics of the museums.

2.2 Exhibition and exhibit

The introduction discuss theories about learning from exhibitions, and the making of exhibits implying that there is nothing that makes exhibits only useful displaying natural science. In order to closely examine the possibilities of making exhibits out of other topics; some exhibits will be planned. The examples will be made with a topic from a public authority. The examples are planned by the author alone and in one case together with personnel from Framtidsmuseet. Ideas of exhibits are described with a few words and sketches. The subject for the exhibition to be planned with Framtidsmuseet was chosen among the interviews of public authorities and the one that showed most interest in the idea of exhibition. The material for the exhibition was brought together by an extra interview with the consumer guide in Borlänge, 18 June 2004 at the consumers guide office in Borlänge. After the interviews, material from the interviews was qualitatively put together in order to be used as background material during the planning of the exhibition. A meeting of planning the exhibition was convened at Framtidsmuseet in Borlänge on 23 June 2004. Present were the director and a pedagogue of Framtidsmuseet and the author. The meeting of planning started with the author introducing the ideas of the exhibition and the summary of meeting with the guide including the background material. The introduction continued for about five minutes and was ended by describing an example of an exhibit.

Some of the interviews with authorities lead to a distinct and well-defined problem that the interviewee worked with. In these cases, the interviews served as background material for the planning of exhibits. The author did the planning.

During the process, notes were taken and continuously put to writing. Notes were taken of the things said in the interviews and discussions. Notes were also taken regarding the process of planning an exhibit that is how the process developed. The material was qualitatively studied looking at the way an exhibition is taking shape.

3 Observations

This chapter presents the observations made during interviews, search on Internet, the survey and the process of planning an exhibition.

3.1 Public authorities

This heading shows the observations made of public authorities with the methods described above.

3.1.1 Summary of interviews

As described above the notes as divided under three headings; “What, why and to whom”, discussing what kind of information the interviewee and the actor work with, why they do it, is it obligated or volunteer and which is the target group. Next heading “How and evaluation” summarises how the information is given and if there is any evaluation of the work with informing the public. Last, a heading “Comments” for any other issues mentioned in the interviews. The notes of each interview can be read in Appendix 4 and below is a summary of the interviews.

One of the interviewees did not have the public as a target group. They worked as experts giving advice and information to health organisations on a municipal and county level.

What, why and to whom

Among the interviewed the dominating source of information was the own work of the authority. General information about for example the rights and obligations citizens have towards the authority or how the work of the actor affects the public. For example, the municipality of Borlänge continuously inform the public about political decisions that might affect the citizens. Laws and regulations are also a major part in the general information exemplified with the county administration of Dalarna that work with several laws and regulations affecting the public and companies. There is also specific information given to the public, specific meaning that it refers to a topic of a project or activity of the public authority. For example, information about dental care of elderly people is given to nursing staff and households are informed about “how to sort the garbage”. This specific information can be of temporary nature as well as a continuous work. An example of temporary information is the project named “don’t drink and drive” by Swedish road administration and an example of continuous work with specific information is Borlänge Energy’s work with informing households how to sort the waste.

The information is spread both regulated by law and of own interest. The law regulating this is the Principle of Public Access and obligations connected to the public authority because of their assignment. The National Social Insurance Board have an obligation to inform about their activities, the Swedish people have a right to know and should know their rights and obligations regarding social insurance. All the interviewed people saw the spread of information as a natural and very important part of the everyday work.

The target group was often big among the interviewed. Governmental authorities often had the Swedish population, except children as a target group. This of course is mostly for the general information that in its nature concerns many people. There where also examples of small target groups with specific information like the project by Banverket who informs the target group school children living next to a railway about the dangers along railway tracks.

How and evaluation

The interviews showed that all kinds of methods are used in order to spread the information. General information is mostly spread though internet, telephone, and personal visits. Internet with informative pages was well used and commented as very useful. The personal contact through telephone and meetings are an important part in the work. Methods to spread the more specific information vary with the project or activity. Here all kinds of media communication are used, e.g. advertising, TV, lectures, brochures, cook books and exhibitions. Most mentioned were lectures, advertising and brochures. The Swedish Road Administration was unique among the interviews in that they used all traditional ways of informing and used interactive exhibitions including theatre and role-play.

There was no obvious trend among the interviewed if it is common to evaluate the work with information. Seven out of thirteen interviewees said that they had a continuous follow up of the effects of information given to the public.

Comments

There were some comments on the need to change attitudes among people in order to be in line with the work of the public authority, for safety, convenience, and sustainable society. For example, Roslagsbanan had noticed a trend of older people neglecting the dangers of railroads and Borlänge Energy that is producing a booklet describing where responsibilities starts and end between the house owner and Borlänge Energy. Banverket also had a specific a project in process of increasing girl's technical interest

The aim was to gather information about public authorities work with information. Of course, thirteen interviews is a very small number of the total numbers of public authorities with a need to inform. In addition, the interviewed persons were all in different organisations and all with different assignments. The number of interviews is too small to draw reliable conclusions about any trends or the action of the majority but enough to make comments about the indications.

3.1.2 Internet search

There were some examples of exhibitions made by public authorities published on the Internet. The Swedish Road Administration had published several examples of their work; two examples of travelling exhibitions are:

> The human, the vehicle, and the road, an exhibition about safer traffic. An exhibition within a project called "cooperation for safer traffic in Västra Götaland". An exhibition displaying smashed cars. One into a tree at 50 km/h and one into a railing. Also displaying airbags and videos of the testing cars. Shown during summer 2001 at 68 locations with approximately 84 000 visitors and approximately 19 000 conversations with visitors. (www.vv.se 2001)

> Speed and the weight[1] in a crash, an exhibition about protection in traffic. The exhibition displayed videos of traffic safety and the opportunity feel baby dolls head with natural weight then place the head on a scale to see the weight in a crash at different speeds. The exhibition was displayed at 74 locations during summer 2002 with approximately 87000 visitors and approximately 23000 conversations with visitors. (www.vv.se 2002).

There are also examples of the use of interactive theatre or role play to give information to in these examples school children. These are taken as examples of interactive in the way that the "teacher" is interacting with the audience. Here also traffic is a subject presented by another actor in traffic. Another subject is the work against racism presented by the Swedish Integration Board.

> "Forumspel" an interactive theatre were the audience is guiding the actors in the scenes. In this case the theme is driving and alcohol. The theatre have been a complement to discussions and been presented to students in nursing and health. The work have been evaluated through interviews. (www.vv.se)

> "A journey like no other". A role-play played by the audience and with a written script. The story is made by the participants. The subject is immigration, to flee from a country and try to immigrate in Sweden. A well appreciated three hour theatre produced by National Museum of History, the Swedish Role Playing and Conflict Gaming Federation and the Swedish Integration Board. (www.sverigemotrasism.nu 2003)

[1] Authors comment: In the exhibit the weight was displayed in kg and tonnes instead of using force.

An organisation that is not really a museum is Riksutställningar, Swedish Travelling Exhibitions, they produce exhibitions that is suppose to be on tour at the museums in Sweden. Eva Grimlund (assistant director of exhibitions at Riksutställningar, Personal conversation 2004) explains that normally they produce exhibitions of topics up to date in society designed by artists. Some of the exhibitions have been produced in cooperation with a public authority, one example is Motomat an exhibition about food and nutrition that was produced in cooperation with Ministry of Agriculture, Food and Consumer Affairs (Blom 2003).

Although some examples were found on the Internet, there might be several more in existence. None of the exhibits presented in the survey were found in the search of Internet. Reasonably some of these exhibitions if documented would be found using Google and the word described under heading (2.1.2 Internet).

3.1.3 Survey

After three months, 37 out of 80 (about 46 %) museums and science centres had answered the survey. The answered surveys were put together in a table, Appendix 5 (in Swedish). An analysis of the answers was done, Table 3, to study the numbers of answers on each question. As the survey was designed, the assumption that public authorities can be a part of an exhibition in some different ways was adopted.

- Public authorities can initiate an exhibition produced and shown in a museum.
- Public authorities can be contacted when a museum or science centre is producing an exhibition with a topic of the public authority.
- Public authorities can finance the work of a museum or science centre
- Public authorities can be members of the boards of directors.

Public authorities were represented in all of these different ways of being a part of the exhibition. Public authorities have initiated exhibitions with a topic of theirs. There are also examples of exhibitions produced by the museum or science centre with a topic of public authority. Fourteen different authorities were mentioned with the Swedish road administration in four different surveys. The public authorities that have had exhibitions with a subject of theirs and are mentioned in the survey are:

- Church of Sweden
- Development of Stenungsund
- Gotland Energi.
- Municipalities in County of Norrbotten
- Stenungsund Municipality
- Swedish Road Administration
- The Royal Swedish Academy of Engineering Sciences
- County Administration of Jönköping
- Ferruform
- Ministry of Forestry
- Recreational Centre of Västerås Municipality
- Swedish Army
- The National Agency for Higher Education
- WWF, World Wildlife Fund

A complementary question, appendix A.3.1, was sent to the museums that have had an exhibition with a topic of a public authority. The question was if there was any documentation about the exhibitions referred to in the survey. Unfortunately, there was no documentation and this might contribute to the explanation why these examples were not found on the internet.

Public authorities are also mentioned having a more indirect influence on exhibitions by being represented in the board of directors or as a financier. Public authorities mentioned are:

- Chalmers University of Technology
- Church of Sweden
- Gothenburg Energy
- Gothenburg University
- County administration of Blekinge
- County administration of Stockholm
- County administration of Örebro
- Member of parliament
- Municipal politicians
- Municipality of Haninge and Tyresö
- Municipality of Trollhättan
- Region of Halland
- Royal Institute of Technology
- Svenska spel, gambling actor own by the state
- Swedish Road Administration
- The Bank of Sweden Tercentenary Foundation
- The National Board of Forestry
- The National Property Board
- The Royal Swedish Academy of Engineering Sciences
- The Swedish Environmental Protection Agency
- The Swedish Sports Confederation

Although 35 different public authorities are mentioned above as having some connection to exhibitions only thirteen different museums or science centres have mentioned this different kind of cooperation. This is because some of the museums and science centres had cooperation with several public authorities.

In some cases, the public authorities are working as a financier with no influence to the work of the museum or science centre. Eighteen of the surveys mentioned these circumstances, nine of the surveys answered “yes” in different ways without mentioning any actor. The authorities mentioned being only financiers were:

- Chalmers University of Technology
- Embassies
- Gothenburg municipality
- Government of Sweden
- County administration of Blekinge
- County administration of Örebro
- Ministry of Culture
- Swedish Environmental Protection Agency
- Swedish National Council for Cultural Affairs
- Trollhättan municipality
- Uppsala University

The survey also included some questions about the size of the museum or science centre. The surveys revealed a big difference between the biggest and smallest museum. The size of the museums´ permanent exhibitions area varied also much from the size of a bigger private house to the size of little more than two football fields. Further more the area for temporary exhibits varied, from 50 to 5 000 m^2.

There are also big differences in the numbers of visits, one museum had 1 000 visits a year and the most visited museum had almost 800 000 visits per year. The total amount of visits presented by the answers is approximately 5 300 000 visits per year and those museums that have had an exhibition with a public authorities theme the sum of visits per year is approximately1 400 000. The figures tell noting about if it is the same visitor entering several times or if it is unique visitors. The amount of visits presented in the survey probably is the counting of visits not visitors. Since 5 million persons represents more than half of the population in Sweden. In addition, this sum is presented by a minority numbers of the Swedish museums and science centres. In contrast the Sweden's Statistical Databases (1999) show that about 44% of the Swedish population visit a museum at least once a year and about 42% of the population visit a museum up to four times a year. The population in Sweden was the same year approximately 8,9 millions and 42% representing 3,9 millions (Sweden's Statistical Databases 2003).

Table 3 Survey to museum and science centre, numbers of answers to each question.

Question		**Number of answers**
To which extent have you cooperated with a public authority after year 2000.		
They ordered an exhibition		7
We did an exhibition of their work		10
The exhibition was financed by a public authority		10
Public authorities in our board		12
Public authorities finance the museum, don't initiate exhibitions		18
No cooperation		10
How many visitors per year?	Mean	140 000
	Median	66 000
	Range	1 000 – 789 000
How large is your exhibition area?		
Permanent m^2	Mean	3 200
	Median	1 600
	Range	250- 15 000
Temporary m^2	Mean	600
	Median	300
	Range	50 – 5 000

Questions about the work of the museum was included in the survey, e.g. in which category the museum worked and who the visitors are. In the survey, the assumption was done that a museum could be active in many categories. So the recipient was asked to rank the activities in order from the most active to the least. Ranking the activity with number one as most active and four as least active, Table 4. This can be exemplified with the question "In which category are you working?" Twelve museums answered the question, eleven ranked their activities as mostly "County/region museum" with the number one, and one museum ranked their activities as "County/region museum" coming second and no other reply to this question. Some remarks were made by a few recipients of difficulties answering the survey. The categorization could be difficult since some county museums display both culture and science along with history.

Most of the museums answering the survey displayed natural science and technology or were active as a museum of a region or the county. The alternative "Other" had a blank line to fill in. Activities mentioned here were different historical themes, municipality topic, and athletics.

Majority of the visitors to the answering recipients were public followed by schoolchildren. Only five of the museums had tourist as a main target group but tourist were a significant group among most of the answered surveys. In the alternative "Others" recipients mentioned for example students, families and visitors of conference.

An interesting question regarding the possibilities for public authorities to influence the topic of an exhibition was "Who has the biggest impact on the topic for a new exhibition?" The overwhelming answer that it is the staffs of the museum has the most impact of choosing the topic. That is in most cases among the museums answering the survey, the staff that has most influence in what to show. Cooperation partners, which in some cases can be a public authority, came second. Two museums placed guidance from the general public as having the most impact of what to show. Financiers have a little impact on exhibitions among the recipients. Authorities mentioned as a reply to "Other" was non-profit associations, artists, curriculum, and the current general interest of the topic.

Table 4 Survey to museum and science centre, numbers of answers to each question and the rank of categories.

Question	**Number of answers**	**Number of answers: 1**	**Number of answers: 2**	**Number of answers: 3**	**Number of answers: 4**
In which category are you working? Rank with number 1 as the main activity.					
County/region museum	12	11	1	0	0
Culture	13	6	5	2	0
Natural science and technology	16	15	0	0	1
Other	11	0	1	0	0
Who are your visitors? Rank with number 1 as the biggest group					
School children	30	9	13	7	1
General public	33	21	10	2	0
Tourists	29	5	5	17	2
Other	9	1	1	0	1
Who has the biggest impact on the topic for a new exhibition? Rank with number 1 as main impact.					
Own staff	36	28	7	1	0
Cooperation partner	22	6	12	3	1
Financiers	16	0	2	5	8
General public	18	2	4	8	2
Other	8	0	0	1	0

3.2 Exhibition and exhibit

The process of planning an exhibit or an exhibition were similar to each other even though the exhibition on consumer rights was planned with three people and the exhibits triggered by the interview were planned by the author alone. The process can be described in different phases that are present in the planning process.

Defining the problem

> That is to get knowledge about what it is to be shown, knowledge of the problem. Why is this needed? What is likely known by the visitor, attitudes towards the problem and so on?

Creative phase

> In this phase, the problem is processed and several ideas are tested. Can it be shown like this or that?

Construction

> As the idea is set, the work left is designing the exhibit to be functional and something that is useful to the visitor.

The steps are not well separated in time, especially the creative and construction phase goes into each other as the designing might affect the idea, so it has to be changed.

When planning an exhibition it is important that the information is accurate and the focus is on the most important issues. There might be a cause of error because here of the fact that the guide with first hand information was not present at the planning process. The author was responsible for the information in the planning process. As it turned out the exhibition at this stage is not depending on the exact facts. The plans this far is more of how to expose the information.

3.2.1 Exhibition

This heading discusses the planning process conducted by the author together with personnel from Framtidsmuseet. The author introduced the theme, background and for the aim of the meeting. “Making an exhibition with the topic of consumer right”. At the end of the introduction, the author presented an exhibit idea to get the minds going:

> “How much is 1000 SEK/month”. The exhibit consist of a frame, about 30x30 cm and blocks of different size. Text defines the frame as 1000 SEK/month and blocks representing different daily purchases e.g. a soda per day, send five text messages with the mobile each day, a cup of coffee and so on. The size of the block correspond to the

> cost. The visitor places blocks in the frame and explore what is possible to do for 1000kr/month."

Then followed some questions regarding the work of the consumer guide and a general discussion about consumers and consuming. The discussion focused on the decisions that have to be made all the time, the importance of being aware and having knowledge. This came to be the thing that was to be on display, the importance of being aware and having knowledge to make the good decisions. Several ideas were mentioned like; telephone booth where you make decisions like a telephone service, role-play, and small text contract changes into three concrete sentences. The discussion focused on all decisions that have to be made and is typical for a consumer every day. In the discussion being a consumer was described as "It is easy to get lost in all information that is needed and not needed." The idea of a maze came up. The idea of a maze have been used by a near by science park, "Teknoland" produced by Lars Broman. (Broman, personal communication 2004). The maze in "Teknoland" was based upon questions about natural science. The maze was given to Framtidsmuseet summer 2004 prior to the described meeting.

In this case, the maze can represent the situation for a consumer. A consumer has to make decisions and if chosen wisely you go through the maze and if your decisions are not wise you might end up in a dead end. A maze is known to most people and it is easily understood. A maze in it self is an attraction and it works as a maze even without reading the text. It is the decision that leads the visitor through the maze. Using text with options that guides the visitor it is shown that it is the same in real life; it is the decisions that a person makes that gives the way through life.

The exhibition would be a maze where a visitor has to take decisions on which way to go and there is a consequence of every choice. At every crossing there is text and guidance on which way to go depending on the decision. Moreover, at every road there is a station to mark the consequence at a "ticket" the visitor brings along. The text is in the example the focus is on the financial effects when making decisions but it can easily be changed to any subject by changing the text.

In the introduction of this thesis, several properties of a good exhibit were described. There was no active check in the planning process if the ideas to exhibits had any of the characteristics that are significant for a good exhibit. In the meeting ideas were taken and rejected by the staff's experience of earlier success of exhibits.

It is also possible to make the maze in different sizes and shapes. It is suitable for a big walk through maze of 6x10 metres but also possible to make a small tabletop maze for a public area and a board game for lectures. Eventually three exhibits where the maze is used had been defined. Three mazes in different sizes to fit each a specific setting.

To summarise the meeting, it started with an introduction of the aim of the meeting and the setting of consumer rights. Followed by some clarifying questions and brainstorming about ideas for exhibits. The idea of a maze was established and developed in some settings. The design of the maze was discussed and the meeting was closed by a summary of the meeting and warm thank you to the participating staff from Framtidsmuseet.

3.2.1.1 Full size maze

This is a big maze that the visitor walks through illustrated in, Figure 2 and the aim of the exhibit is for the visitor to see some consequences of acting as a consumer and focus on financial effects.

Acting with the maze

The visitor walks through the maze and brings a ticket; stamp the ticket at different stations in the maze. At the exit of the maze, the visitors evaluate their choices by locking at the ticket and counting stamps. Looking at a table to see that a certain number of stamps represent a certain salary required to pay for all the things chosen in the maze. In the maze there can be information station where the visitor can learn before making decisions.

Material

Maze of 6x10 meters and 2 meters of height. Text and picture at every crossing. Stations for marking consequences of the choice.

Text

Examples of daily habits, what to do with commercial offers, what to buy, insurance, and so on. Using the pictures and language of advertising.

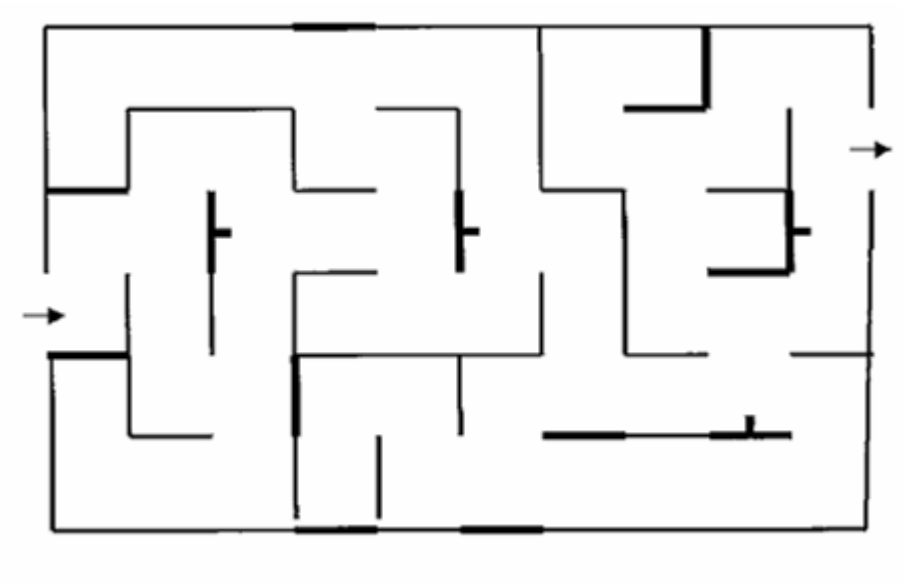


Figure 2: Illustrating "Full size maze", with the layout of the maze given to Framtidsmuseet, exhibition of consumer right, (not in scale only principle)

3.2.1.2 Small maze

This is a maze for the public setting, library, and school, for a visitor to stand besides and interact with. The aim is that the visitor discovers some consequences of acting as a consumer, focus on financial effects. Decisions give a need for a salary.

This again is a maze that in itself is attracting. In this you start by reading the text in the lower left corner. The text gives two alternatives and the choice is made by sliding either of the adjacent lids. When sliding the lid new text is revealed with other alternatives and new decisions to be made.

Acting with the maze

The visitor slides lids when making decisions and by that way the flipped lid gives the way through the maze. Figure 3 shows the maze at the start when all lids are closed and an example of the maze when the lids have been opened in order to go trough the maze. The last lid reveals for example the salary needed for the decisions made through the maze.

Material

Maze of the size to fit a table. Lids forming a maze with text and picture underneath lids. Text should be easy to change.

Text

Daily habits, what to do with commercial offers, what to buy, insurance. Using the pictures and language of advertising.

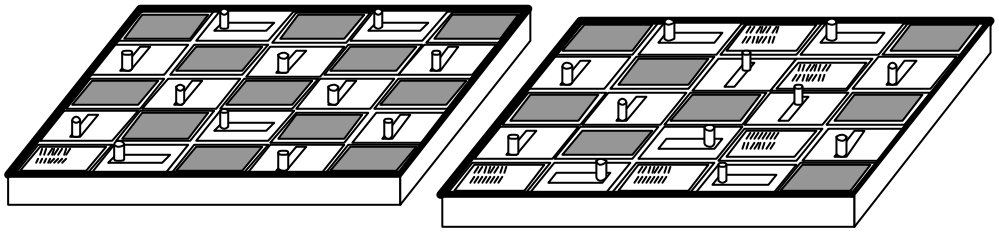


Figure 3 Sketch, example small maze suitable for waiting room, public area and such. Exemplified with the maze at "stating positions" with introduction text in lower left corner and as the lids have been opened in order to go through the maze

3.2.1.3 Lecture maze, board game

This maze is for the classroom setting. It is designed as a game, the game starts with making a budget and the aim is to go through the maze, make decisions according to cards taken at crossroads and keeping the budget. The winner has most things and the lowest monthly expenses and closest to the initial budget.

Acting with the maze

The players take turn in walking to a cross road and taking a card. Depending on the player's decision, he/she will get things and expenses and next move will be in a specific direction.

Material

Maze of 0,4x0,4 meter printed on paper, cards and money.

Text

Daily habits, what to do with commercial offers, what to buy, insurance.

3.2.2 Exhibits from interviews

An exhibit was planned by the author alone from seven of the fourteen interviews. During this planning, the aim was to design an exhibit that could be transported and used in a public setting. Something of the size to fit on a table and easily displayed in for an example a waiting room.

Municipal office for sustainable development

Sustainable development, to show that all our actions influence the society.

A table with things that we normally buy, fruit, chips, soda and so on. Figure 4 shows an example with soda. You are encouraged to lift the things. All things are tied to weights that correspond to the amount of petrol and diesel that has been used to produce and transport the products. Good thing to place domestic and foreign goods next to each other e.g. Pringles and Estrella.

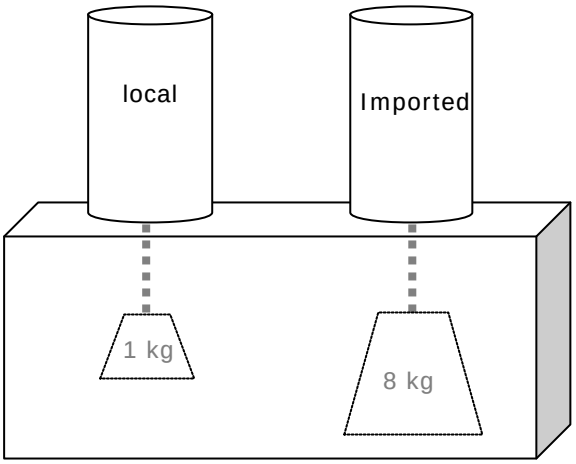


Figure 4 Exhibit example, local and imported goods weigh different

Banverket, department of school information

The dangers connected to railroads.

A small landscape in a glass box with railway, train and wire, Figure 4. A stick hold by a doll is movable from outside. The model is build with electric so that when the stick is close to the wire the electricity jumps over to the stick with a flash. Maybe this can be accomplished with a modified stun gun that works with ordinary AA batteries. This model shows that you do not have to touch the wire in order to be electrocuted. It is of importance to make it obvious that the doll is hurt in some way when touching the wires. On the other hand, it is maybe the visitor that should touch the wires and get a small electrical shock.

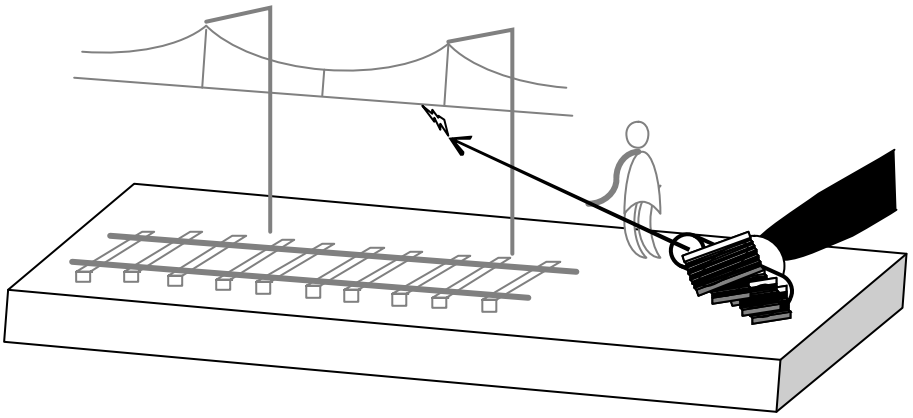


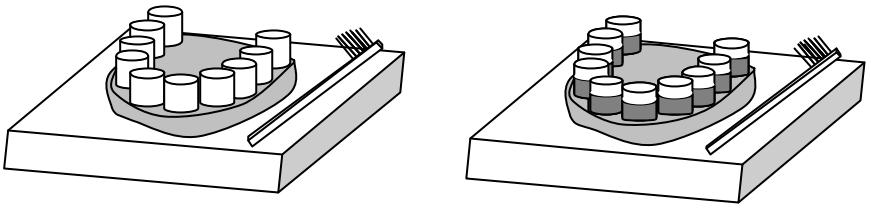
Figure 5 Dangers by rail roads, exhibit example, electric sparkling when pointing close to wires

National dental service

The importance of brushing the teeth

Set of teeth getting dirtier every day, possibilities to brush them clean. But the next day they are dirty again as in Figure 6.

The set of teeth are big, one tooth 2 cm. A cylinder representing not brushed teeth is slowly rising, with a tap of the brush the visitor makes the cylinder drop down and brush the tooth.



Clean

and after a while not that clean

Figure 6 Dental care, exhibit example; teeth getting dirty by time, possible to brush with the toothbrush

Consumer guide

To show the real cost of buying a mobile for 1 SEK.

Mobile and three flip boxes with piles of money painted on top. You guess the price for the first year and lift the lid and see what you get for the money, Figure 7.

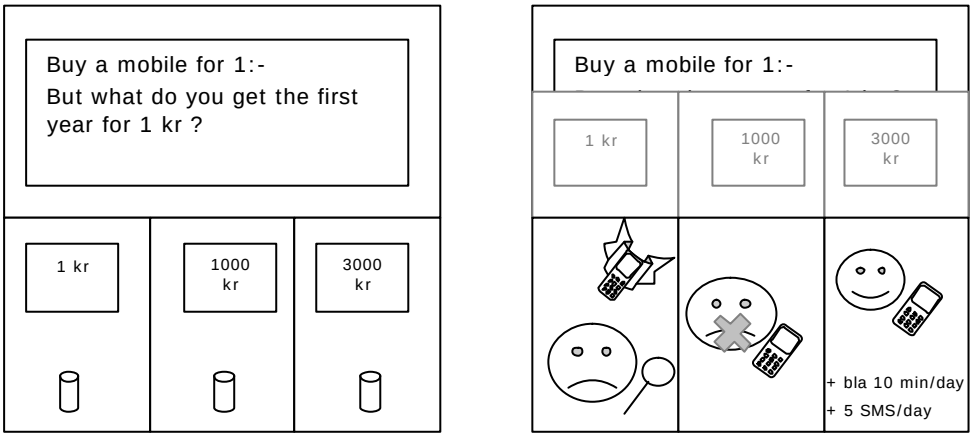


Exhibit with closed lids

Exhibit with open lids

Figure 7 Free mobile?, exhibit example; how much is the real cost for a 1 kr mobile the first year.

Borlänge Energy, department of information

Display the boarder between house owners and Borlänge Energy.

A house like a dolls house with extra plumbing, pipes, electricity, chimney, wires and other things connected to the house that might be a question of responsibility. There are buttons all over the house that is supposed to be pressed, Figure 8. In front of the house is a display and a computer connected to buttons and display. When visitor presses a button information will be shown on the display. The information is both the

public information of who's responsibility it is and a possibility for local companies to advertise.

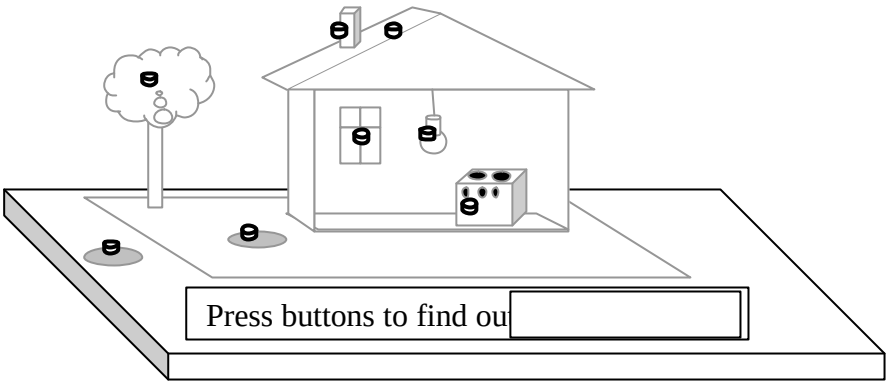


Figure 8 Who's responsible, exhibit example; buttons to press and read about responsibilities with different objects in a house.

Roslagsbanan, public transport within Stockholm County

Change attitude towards crossing railway track at places not allowed. This is done by using text and pictures to start a thinking process in the mind of passengers.

Text and picture at the station; railroad tracks painted on the station floor at a specific length. Painted text next to the track "this is how far the train goes during the time you cross the rails." Figure 9. Text at places known as illegal crossing; "If you cross here you get to the stations 12 seconds faster. Those 12 seconds you could have used to think happy thoughts like; what to do if you win on the lottery?"

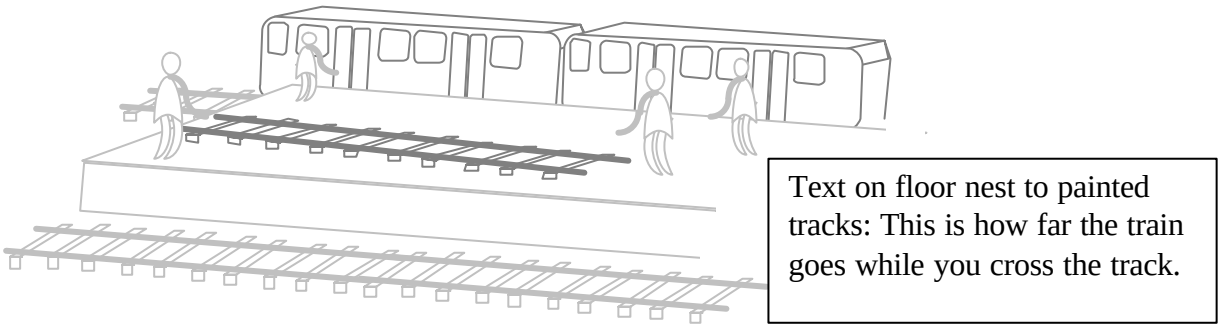


Figure 9 Crossing rails, exhibit example; change attitude towards illegal crossing of rail road tracks.

The National Social insurance

Change attitude, more fathers are to use parental leave.

Exhibition with at baby doll, Figure 10, that laugh when handled carefully, real baby laughter from the heart. However, the doll makes crying sounds when handled less carefully. Sound triggered by a motion sensor in the doll. Many pictures of fathers with children on the exhibit. The thought is that what you see is the things that are accepted.

An idea that was considered but was rejected because calculations tend to be too general and of no interest to the individual was; simplified calculations, by rotating

wheels with numbers you set variables suitable for specific family situations. You set variables of salary for both parents, time at home and you get the result of family economy now and in future with pension.

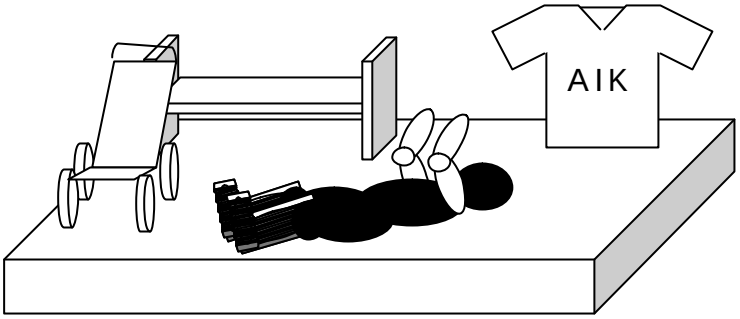


Figure 10 Paternal leave, exhibit example; play with doll that makes sounds as a normal baby, laughter and cry depending on handling.

4 Results

This heading discusses the results of the observations presented under the heading "3 Observations" above.

4.1 Public authorities

This heading discusses the observations done of public authorities by interviews, survey, and internet. In each method used to study public authorities, interview, survey and Internet, a relatively few cases were studied. However, the studies all looked at the same topic, the use of exhibitions from different directions so together the observation gives more certain indicators of the work with information done by public authorities.

It is obvious that information is important in the work of public authorities. Of course, there is the Principle of Public Access, but there are also examples of laws obligating the public authorities to inform about their work. This is probably a reason for the attitude among the interviewed that giving information is part of the work, that the public authority have the obligation, legal or not, and the need to inform the public.

If studied closer the interviews indicate (at least) two kind of information given by public authority; general and specific, table 5. The general information concerns law, regulations, and the work of the public authority. Public authorities have an obligation to keep their work open to the public according to Principle of Public Access and in some cases according to law inform about their work. The specific information is about a well-defined work within the organisation. It can be temporary projects or a continuous work in a definite topic. Another difference between the two types is how information is given. The general information is mostly given through the Internet and telephone. It is a passive work in the way that general information is only kept available to the public and it is the individuals that have to make the effort finding the information. Specific information on the other hand is given actively, seeking the individuals that might have a need of the information, according to public authority.

Table 5 Examples of differences between general and specific information in the work of public authorities.

	General information	**Specific information**
Topic	Laws, regulations, the work of the authority etc.	Projects within the authority, narrow topics, special campaigns etc.
Target group	Large, the Swedish population, adults and so on.	Smaller, defined groups, personnel, school children…
Activity	Passive, the public have to search for the information	Active, the authority gives the information
Method	Internet and telephone	Advertising, TV, newspapers, brochures, lectures, exhibits

Internet is mentioned by all interviewees as an important tool in the work with information. They all have well established and useful homepages. At the pages, the public can find answers to all common questions and lot more. Telephone and in some cases, visits by the public are an important way of informing the public. It is an effective method in that questions can be answers and explained at the same time. It is also useful for those citizens that do not have access to internet or feel more comfortable talking to a person. However, the backside of these methods is that it requires the attending of educated and service-minded personnel.

A method that is close to exhibition is the lectures or seminars that are used by some authorities. The method is close to exhibits in the way that they are more or less interactive. Specially in role-play the visitors/pupils are interacting. Lectures were mentioned as more or less well established with special personnel working as school instructors. The lectures are held as traditional school lectures with some help by overhead apparatus and written material. An example is Roslagstag that in their contract had obligation to inform about their work at school near the track.

There are examples of public authorities working with exhibition although not that many and it is in the work with specific information examples of exhibitions are found. It is also here that examples of the use of all traditional media communications are found. Examples like advertising in TV/radio/newspapers, banners, brochures, lectures and so on. The diversity comes natural as the projects differ and by that, the way to get to the target group differs. According to the survey and interviews, there is no obvious connection between the public authorities that have had an exhibition of their topic. There are examples of exhibitions made of topics from quite different authorities like; the Swedish Church, Swedish Army, different municipalities and a public's own energy company.

Looking at the world of museum and science centres there are examples of exhibitions made by public authorities themselves and museums or science centre that have exhibitions produced by own interest, a topic from public authority, Table 6. The fact that there are examples of exhibitions with a topic of an authority indicates that some authorities have knowledge about the educational setting in a museum/science centre and also the will to use it. It also indicates that the work of public authorities includes topics of such interest that an institution outside the authority is motivated to make an exhibition of it.

There are other ways public authority can influence the work of a museum or science centre, other than the production of exhibitions. The examples of public authorities that are members of the board of directors or they can finance the work which is the most common cooperation between authorities and museums or science centres, Table 6.

Table 6 The numbers of public authorities mentioned having some cooperation with museums or science centres. Some are mentioned in several categories.

	Authority initiated exhibition	**Made exhibition with topic from authority**	**Authority in the board of directors or financier of exhibition**	**Public authority only as a financier of the museum**
Numbers of public authorities mentioned	12	10	21	11
Numbers of Science centre or museum answering	7	10	20	18

Looking closer at the answers and counting each authority and recipient only once, it is possible to see that 14 different public authorities were mentioned being directly involved in the theme of an exhibition and these were mentioned by 13 recipients, Table 7. Looking at any contact between the authority and the museum or science centre 45 different authorities were mentioned. The numbers of recipient that mentioned the cooperation was 27 out of the 37 leaving 10 museums or science centre without any cooperation with public authorities. This indicates that if a museum has cooperation with a public authority they usually cooperate with several different authorities.

Table 7 The numbers of unique public authorities mentioned having some cooperation with museums or science centres.

	Authority initiated exhibition or exhibition with their topic	**Any kind of cooperation**
Numbers of unique public authorities mentioned	14	45
Numbers of unique Science centre or museum mentioning cooperation	13	27

When it comes to evaluation there was indications about on which level the evaluations were done. Among the six interviews that mentioned that they had continuous evaluation only two out of seven worked with specific information. Those who did not have any evaluation in their activities worked with specific information except one. This indicates that evaluation is mostly made by the work with general information to the public and little evaluation of the work with specific information to smaller target groups. The interviews gave no indication why this is the case.

4.2 Exhibitions

This heading discusses the observations done about exhibits and exhibitions made by survey, Internet, and the planning of exhibits.

Visitors to museums and science centres that answered the survey were mostly public and school children. The amount of visitors presented in the survey was more than five million per year. Although this number probably includes repeated visitors, it indicates that museums and science centres are an environment that lot of people visit. A place lot of people visit ought to be interesting for public authority when it comes to reaching out to the public.

The space used for exhibitions varies a lot depending of the museum, also the area for temporary exhibits. Eronn (personal conversations 2004) say that the normal time for a temporary exhibition to be at display for four or five month and the exhibitions are booked one or two years in advance. A temporary exhibition is normally the size of 100-200 m^2. That is a temporary exhibition will be of the size of a normal family house and be on display at two maybe three museums per year and according to the survey approximately 60 – 140 000 visitors will see the exhibition.

At first, the making of an exhibition out of a topic from the public world seemed odd and difficult to make. However, as the study proceeded and the idea of transforming any topic into an exhibit developed, the easier it was. There were no obstacles like lack of ideas or difficulties to see what can be done when planning the exhibits. The key issue was to define what information is to be shown. This is of course not unique for topics of public authorities it goes for any subject. When the topic of information had been defined, the idea of exhibit more or less appeared by itself.

The exhibits described in the heading Observations shows a wide verity of exhibits that are possible to make. For example in the topic of “dental care”, there is a direct connection between the problem and exhibit. If one is to show the importance of dental care and the effect of negligence, the idea of a set of teeth that you can brush and that gets dirty by time comes almost naturally. When designing the exhibition of consumer right there was a need for defining the very thing to display, the key theme. The topic was “effects of decisions” one has to be aware that what you do is what you get. As this was established, a way to show this was all that was needed and a maze gave a suitable setting.

The phases of planning an exhibition had no characteristics that required a specific subject. A successful exhibition is achieved by the means of applying the features describes in the introduction. Features such as open ended, easy do use, understand and so on. In the process the observed phases were; planning, creative, and designing. Experiences of this thesis imply that an exhibition is a general form of expression with the freedom to show any subject. That is an exhibition does not necessary have to display natural science or history. Exhibits and exhibitions can use information from a public authority for the topic.

Early in the process of planning an exhibition with consumer right as a theme, before the meeting, there were comments like "it is not possible to do anything with consumer right", "it is a boring topic" and so on. Assumingly that motivation and creativity is an important feature this was not a good starting point. Probably the meeting would end up with a useless exhibition. The author saw it important to inspire and give this assignment a positive feeling. This was done by speaking and explaining entertaining and engaged using positive words, smiling and stating this is fun during the introduction and the meeting turned out to be successful.

The creative phase started rather quickly and the ideas came with no hesitation. As the ideas popped up, they were taken and rejected by experience of earlier success of exhibits. The experience of the author is though rather modest compared with the staff of Framtidsmuseet and with their experience, useless ideas were rejected easily. These ideas of an exhibition with a maze is the result of a first meeting and if the examples are to be taken further in a planning process they should be checked to what extend they are a good exhibit. That is checked with the characteristics described in the introduction.

A closer look of the characteristics of the exemplified exhibits reveals the inexperience of the author. The exhibits are checked by the author alone, using the previous experience described in the introduction, looking at some of the characteristics of described in by Sandifier (2003),table 8. Most of them lack the feature of being open ended and giving possibilities for the visitor to play. For example, the "National dental service", "Banverket, department of school information" and "Municipal office for sustainable development" are all quite straightforward. It is obvious what to do and what the outcome will be. Two exhibits might have some characteristics of a good exhibit, "paternal leave" and "crossing rail". The "paternal leave" include a doll to play with, as putting on a soccer T-shirt, and the doll makes sound according to the handling. The doll gives many things to do and different outcome. Second "crossing rail" could give inspire to test how long time it takes to cross the painted tracks or measure the length or just simply balance on the lines. The exhibition planned with the experienced staff of Framtidsmuseet on the other hand gave ideas for an open-ended exhibition with many different things to do and different outcomes.

Table 8 Analysis of exhibits using Sandifier (2003) characteristics that effects attraction and holding powers.

Exhibit	**Open ended**	**Technology novelty**	**Stimulates senses**
How much is 1000 kr/month	yes	no	yes
Full size maze	yes	no	yes
Small maze	yes	no	yes
Lecture maze, board game	yes	no	yes
Municipal office for sustainable development	no	no	yes
Banverket, department of school information	to some degree	yes	yes
National dental service	no	yes	no
Consumer guide	no	no	no
Borlänge Energy, department of information	to some degree	yes	no
Roslagsbanan, public transport…	yes	no	yes
The National Social Insurance	yes	yes	yes

5 Discussion

The discussion will comments upon the results connected to the introduction and be summoned in the use of the experience and recommendations. The question of this thesis is "Can public authorities use interactive exhibitions for their information?" and by the study it is possible to say, “Yes, exhibitions are already in use and there are ways to increase the usage!” Looking through the thesis there are some highlights that leads the argumentation to this conclusion, Figure 11.

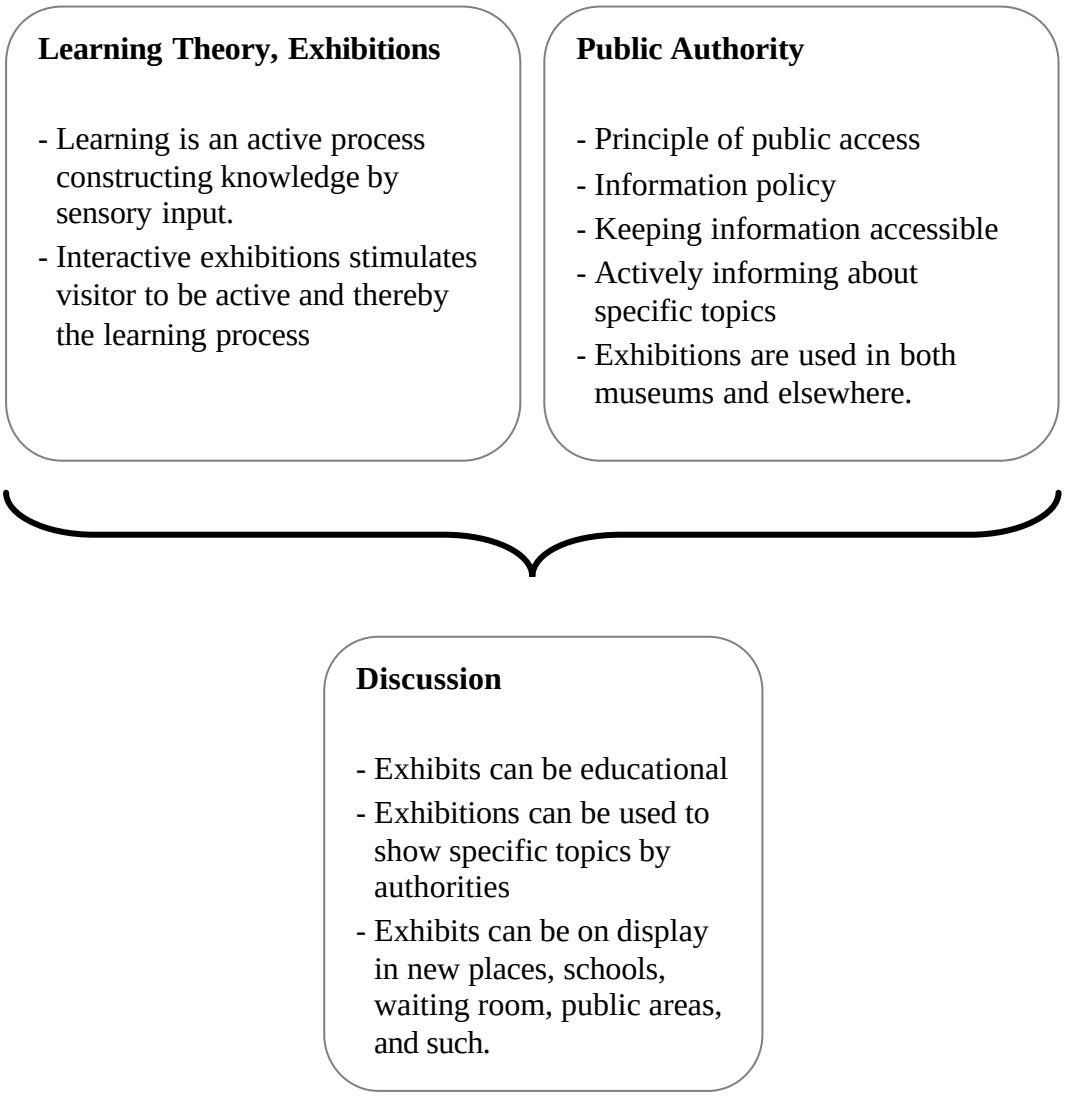


Figure 11: Highlight of content in thesis.

5.1 Public authorities

In the introduction principle of public access and information policy was mentioned. As it turned out those laws and documents were newer directly mentioned during the interviews. They still have a place in the thesis since they are the reason for the work of information by the public authorities. The principles and policies gives an explanation to the efforts put in the work of informing the public.

The observations made in the thesis gives that public authorities work on a daily basis informing the public of their work, regulations, laws, and specific topics. In this work, they use all kind of media communication including exhibitions at museums and in other places. There are also examples of cooperation with museums and science centres with some institutes working with several authorities. This cooperation indicates that the topics of public authorities are important and interesting enough to make exhibitions. These existing exhibitions together with the exemplified exhibits in the thesis indicate that it is possible to make exhibitions out of almost any topic.

Exhibitions benefit from having a well-defined theme, Gammons (1999) recommendations is that it is important to be clear about what your exhibit is trying to achieve. A topic of a general kind of information might be hard to define, for instance, “everybody needs to now everything about sorting waste”. On the other hand, the specific information might be easier to define, for example, “children next to rail road tracks need to be aware of the dangers connected to the tracks”. The Swedish Road Administration and their use of exhibitions are worth mentioning. They work mainly with regulation, laws, and the obligation to spread this general type of information. Still they use exhibitions. The examples of exhibitions above, show the effect of breaking the law that driving too fast. The exhibition does not focus on the important facts/laws that people have to know, the exhibition focus on what happens if the information is not taken in to account.

A fact worth noticing is that according to the survey the museums that answered had visitors mainly from the public, but when it comes to choosing a subject for a new exhibition the staff of the museum has the greatest impact. That is the visitors have a small saying about what to be displayed at the museums. It might be difficult to collect all the opinion from the public but it might be worth trying. At the end, it is the visitors that choose to go to the museums and if it not interesting then they might not visit the museum. This thesis suggests that public authorities should make more use of exhibitions and that leaves the visitors out when deciding topic in a museum setting. However, as discussed above, public authorities do evaluations of their work and thereby have some knowledge about what would be a suitable, interesting, and up to date exhibition.

As mentioned in the introduction by Colley Hodkinson, and Malcolm (2003) there is a difficulty defining informal learning as something completely free in participation, level of knowledge and power. This case is especially when public authority is to inform about their work. There is a significant difference in powers between the public and the public authority that may not be overlooked. A public authority has a great advantage over a citizen in form of knowledge, recourses and in many other ways. The aim is to make an exhibition as close to the visitor as possible. Close in the meaning of using words and concepts known to the visitor. It is easy for a public authority when informing to be patronising and forgetting the differences. The visitor then might have a tendency to neglect the information because it is from "big brother". When designing an exhibition this must be taken in mind to minimize the feeling of difference. The information in an exhibition should be of a specific nature, it should describe a well-defined problem or topic. To make an exhibition of the regulations of The National Social Insurance Board and the effect the regulation has on a person could be hard. There is a lot of information and it is not obvious for the visitor what the point is. However, to make an exhibition about paternal leave would be easier, in that way the point of the exhibitions is easily understood.

We can picture a scenario with the exhibit of the national social insurance that is the doll making sound. With sound as one of the characteristics describes as having a holding power according to Sandifies (2003). The exhibit is placed in the authority's waiting room next to brochures and other material that is meant for the visitors. The doll can be set to make sound by itself to draw attention and the thing next to the doll stimulates to place the doll in different positions. More examples than described earlier can be a car, baseball cap, baby chair or a banana, maybe even more odd things like a screwdriver or hammer can be placed next to the doll in order to stimulate playing. As the doll is handled, it makes either happy laughter or sound of discomfort giving feedback to the visitor. The mechanism is set to make as much laughter as possible to trigger happy feelings within the visitor and stimulate the learning of happiness connected to a child. This scenario with a doll might have a larger impact on a person soon to be a father than a brochure stating the importance of spending the first years together with the child. This is still only working in theory, according to Gammon (1999) visitors to weird things so the exhibits must be tested before put in use.

5.2 Informal learning and exhibits

The thesis began with the learning theory of constructivism stating:

- Learning is an active process in which the learner uses sensory input and constructs meaning out of it. (Hein 1991)
- A person's knowledge, ways of categorizing and coordinating behaviour, is dynamically reconfigured and cannot be seen as things existing independently of an interaction or environment. (Clancey 1996)
- Human beings have evolved to be able to carry out several separate forms of analysis (Gardner 1987)

By this learning is stimulated when a person can be active in a suitable environment using the analytic intelligence the person favours. It is also possible to study visitor's actions and observe learning behaviour.

- Exhibits are designed to isolate a concept from the complex world so that a visitor has a chance to poke at, fiddle with and thereby begin to comprehend it. (Semper 1999)
- Breakthrough behaviours, engaged and involved, testing variables, making comparisons, using information gained from activity (Barriault 1999)

The introduction stated that exhibits could be educational if they have the right characteristics. Under the heading, "Results" some exhibits was studied and found that it is possible to give exhibits the right characteristics even if the topic is from a public authority. For example some of the characteristics for holding power Sandifier (2003) gives are;

Stimulates the senses

- *The exhibit emits sounds when used*
- *The exhibit has one or more viable parts that move when the exhibit is in use*
- *The exhibit has lights that blink of flash when the exhibit is in use*

These qualities say nothing about the topic so the exhibit could display physics as well as social insurance or sorting waste in households. An exhibit in the thesis that has some of the characteristics is the doll for the National Social Insurance Board, Figure 12 .

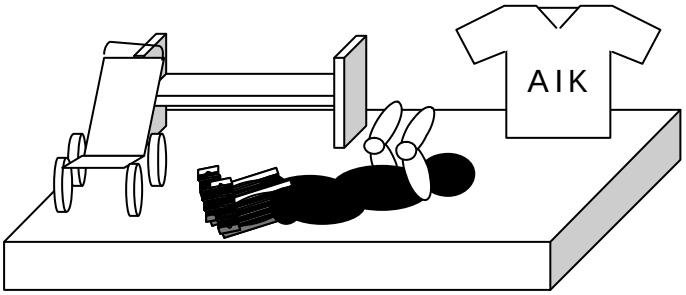


Figure 12 Paternal leave, exhibit example; play with doll that makes sounds as a normal baby, laughter and cry depending on handling.

5.3 The use of experience

The experience of this thesis gives a possibility to say that exhibitions can be a complement in the work of information. A good example is The Swedish road administration that has already adopted this working method. Interactive exhibitions can be educational and thereby by a very effective complement in the use of informing the public. To use the settings of museums and science centres will mean that the exhibition is seen by several people depending on the number of visitors to the museum.

There are several well-defined projects within the public authorities, some of the topics are described under the heading "Observations". However, the topic of these might not be big enough to fill a complete exhibition. Some of these examples can be highlighted with a single exhibit for example the dangers of electricity in the wires by rail roads. One way of displaying the topics could be by having them displayed in an exhibition of a common theme. If designed right, the exhibits can be complementary and well suited in another exhibition. Continuing with the rail road the exhibit could be a part of an exhibitions covering for example physics, energy or transportation. The key thing is to use exhibits to highlight the specific information from a public authority.

5.3.1 Moving exhibits to the visitors

In museums and science centres the observations indicates that temporary exhibitions ought to cover an area of 200-300 m^2 and be planned years in advance. The specific information might not fulfil these features but can instead be made even smaller in order to be placed where people wait, pass or visit for other reasons.

Temporary exhibitions in the museum and science centre settings are the size of a normal house and on display for 4-5 months at each place and the display at museums is planned for several years. The examples of exhibits in this thesis are all working individually about one specific problem and are small compared to a house. That is if these were made into an exhibition they might not be enough to fill the area for temporary exhibits in a museum or science centre in neither time nor space. Looking at who the exhibits are made for, the exemplified exhibits have their given target group but the museums and science centres have the general public as visitors. These example exhibits instead could move to the visitors, the place to display the exhibitions could take new roads. The exhibitions mentioned as examples under the heading "Internet Search" have already moved from the museums.

Brochures

If we take a closer look at brochures, they are used to give some essential information in short time. Brochures are often (at least by the author) taken, read, put in a pocket and later thrown away. Exhibits on the other hand are often (at least by the author) played with, some knowledge is gained and the knowledge later might be used.

That is once you read the brochure there is no need of it since the knowledge is adapted. The remaining need might be for the address in order to learn more, but that information is in a business card.

Exhibits can be used as a complement to a brochure, it can display and give information about a topic in short time and be highly educational. The exhibit can be placed besides brochures and work with its attracting powers to inspire to further learning. In that way what the visitor has to take along is a business card, easy to keep and the happy memory of an exhibit experience. So brochures as a means to educate can be complemented with interactive exhibits.

Exhibitions at schools

Without any research one assumption is that school children spend some time in school waiting for next class and so on. They spend time inside sitting, walking, talking, and so on. This time could be used to explore interactive exhibits. The idea is to make a couple of interactive exhibits suitable for this setting and make an organisation of distribution. Each exhibit is placed in a different school and after a while, they change places. The theme of exhibits can be in different topics following the curriculum and important information from public authorities.

A similar conclusion, that exhibitions can be suitable in school environment have been made by Blom (2003). She has studied an exhibition made by Riksutställningar that has been on display at different schools. Riksutställningar can give the school access to material that would be hard for school to obtain, and also give a view on topics that is not looked in traditional school thinking.

Exhibitions it waiting rooms

Every day many people are waiting at different places like train stations, dentist, public authorities and so on. This time could be used to explore interactive exhibits. As for schools, the idea is to make a couple of interactive exhibitions suitable for this setting and make an organisation of distribution. The exhibits move between the waiting areas at an interval of for en example two or three weeks time. Information from public authorities is a theme of exhibits suitable in these settings. This method can be used within an organisation. In the case of information about dental care to nursing staff an exhibit that is on display at different coffee rooms can be of use.

Maintenance

The examples above suggest exhibits in a public area with no guides or staff in the area. This gives special demand on the design. For instance no loose parts that can be taken away, durability, simple and intuitive use, no or very little needs of instructions and they should be hard to steal.

The examples also indicate that there need to be an organisation responsible for the exhibits administrating the logistics and booking when and where the exhibits should be on display. It could be done by a museum or a separate company.

5.4 Conclusions

Exhibitions are found to be educational specially if designed right with appropriate characteristics. The thesis also finds that exhibitions can be made out of topics from public actors and gives examples by planning some exhibits. Public actors are also found using exhibitions in the work of informing the public.

The recommendations of the thesis are to increase the use of exhibits and exhibitions by public actors in their work of informing the public. One way of using exhibits could be by placing the exhibits were people are, schools, waiting rooms, public areas. The idea of using exhibits in school is the same recommendation as Blom (2003) gives after studying exhibits in schools. These exhibits could complement brochures giving a short introduction and facts about a topic. By using interactive exhibit as a complement to brochures it is possible to say that the authority is giving knowledge instead of paper to the public.

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Appendices

Appendix 1

A.1.1 Information and questions at interviews

The information below was not given in exactly these words, it was done in Swedish and there were only small changes between the interviews.

This is an interview within a thesis on master level done at Högskolan Dalarna in the course "Master of Science Communication". The subject is "Public authorities and science centre, can public authorities use interactive exhibitions in order to spread their information."

The thesis contains practical work at Framtidsmuseet Borlänge, a survey to 80 museums and interviews.

Notes will be taken during the interviews and a summary will be included as appendix in the public thesis. There will probably not be time for the interviewees to read and comment the summaries before the thesis is made public.

The questions asked at every interview.

- What do you inform about?
- Who is your target group?
- What methods are used?
- Are you obliged to inform?
- Is there any evaluation if the information has reached the target group?

Examples of other questions

- Would interactive exhibitions be of any interest?
- Can you choose a specific area that we can discuss?

Appendix 2

A.2.1 Address to museum and science centres in survey

Table 9 Museums and science centres that were sent a survey.

Biologiska museet, Stockholm	Bohusläns museum, Uddevalla
Centrum för arbetarhistoria, Landskrona	Dalarnas Museum, Falun
Dalénium, Stenstorp	Dunkers Kulturhus, Helsingborg
Erik E Karlsons Radio och Teknikmuseum, Jönköping	Etnografiska muséet, Stockholm
Falun Future Tech, Falun	Fenomenalen, Visby
Fenomenmagasinet, Linköping	Fjärilshuset, Solna
Göteborgs Maritima Centrum, Göteborg	Göteborgs Naturhistoriska museum, Göteborg
Helsingborgs museum, Helsingborg	Hälsinglands Museum, Hudiksvall
Idrottsmuseet i Malmö, Malmö	Industrimuseum Gnosjö, Gnosjö
Innovatum, Trollhättan	Internationella barnkonstmuseet, Vårby
Jamtli Historieland, Östersund	Jönköpings läns museum, Jönköping
Kreativum, Karlshamn	Kulturcentrum i Ronneby, Ronnyby
Kungl. Myntkabinettet - Sveriges Ekonomiska Museum, Stockholm	Landskrona Museum, Landskrona
Länsmuseet Halmstad, Halmstad	Länsmuseet i Varberg, Varberg
Länsmuseet på Gotland, Visby	Länsmuseet Västernorrland, Härnösand
Malmö Museer, Malmö	Molekylverkstan, Stenungsund
Motorfabriken Pythagoras, Norrtälje	Museum Gustavianum, Uppsala
Nationalmuseum, Stockholm	Nationalparkernas Hus,, Haninge
Naturhistoriska Museet, Göteborg	Naturhistoriska riksmuseet, Stockholm
Navet, Borås	Nordiska museet, Stockholm
Norrbottens museum, Luleå	Norrköpings stadsmuseum, Norrköping
Observatoriemuseet, Stockholm	Regionmuseet Kristianstad, Kristianstad
Regionmuseum Västra Götaland, Vänersborg	Riksidrottsmuseum, Stockholm
Röhsska museet, Göteborg	Sjöhistoriska museet, Stockholm
Skansen, Stockholm	Skellefteå museum, Skellefteå
Spårvägsmuseet, Stockholm	Statens Historiska Museum, Stockholm
Stockholms läns museum, Stockholm	Stockholms stadsmuseum, Stockholm
Sundbybergs Museum & Arkiv, Sundbyberg	Sveriges Järnvägsmuseum, Gävle
Technichus, Härnösand	Teknikens hus, Luleå
Teknikens Land, Olofström	Tekniska museet, Stockholm
Teknorama, Stockholm	Textilmuseet, Borås
Tom Tits Experiment, Södertälje	Universeum, Göteborg
Upplandsmuseet, Uppsala	Upptech, Jönköping
Vasamuseet, Stockholm	Vin & Sprithistoriska Museet, Stockholm
Värmlands Museum, Karlstad	Västerbottens museum, Umeå
Västerås konstmuseum, Västerås	Västerås skolmuseum, Västerås
Västmanlands Läns Museum, Västerås	XL-Labbet, Kalmar
Xperimenthuset, Växsjö	Äpplets hus i Kivik, Kivik
Örebro läns museum, Örebro	Örnsköldsviks museum, Örnsköldsvik
Landskrona Museum, Landskrona	Sundsvalls museum, Sundsvall

Appendix 3
A.3.1 The survey

Har ni en utställning där någon offentlig verksamhet visar ett ämne?

Jag läser en Magisterexamen i Vetenskapskommunikation vid högskolan Dalarna. Nu arbetar jag med min D-uppsats och undersöker möjligheterna för offentlig verksamhet att utnyttja museer och science center för att nå ut med sin information. För att skriva rapporten har jag en del fältarbete på Framtidsmuseet i Borlänge, jag gör intervjuer med ett antal offentliga aktörer i Borlänge och den här enkätundersökningen. Enkätundersökningen vänder sig till ca 100 museer och science center i Sverige.

Vad frågar jag om?
Det finns exempel på privata företag som finansierar utställningar som till exempel Electrolux och Ericsson. Valet av ämne till en sådan utställning styrs relativt mycket av finansiären. Jag undrar om ni haft liknande samarbete med någon offentlig myndighet eller verk. Till exempel om Hem och Skola initierat en utställning om minska mobbningen eller Vägverket om trafiksäkerhet.

Jag skickar alltså denna enkät för att få en bild av dagens samarbete mellan offentliga aktörer och museivärlden. Hoppas du vill ta dig tid och svara på mina frågor

Har du några frågor går det bra att
e-posta på petter@transportide.se
ringa 070-358 27 26

Stort tack på förhand

Petter Börjesson

I vilken omfattning har ni arbetat med offentlig aktör efter år 2000, kryssa i lämpligt antal rutor.

? De beställde en utställning ? Fler än en gång Vilken/vilka? _____

? På vårt initiativ gjordes utställning av deras verksamhet ? Fler än en gång Vilken/vilka? _____

? Utställningen finansierades av en offentlig aktör Vilken/vilka?_____

? Representanter sitter i vår styrelse Vilken/vilka?_____

? Offentliga aktör(er) finansierar verksamheten, initierar inte utställningar Vilken/vilka?_____

? Annan kommentar _____

? Inget samarbete

Bakgrund

Inom vilken kategori är er verksamhet? Rangordna med 1 som största delen.

? Län/regions museum
? Kultur
? Naturvetenskap och teknik
? Annan, _____

Vilka är era största besöksgrupper? rangordna med 1 som största gruppen.

? Grundskoleelever
? Allmänhet
? Turister (svenska och utländska)
? andra _____

Hur många besökare har ni per år? ca:_____

Hur stor utställningsyta har ni? Permanent ca:_____m2

Tillfälliga ca:_____m2

Vem påverkar mest ämnet till en ny utställning? Rangordna med 1 som påverkar mest.

? Egna personalen
? Samarbetspartners
? Finansiärer
? Allmänheten
? Andra _____

Jag vill:

? ta del av resultatet av enkätundersökningen och rapporten
? ställa upp och svara på eventuella följdfrågor.

Namn _____

e-post _____

A.3.1 Complementary question

Email sent out with complementary question to follow up evaluation of existing exhibits.

Hej
Återigen tack för er tid med att besvara mina frågor. Som jag förstod det har ni haft spännande projekt med att skapa utställningar med andra aktörer.

Utifrån enkäten fick jag några fler frågor jag funderade på som jag vill ställa till dig och hoppas du har tid att hjälpa mig lite till.
Jag har försökt att nå dig per telefon men jag inser att det kanske är enklast för oss båda ett kommunicera via mejl.

- Jag undrar, finns det en skriftlig utvärdering på någon av utställningarna som jag kan ta del av och använda i min uppsats?

Tack på förhand
/Petter

Paraphrase in English

Hi

Once again thank you for your time.

As I understand you have had some exhibitions with topics from public authorities. Is there any written evaluation of these exhibits that I can use in my work.

/Petter

Appendix 4

A.4.1 Notes taken during interviews with public authorities.

Arm i arm, telephone, 2004-05-05

Information, why? What? To whom?

Information within a project started by the government with the aim to strengthen the volunteer work of young people against racism, homophobia and discrimination. It is done by giving economic resources to project in the area done by different organisations. Educate 100 young ambassadors against racism and so on. And a writing contest for Swedish school children, age 16-20 years.

The project is now in a phase of spreading the experience from the different projects.

How, follow up

Most of the information is on the homepage www.armiarm.nu (in Swedish) and at the different organisations.

Banverket, department of school information, telephone, 2004-04-28

Information, why? What? To whom?

To inform about the dangers around railroad tracks and some information about the environmental benefits by using train.

The activities in Dalarna are new, started in August 2003. The target group is mainly school children living close to railway tracks.

How, follow up

The work is done by visiting classes and informing them during 50 minutes, includes 15 min movie.

Also there is advertising in local media initiated by train drivers who sees people crossing the rail.

Comments

Project in progress increasing girl's technical interest

Borlänge Energy, department of information, visit, 2004-05-04

Information, why? What? To whom?

To school children in order to increase technical interest which in long term leads to the access to competent staff.

To citizens in Borlänge to gain understanding of the company and to keep and increase good customer relations.

Information about temporary shut down, taxes and so on.

How, follow up

School children are met through "ungdomsrådet" a group with high school pupils that are working as a referent group, school information and likewise in co-operation with Borlänge Energy. "ungdomsrådet" produces their own newspaper that is distributed to all schools.

Eight year old pupils are invited to the "energy hunt". For a day with interactive and theatre all concerning energy and environment. The focus is on co-operation, joy and interactivity.

University students are invited to practice and internship.

Borlänge Energy inform through internet, own newspaper, advertising, open house.

No follow up specific for pupils but thorough market analysis on Borlänge Energy.

Comments

Much work is done to create an positive and correct picture of Borlänge Energi. It is balance on a fine line because Borlänge Energi is working both with public service and as a profit making company.

A project in progress is "house for dummies". A booklet describing where responsibilities starts and end between the house owner and Borlänge Energi.

Borlänge Energy, department of waste treatment, visit, 2004-05-04

Information, why? What? To whom?

Swedish municipalities have responsibilities to collect and handle waste from the society. There is a need to inform the public about how to sort waste. The target group is households in Borlänge.

How, follow up

Today there is use on internet, brochures and text at city dump. There is no follow up regarding information to household more than regular analysis of the material at the city dump.

Comments

There is a project just started to find suitable symbols to use instead of text at the city dump.

Borlänge municipality, visit, 2004-04-28

Information, why? What? To whom?

The municipality of Borlänge shall inform citizens about political decisions that may affect the public. The municipality should also keep the public informed about the work of the different departments.

How, follow up

The information is mainly given through newspapers and the web. One person in the organisation is responsible for all contacts with the media. The different department have their own representatives.

Comments

The municipality stands in front of a major work of changing peoples attitude of Borlänge. From negative to positive in order to increase the immigration to the city and thereby the population. The information shall be concentrated around some key issues; constant progress, a good life together, the feeling of Dalarna.

Consumer guide, Borlänge and Gagnef, telephone, 2004-05-15

Information, why? What? To whom?

The information is based upon Konsumentverkets seven consumers goals together with local goals. The most important information is the importance of budget, consumers rights and how not to be trapped in loans.

How, follow up

Most information is given orally through telephone, some brochures and lectures. Constant follow up on the work.

Comments

There is a great need for information to the public but little resources. Find the making of an exhibition very interesting.

County administration, telephone, 2004-05-11

Information, why? What? To whom?

The County administration is obliged to inform the public about their activities. The work of the County administration is broad so the target group can be a specific market or general public. Much of the information is connected to regulations and laws. Within the work of the County administration there are exhibitions build. For example there is an exhibition close to the natural park Fulufjället.

How, follow up

Most of the information is on the homepage, telephone, brochures, newspapers and small exhibits.

There is no direct follow up of the work with information.

County council department of national health, telephone, 2004-05-06

Information, why? What? To whom?

Landstinget is obliged to inform the public about their activities. Inform the public about their service, right and obligations and the institute of culture.

There is constant activity of different projects. A recent project is a cookery book to children produced in co-operations with dental care and a chain of shops.

How, follow up

Most of the information is on the homepage and also telephone and the traditional public media. The methods in the project are adapted to the projects, e.g. a cookery book.

There is a follow up on the information activities, both the ongoing work and the projects.

Municipal office for sustainable development, Borlänge, telephone, 2004-05-15

Information, why? What? To whom?

Information about things citizens can do to add to sustainable society. Also city planning and equal rights. The target group is people in Borlänge.

How, follow up

Most information is given in different projects that varies, e g the KRAV-snake an activity that is on tour to schools in Borlänge or eleven families that tries to live without a car in order to change habits.

There is a continuous follow up on the different projects.

Comments

The strategy for all activities that are based on the user's level, uses all different organisations and there must be new knowledge gained by the users.

Wanted a dialogue with citizens in Borlänge discussing the planning of the city.

National dental service, Gagnef, telephone 2004-05-03

Information, why? What? To whom?

Work with information concerning dental care and the effects of food and habits. The target group is the public in Sweden. They are obliged to inform nursing staff of the elderly about dental hygiene.

How, follow up

Today they work with traditional "unplugged" media, brochures, and movie. There is no follow up of the given information. They visit schools and educate nursing staff on an annual basis.

Comments

An exhibition could be a good thing in complementing annual education.

Public health institute, telephone, 2004-05-15

The Public health institute works as a bank of knowledge and reference for municipalities and county councils. They do not actively work with disseminating information.

Roslagståg, telephone, 2004-06-09

Information, why? What? To whom?

Information concerning the dangers connected to railroad traffic.

Roslagståg is a company responsible for traffic on Roslagsbanan, a part of public transport in Stockholm. The traffic is ordered by Stockholm Lokaltrafik (SL) responsible for the public transport in the county. In contract Roslagståg is obliged to have personnel informing in schools. The personnel is educated by SL. The target group is school children.

How, follow up

The most information is given through lectures at schools but also during visits by schools at Roslagståg.

Comments

There is a trend of older people neglecting the dangers of railroads. Climbing fences and walking against red light. A campaign about the dangers is planed for late 2004. The target group in the campaign is grown ups.

Swedish Road Administration, 2004-04-15

Information, why? What? To whom?

The Swedish Road Administration have an obligation to inform about laws and regulations on traffic. They have their own activity to make changes in attitudes on traffic in order to minimise accidents and death in traffic. An example is the project named "Don't Drink and Drive". A project initiated by the increase of alcohol related accidents with young people. The target group is the people spending time in traffic

How, follow up

The work with information is structured and well established. The work is done with existing media like Internet, brochures, articles, lectures, interactive exhibitions, theatre and so on. When designing a new material a group of references from the special target group is used.

All activities is evaluated with interviews, surveys and so on, the experience is brought back into the organisation.

The National Social insurance Board, telephone, 2004-04-14

Information, why? What? To whom?

The National Social Insurance Board (RFV) is an authority over looking about 21 free social insurance offices in Sweden. RFV is often responsible for production and distribution of joint information.

RFV have an obligation to inform about their activities, in order for people know their rights and obligations.

The target group is grown ups in Sweden, about 5,6 million peoples.

How and evaluation.

The material is in most cases produced by RFV and they use all traditional methods like Internet, brochures, telephone and so on.

There is a regular evaluation of the activities.

Comments

A subject that might be of interest for an interactive exhibition is paternal leave. RFV has a mission to change attitudes towards fathers taking parental leave.

Appendix 5

A.5.1 Answers to survey

Table 10 Answers of survey, part 1 first eleven questions.

No:	I vilken omfattning har ni arbetat med offentlig aktör efter år 2000, kryssa i lämpligt antal rutor.						Inom vilken kategori är er verksamhet? Rangordna med 1 som största delen.				
	De beställde en utställning Fler än en gång Vilken/vilka?	**På vårt initiativ gjordes utställning av deras verksamhet Fler än en gång Vilken/vilka?**	**Utställningen finansierades av en offentlig aktör Vilken/vilka?**	**Representanter sitter i vår styrelse Vilken/vilka?**	**Offentliga aktör(er) finansierar verksamheten, initierar inte utställningar Vilken/vilka?**	**Annan kommentar**	**Inget samarbete**	**Län / regions museum**	**Kultur**	**Naturvetenskap och teknik**	**Annan**
1	-	-	-	Riksdagsmän, politiker, forskare, kulturvetare	Kulturdepartementet	-	-	-	-	1	-
2	-	-	-	ja	ja	-	-	-	-	1	-
3	-	-	-	-	-	-	1	-	-	-	stiftelse
4	Gotlands Energi aktiebolag	-	-	-	-	-	-	2	3	1	-
5	-	-	-	-	-	-	1	-	1	-	-
6	-	-	-	-	-	Delfinansiering med rabbater eller material	-	-	-	1	-
7	-	-	-	-	-	-	1	-	-	-	kommunalt
8	-	-	Grafikens hus, Svenska spel	-	-	-	-	1	2	-	-

9	-	Kommunlat dagcenter	-	-	-	-	-	-	1	-	-
19	-	Världsnaturfonden, artdatabanken	Skogsvårdsstyrelsen	-	Västra Götalandsregionen, Statens Kulturråd	-	-	-	-	1	-
11	-	-	-	-	Lanstinget.	Örebro museum	-	1	2	4	3 nytt idrottsmuseum
12	-	Amersham, bioteknik	-	-	-	Ambasader och inom universitetet	-	-	-	-	Universitetsmuseum
13	Elektrolux, IVA	Industriminne, kalkbana	IVA, IBM, ABB	Uppfinnarförening, staten	Staten	-	-	-	-	1	Nationellt
14	-	Diverse föreningar	-	Landshövding mfl	-	-	-	-	-	-	Sjähistoriskt
15	-	-	-	Landshövding mfl	-	Sponsring	-	-	-	-	Kulturhistoriskt
16	-	Kockums, ubåtsvapnet	statens fastighetsverk	Landshövding mfl	-	-	-	-	-	-	Marint
17	-	-	Region Haland	Politiker från kommunen	-	-	-	1	-	-	-
18	-	-	-	Scania KTH	-	-	-	-	2	1	-
19	Länets kommuner	Sportföreningar i länet	Riksbankens jubileumsfond	-	-	-	-	1	-	-	-
20	-	-	Riksidrottsförbundet, kyrkan	-	viss sponsring	-	-	1	-	-	-
21	Vägverket, Svenska kyrkan, länsstyrelsen	vanligtvis		ja	-	-	-	1	-	-	-
22	-	-	-	-	-	-	1	-	1	-	-
23	Ferruform	vägverket	-	-	många exempel	-	-	-	3	1	2

24	-	vägverket	vägverket	-	Region Blekinge, länsstyrelse	-	-	-	-	1	-
25	-	-	-	-	-	-	1	-	1	-	-
26	-	-	-	-	-	samarbete med många men inget privat företag	-	1	-	-	-
27	-	-	-	-	-	-	-	1	-	-	-
28	-	-	-	-	-	-	1	-	2	1	-
29	-	-	EU,Chalmers, Gtb Energi	Gtb Universitet, chalmers	Chalmers, göteborgsregionen, staten	-	-	-	-	1	-
30	vägverket	-	vägverket	-	Staden och regionen	-	-	-	-	1	Industri historia
31	-	-	-	-	ja	-	-	1	2	-	-
32	-	-	-	-	-	-	1	-	1	-	Arbetar historia
33		-	-	-	-	-	1	1	-	-	-
34	-	-	-	ja	ja	-	-	-	1	1	-
35	-	-	-	-	-	-	1	1	-	-	-
36	Stenungsunds utveckling, Bohusläns museum, Högskoleverket.	-	-	-	-	-	Information om petroliumindustrins produkter.	-	-	1	-
37	-	-	-	Naturvårdsverket, länsstyrelse sthlm, kommuner haninge tyresö	Naturvårdsverket	-	-	-	-	1	-

38	-	-	-	-	-	Samarbete med länsmuseum och finansierad av företagare.	-	-	-	-	-

Table 11 Answers of survey, part two last twelve questions.

No:	**Vilka är era största besöksgrupper? rangordna med 1 som största gruppen.**				**Hur många besökare har ni per år?**	**Hur stor utställningsyta har ni?**		**Vem påverkar mest ämnet till en ny utställning? Rangordna med 1 som påverkar mest.**				
	Grundskoleelever	**Allmänhet**	**Turister (svenska och utländska)**	**andra**	**-**	**Permanent**	**Tillfälliga**	**Egna personalen**	**Samarbetspartners**	**Finansiärer**	**Allmänheten**	**Andra**
1	4	1	3	2	720000	6500	1000	1	-	-	3	ämnets aktualitet
2	1	2	3	högskola	-	2000	-	1	2	-	-	LPO
3	-	1	-	-	23000	1200	150	2	-	-	1	Enkätundersöking från besökare
4	3	2	1	-	55000	300	400	2	3	4	5	Aktuella ämnen
5	1	2	3	-	25000	1800	480	1	2	5	3	4 Konstnärer, högskola
6	1	2	2	-	10000	700	-	1	2	-	-	2 läroplan
7	2	1	3	-	25000	445	150	1	-	-	-	2 föreningar

8	2	1	3	-	35000	-	-	1	2	-	4	3
9	2	1	4	3 dagcenter, särskola	65000	290	285	1	-	3	2 konstnärer	-
10	2	3	4	1	100000	-	-	1	2	3	4	-
11	2	1	3	-	125000	900	460	1	2	4	3	-
12	3	1	2	4 Studenter	43000	600	100	1	2	4	3	-
13	1	2	3	-	180000	8000	2000	2	1	4	3	-
14	2	1	3	-	47000	2400	500	2	1	4	3	-
15	3	2	1	-	789000	7000	-	2	1	4	3	-
16	3	1	2	-	65000	4000	-	2	1	4	3	-
17	3	2	1	4	150000	11000	300	1	4	3	2	-
18	1	2	3	konferens/event	35000	15000	-	1	-	3	2	-
19	2	1	3	-	150000	-	-	1	3	4	2	-
20	-	1	-	-	170000	1500	200	1	-	-	2	-
21	1	1	1	-	150000	-	-	2	-	-	1	-
22	2	1	3	-	82670	1500	250	1	3	2	-	-
23	1	2	3	-	170000	2000	300	3	1	2	-	-
24	3	1	2	-	45000	2000	150	1	2	3	-	-
25	2	1	3	-	180000	700	1300	1	2	-	-	-
26	2	1	3	-	230000	-	400	1	2	-	-	-
27	3	1	2	-	211000	-	400	1	2	-	-	-
28	1	2	3	-	30000	1500	200	1	2	-	-	-
29	-	1	-	-	500000	9600	300	-	1	-	-	-
30	-	-	-	familjer	50000	-	5000	1	-	-	-	-
31	-	-	-	-	50000	5000	500	1	-	-	-	-
32	-	1	-	-	1000	-	400	1	-	-	-	-
33	2	1	3	-	145000	700	300	1	-	-	-	-
34	2	3	1	-	67000	-	300	1	-	-	-	-

35	2	1	3	-	282349	1700	250	1	-	-	-	-
36	-	-	-	Barn med föräldrar	45000	250	50	1	-	-	-	-
37	1	-	-	-	25000	450	-	1	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-

Appendix 6

A.6.1 Background material for exhibition

Interview with a consumer guide, began with an introduction where the author described the aim of the interview.

> To gather information for the planning of an interactive exhibition. The discussion during the interview will give the material and ideas for an exhibition. The exhibition is not to teach everything in consumer rights. It should highlight the most important things to remember and stimulate the visitor to learn more.
>
> The exhibition should be built up by physical exhibits possible to interact with. It should be placed in areas where people are, wait or seek information. Three scenarios for the exhibition:
>
> 1. Exhibits that complement the guides work at schools that can be placed in schools some days/weeks before the visit of the guide. It should also be possible to use in a lecture or standing alone in a school or a public place.
> 2. Exhibit to be placed in public area like library or hospital.
> 3. Travelling exhibition of 150-200 m2 for Swedish museums.

The work of a guide is mainly guidance through telephone and personal meetings at the office with citizens. The rest of the time is spend giving information to schools and different groups within the society. During 2003 the most common errands were:

Bank/finance/reminding	9,8 %
Buying car	9,2 %
Fake invoices/internet	19,8 %
Electronic for use at home	8,4 %
Advertising	6,4 %
Living/repair homes	4,5 %

Remaining 41,9 % is divided in 21 different posts. Statistics is based on errands in Borlänge.

An errand is when a consumer has a complaint and the guide acts on it.

The causes of complaints are:

- Indistinct oral agreement
  - The work of a car repair or renovation in a home is more expensive than first estimated. Different opinion on what is agreed.
- Lack of knowledge in consumer law
  - When you can cancel a purchase. Guarantee. Benefits of keeping receipt
- Lack of knowledge, agreements and contracts
  - Small text that is not read. Apparently free offers that is not free. Oral agreement that is as binding as written.

The work of consumers guide is also to information about how to act as a consumer in order to contribute to a sustainable society by changing attitudes of consuming.

The material of the interview was transformed into three headings represent the subjects that should be present at an exhibition and a proposal for an exhibit.

Knowledge

As a consumer one should know what is right and obligations that are connected to a purchase. To be knowledgeable when making agreements and settlement. This is to avoid dispute and know what to ask. Importance of reading documents and writing down oral agreements.

Tip

Keep receipt, make complaint directly.

Consumer awareness

Importance of knowing what high interest means for monthly payment. Do I need this? Knowing what numbers mean, 2000 vs. 3900, 199kr/month = 2388kr/year.

Proposal for an exhibit

Consists of a frame, 30x30 cm and blocks of different sizes. Text defines the frame as 1000 kr/month and blocks representing different daily purchases e.g. a soda per day, sending five text messages with the mobile per day, or a cup of coffee.

The visitor places blocks in the frame and explore what is possible to do for 1000kr/month.