



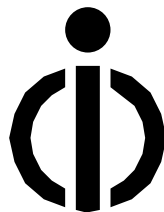
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Future Home Environments and Media Forms

Olle Torgny



CID
Centre for
User Oriented IT Design

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Future Home Environments and Media Forms (Framtida hemmiljöer och mediaformer)

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Abstract.....	5
Sammanfattning - Abstract in Swedish.....	6
Introduction.....	7
Purpose.....	7
Problem.....	8
Limitations.....	8
Method.....	8
The present situation.....	9
Initiatives from real estate and technology companies.....	9
New services and functions.....	10
The computer is changing character.....	10
Our social life around, and through, IT.....	11
The home.....	11
Media consumption and IT use.....	11
The role of IT in social activities.....	12
To socialise using IT.....	12
Furnishing.....	12
Early visions for IT in the home.....	14
H55.....	14
Italian visions.....	14
Ugo La Pietra.....	14
Early examples of using scenarios.....	15
IT in film and literature.....	18
Scenarios for social activities.....	18
Situation Scenarios – Method.....	18
Situation Scenarios.....	20
A mother reads a picture book to her child.....	23
A man tries out his friends computer.....	23
A married couple cooks from a recipe.....	24
A couple is assembling a piece of IKEA furniture.....	24
Two couples watch "Bingolotto" together.....	25
To foreigners meet in a bar, TV is on.....	25
Friends watching video.....	26
A bicycle team is celebrating in a pub.....	26
Two families on the beach, the radio is on.....	27
A family is having breakfast.....	27
Two couples have dinner together at home.....	28
Some friends have a glass of wine in the kitchen.....	28
A man and two women have coffee in a café.....	29
Two business colleges in a restaurant.....	29
A child is playing a computer game.....	30
A women is working in her home, on a computer.....	30
A girl is working out in front of the TV.....	31
A woman watches breakfast TV while having breakfast.....	31
A man is watching TV.....	32
A man is sunbathing in his garden, listening to his walkman.....	32
A man is listening to the radio while polishing his shoes.....	33
A man is cooking with the TV on.....	33
A man is building a shed, the radio is on.....	34
The radio is on in an empty apartment.....	35
A group of supporters cheering.....	36

Rave party.....	36
A woman running an amateur race.....	37
A boy and a girl making wooden toys.....	38
Two girls studying in the living room.....	38
A family is skiing.....	39
Two friends in a cinema.....	40
One man in a cinema.....	40
A man is having a coffee in a café.....	41
Two people are reading their morning paper, having breakfast.....	41
A man is packing his training bag.....	42
A man walks his dog.....	42
A man withdraws money from an ATM machine.....	43
A women starts the washing machine.....	43
Two people discussing over the phone.....	44
A salesman and a client discussing over a catalogue.....	44
Ten people are helping a couple moving.....	45
A stand-up comedian is performing.....	45
Experiences from the scenario study as a method.....	46
Furnishing structures.....	47
Conclusions.....	52
IT in the home and in social life.....	52
IT can support and encourage social activities.....	52
IT can enrich existing activities and products.....	52
IT can offer new contact surfaces.....	53
Three concepts.....	54
The Digital Surface - a "media table" for several applications.....	54
The Digital Breakfast - bar codes on groceries etc (enrich).....	55
"The White Stone" – a sensorial communication object.....	56
References	58

Abstract

As one of the projects within the research area "Electronic Worlds on Interactive Television", this project, "Future Home Environments and Media Forms" has been carried out on CID, Centre for User Oriented IT Design, at the Royal Institute of Technology, Stockholm.

The purpose has been to put new IT and media forms like for example interactive television into a social context, and by investigation today's social behaviour and media consumption explore the potential of socially oriented IT applications.

The project has been carried out mainly using different creative methods as for example brainstorming, and a structured method for generating and later illustrating different scenarios and situations has also been evaluated. The method offers a quick overview over qualitative problems and dynamic processes, but demands well formulated limits and criteria.

Many parts of this report has been made in order to let the reader compare different scenarios, situations and furnishing structures, from a personal point of view.

Certain patterns have shown in this material and they can be described as follows:

IT can:

- support and encourage social activities
- enrich existing activities and products
- offer new contact surfaces

Out of these conclusions, three product concepts have been formulated, out of which two will be developed further within the project "Smartifacts and Sensoreality": a system for adding information and entertainment value to everyday products and groceries using bar code technique and internet access, and a system for offering people "portable presence" and wordless communication, using sensors and wireless technology.

The concepts are presented as quicktime movies that are available over the internet.

(the "Smartifacts" section at <http://www.nada.kth.se/cid>)

Olle Torgny

Research Assistant, CID

Sammanfattning - Abstract in Swedish

Som ett delprojekt inom forskningsområdet "Elektroniska världar på interaktiv TV" har detta projekt, "Framtida hemmiljöer och mediaformer" genomförts på CID, Centrum för användarorienterad IT-design, på KTH.

Syftet har varit att sätta in nya IT- och mediaformer som exempelvis interaktiv TV i ett socialt sammanhang, att genom en undersökning av dagens sociala beteenden och mediekonsumtion undersöka förutsättningarna för socialt orienterade IT-former.

Projektet har genomförts till stor del med hjälp av olika kreativa metoder som t ex brainstorming, och en strukturerad metod för att generera och sedan illustrera olika scenarier har också prövats. Metoden ger snabb inblick i kvalitativa problem och dynamiska förlopp, men förutsätter att avgränsningar och kriterier är väl formulerade.

Stora delar av denna rapport är gjorda i syfte att läsaren själv ska kunna jämföra olika scenarier, användningssituationer och möbleringsstrukturer, kanske utifrån en egen frågeställning.

Vissa mönster har visat sig i materialet och de kan formuleras i följande punkter:

IT kan:

- stödja och uppmuntra sociala aktiviteter
- berika befintliga aktiviteter och produkter samt
- erbjuda nya kontaktytor

Utifrån detta har tre skissartade produktkoncept formulerats, varav två kommer att vidareutvecklas inom projektet "Smartifacts and Sensoreality", dels ett system för att med streckkodsteknik och internetkoppling göra vardagsvaror till bärare av större mängder information och underhållning än vad som idag ryms på förpackningar och i bruksanvisningar, i rapporten kallat "Digital Breakfast", dels ett system för att med trådlös kommunikation och sensorteknik skapa förutsättningar för ordlös närvaro mellan människor, i rapporten kallat "Den vita stenen". Koncepten presenteras i form av quicktimefilmer som finns tillgängliga på internet.

(se "Smartifacts" på <http://www.nada.kth.se/cid>)

Introduction

CID, Centre for User oriented IT Design, is a competence centre at KTH, the Royal Institute of Technology. CID is organised around a collaboration between trustees within the on one hand the Swedish Electronic-, Telecom- and Media Industry, user organisations, KTH and NUTEK (the National Board for Industrial and Technical Development), and on the other hand various institutions among the Swedish universities, with special focus on technical, behaviour scientific and artistic institutions.

The project "Future home environments and media forms" has been carried out at CID during the spring 1997 as a part of the research area Electronic worlds on interactive TV, which in turn has consisted of a number of projects where different aspects on user interfaces, remote controls and other means of interaction have been examined, focusing on the aspects that differentiates a system intended for entertainment from an ordinary computer system. In this perspective, it has been considered important to investigate the environment and the situation in which an interactive TV system is used, how furnishing, social activities and electronic equipment interact with each other, and it is in this context that this project has been carried out.

The project has been organised by Olle Torgny, research assistant in CID, together with Konrad Tollmar, research student KTH, and Lars Grahm, Konstfack (the National College of Art, Crafts and Design).

The scenario study and the development of product concepts has been carried out during June 1997, with help of Håkan Kåreby, industrial design student at Konstfack, and Jerker Blomqvist, architecture student at LTH, as a part of their internship at CID.

Purpose

The purpose of the project has been the following:

- to investigate new electronic media, like the World Wide Web and interactive television by means of possibilities and consequences on social life
- to investigate how a structured use of scenarios can work as a creative tool in a development project.

A major part of the material in this report, especially the visualisations, is made with the intention that the reader should be able to browse on his or her own, being able to compare situations and structures, get inspiration and make his or her own conclusions. In the same way the material can work as inspiration and a starting point for future research.

Problem

The following areas have been dealt with or taken into consideration:

- What different kinds of "IT" and media is being used today in people's everyday lives?
- What does the social life *around* IT look like today? What new situations of use, including the ordinary watching of television can we see, and what role does IT and different media have in these situations?
- What IT- and media forms support the interaction between people, and what disturbs the social activity?
- How can the present habits and use of IT and media give us an idea on how we in the future may be able to socialise *through* IT?
- How can new IT technology be practically integrated into the domestic environment and social activities?
- How is the home as concept and space affected by new information technology?
- How can a structured use of scenarios work as a creative tool?

Limitations

The project has dealt with how IT can work in the private and social life, with a focus on the home environment. The project concerns the Swedish cultural environment and normal family- or individual households. Socialising in public spaces, video conferencing, use of telephone, chats on the Internet etc have been studied briefly to induce new points of view on today's home environment and use of IT.

Focus has been on situations where:

- people use IT in their spare time, in their home environment
- social activities where IT is, or might be, present
- the conditions of private life, rather than technological opportunities.

No qualitative or quantitative research on peoples habits and behaviour has been done, but this material is based on the participants own experiences, information from literature, seminars etc. The project should therefore be considered as a test of a creative research method, and the results should be seen as an overview over the problem, a departure for the formulation of future research.

Method

The project is an attempt to use a creative, design-like, visual and qualitative method in a research context, and the project started with an ordinary search for information.

Theories on home architecture and new media have been studied in design literature and magazines. The international home- and office furniture fair in Milan was visited in April 1997 in order to see what physical solutions that are available today, for people who want to integrate IT in their home environment.

A seminar was organised in May 1997 and different aspects on the use of IT and social life was discussed. The seminar gave a rich material of aspects.

After the search of information, a brainstorming was carried out in order to find as many different aspects on the problem as possible. Based on this, a number of criteria were defined in order to achieve a maximal variation in the circa 40 scenarios later defined.

These scenarios, situations in the private life where IT or similar aids are present - or might be present - were also illustrated to make the situations more alive and realistic. Simplified pictograms were added, describing the structure of the situation. In all, the scenarios offer a potential to see similarities and differences between different situations of use.

In order to analyse the physical structure in home furnishing, and its relation to IT, a number of basic structures for furnishing around social activities.

Based on the collected material, three product concepts were formulated and visualised as examples of the three important roles that IT can play in private life. They are presented in three short films.

The present situation

Today, information technology is on the threshold to enter in various activities in our everyday lives. New electronic devices and services are developed, new forms of collaboration between technology- and content providers and distributors are negotiated in order to take full advantage of the potential of IT, while the World Wide Web is quickly growing.

In private life there is still rather strong borders between TV and similar entertainment and the new media reached mainly over the PC. One sign of how different platforms are growing together is the multimedia PCs with TV capabilities that have started to emerge, and that also differentiates from the standard grey office computers mainly through their black finish which helps to position the product together with other electronic home equipment.

Initiatives from real estate and technology companies

Several initiatives have been taken by industry and real estate companies in order to use IT technology to rationalise various functions in apartment buildings. One example of this is the "IT-Bo" project carried out by a real estate company, Svenska Bostäder, and Ericsson in some buildings in Vällingby outside Stockholm. (Monika Brydsten, during the seminar) In this case, technology is used to replace keys with smart cards, in a system for door locking, booking the washing room, notifying technical problems to the staff but also for internal information within the building. The system means reduced costs and practical gains for the landlord, but the value for the inhabitants has not yet been evaluated.

More flexible forms of working and working at home lead to an increased interest in the home and its potential.

"- The home may be the strategic platform for realising the good society: sustainable, environmentally friendly and individualised."

(Björn Nilsson, at the seminar)

In some cities in Sweden, whole neighbourhoods have been connected to the Internet, for example in Umeå, Helsingborg and Ängelholm. In many cases this intended to increase the value of the apartments.

New services and functions

The new technology means that services and functions are deliberated from the traditional physical systems. Earlier, the establishment of an enterprise was often associated with major investments in machinery, but today similar utilities to those produced as products in factories, can be achieved in much simpler ways - the focus is rather on concept development, presentation, programming etc.

The computer gets new functionality, new services are created using the Internet as the "infra structure" and it is no longer necessary that different functions in the home are controlled by dedicated apparatus - for example functions like electricity, heating and water might be controlled from a single terminal and you can even imagine that for example the electric connections in the house automatically detects the power consumption of a connected machine and automatically sets the fuses sensitivity, voltage etc.

This means that producers like Ericsson will take completely new roles where there is no longer so much about providing machines as to create new functions on a software level. In this context it becomes increasingly important to investigate what people actually think that they need - the useful things that may be created are more about creating solutions to perceived needs than about the producers ability to create powerful technology.

(Björn Nilsson, at the seminar)

Many products and solutions are made up from simplified ideas about peoples needs, that often are formulated from the producers own abilities.

The computer is changing character

Today computers can be found in many homes, while many people are using a computer in their work. You could say that the computer as a device in the home is changing, playing new roles which is also reflected in the exterior design. One obvious example is the design of multimedia computers with large speakers, that the office computers do not have. Another example is that multimedia computers for the home often are black, to give a home electronic impression, referring to the TV and stereo.

Basically the home computers are still designed in a similar way to the one user office computer. This also goes for the applications.



Our social life around, and through, IT

The home

In order to understand how IT can fit into our homes and our private lives, we first have to understand the significance of the home itself. Different cultures are differently open to the new contact surfaces but also intrusions of the private life that the information technology might imply.

In Sweden we are particularly interested in maintaining our homes, one important reason is that we do not meet people so much outside the home, like in bars and other places. We rather meet people in our home, and we spend a major part of our spare time in our home. Our partly harsh climate might be one explanation. There are of course differences between the cities and the countryside. (Daun, 1994)

Our relation to the people that visit us decides how far we let our visitors come into our home. Total strangers will often have to stop at the entrance and people who have known each other for a long time sometimes have not seen each others bedrooms.

(Lars Gram, at the seminar)

We also discriminate more between public and private, work and spare time, weekends and weekdays, than in other countries. (Daun, 1994)

The relationship between what is considered to be public and private has also changed over time. In the old days, you were never completely alone, whilst the public space we see today, partly was unavailable for people in general. (Stefan Junestrand at the seminar)

Modern man doesn't know his neighbour but might be well informed about what the president of the United States has done last week. TV provides access to the whole world and gives the private home a more "public" ambience, while meeting a person on the street feels more and more intimate.

Our need of serenity and personal space but also social contact with other people, means that IT technology implies both threats and opportunities. The home environment of today is controlled by traditions and attitudes, and may differ from the working place not be altered out of strictly practical reasons.

Media consumption and IT use

From the moment of waking up in the morning, until falling asleep in the evening, we consume media. All through the day we absorb different kinds of information that we are confronted with, driven by the question "what has happened?". When we see a news feature on TV in the evening, we have probably already heard it on the radio, read it in the morning- or evening newspaper, and seen it in earlier TV broadcasts. At the same time, these different versions of a certain occasion an important part of our perception of reality and our everyday feeling of security.

Research has shown that a certain media hardly can replace another one as different media have so different purposes. This goes also for the use of IT where different IT forms have different properties. The telephone is good for taking contact, telefax and email are good for confirming and sending a limited amount of information. Video conferences can, even though the technology is constantly refined, in no way replace the personal meeting that still is the best way to get acquainted, discuss, do business etc.

(Ulf Bjersér at the seminar)

The role of IT in social activities

Constantly, while another human being is present, we interact with this person in one way or the other.

In some cases we interact intensively and actively with the people around us, for example when discussing something, while some other activities rather are based on presence, for example when we go to the movies together with a friend. Even if we go to the movies alone, we feel the presence of other people and we interact with them in a subtle way.

As you can see in the scenarios below, social activities, consumption of media and use of IT, and combinations of all these, can occur at several different levels. We often do several things at the same time and our focus is not always fixed on the media or the activity that is the most apparent.

Many people have accused TV for destroying the family reunion and it is obvious that most people easily get strongly focused on a TV program – it is not easy to start up an discussion when there is something interesting on TV.

The IT solutions that we have access to today are based on either direct active communication between people, or pure media consumption, like watching a movie. The basic technology might just as well be used for communicating and getting experiences in a more subtle and sensitive way. Without taking direct contact, we could keep in touch with friends at a long distance, for example.

Even together with friends, IT might enrich the social life instead of, like TV of today, just providing passive entertainment.

To socialise using IT

At the seminar, Anna Schömer described different aspects on socialising using IT, in this case when people meet and discuss over the Internet.

The basic incentive for many of these activities is peoples attraction to, and interest in, other people, rather than the aesthetic or entertaining value of the media. ("What attracts people the most is other people" Whyte 1988)

The potential of technology also implies paradoxical problems. Many young people in Japan live isolated and meet with others only over the Internet. The telephone makes it possible for us to keep daily contact with friends living far away, while this actually makes it possible to live so far apart – in this way new channels for contact and socialising also can make us more isolated.

Swedes are considered to be shy (Daun 1994) and perhaps this is one reason that use of the Internet, especially in the unanimous forms like "chats", by time might be popular in Sweden, as these solutions make it possible to get in touch with other people without showing our own identity.

Furnishing

One question that comes up once in a while, is about how people will furnish their homes when socialising over video conference will become more common - will everyone keep a particularly proper corner of their home? This is one obvious example of how the interplay between public and private will affect us.

Of the IT equipment around us today, it is perhaps the TV that has had the strongest impact on our furnishing – when TV came the sitting room sofa was turned towards the TV set...

Since quite a long time, there is special office furniture for terminal work, and the computer is a natural component in the office environment. Today it becomes more and more common that people are supposed to work in their homes, and many people have a PC in their home. The furniture offered in these cases are often intended to hide the

equipment and to create a home working space that is as compact as possible. Most furniture for this purpose offered at the European market look neat but are often not very ergonomic. The most common drawback is that there is not enough room for your legs when seated at the workstation.

There are no solutions available today for letting several people gather around the computer, very much depending on the computers mostly being made for single users.

As interactive TV is being developed, perhaps in symbiosis with the Internet, while new hardware like larger and lighter screens (such as LCD) will get more common, completely new ways of furnishing will be needed.

For passive consumption of movies and news the TV sofa can still work well, but we can imagine a number of applications of the interactive TV media where a much more social situation of use will call for a completely different way of furnishing. For example, if instead of watching a one hour comedy show we pick the sketches one by one, we will have much more possibilities to talk in between. In this case the IT technology can stimulate the social activity.

A more active use of, for example, interactive TV might encourage a more "active" way of furnishing, either in the form of all new furnishing solutions or by moving the "TV activity" from the sitting room to the dining room or kitchen.

Here, metaphors play an important role, and one example of this is how the "bar kitchen" emerged in the seventies and eighties, where the "bar" metaphor not only suggests a new design of the kitchen but also implies a more informal "tone" and atmosphere, that goes well together with the new informal ways of socialising.



Early visions for IT in the home

H55

In 1955 the Swedish Organisation for Industrial Design, arranged an exhibition in Helsingborg, "H 55" that was the most radical interior design and architecture exhibition that had been done since the Stockholm exhibition in 1930, which in its turn had established functionalism in Sweden.

One of the most important features of the "H 55" was a more articulate presentation of the everyday sitting room, a room for daily socialising. Until then many homes had had a special room with all the best furniture, only used on Sundays and not very accessible for children. The future optimism was great and hereby the style of home decoration that would rule during the sixties, using light teak furniture etc, was established.

The most important novelty was though the TV set, that now had taken its place in the everyday sitting room. One might say that this was the first official presentation of the "single direction" oriented sitting room, with TV at one wall - a way of furnishing that soon would be found in most homes.

Italian visions

In 1972, a large exhibition was organised at the Museum of Modern Art in New York, under the title "Italy: The New Domestic Landscape". Several of Italy's most renowned architects and designers participated and the purpose was to show a new vision of the home. Those in charge of the exhibition, had seen how the traditional home with a fireplace in the middle gradually had been developed and reinforced with new technology, thought it had never been questioned or re-evaluated. The intentions behind the exhibition wanted to show how new technology and a new situation in society would initiate completely new plans and interior designs.

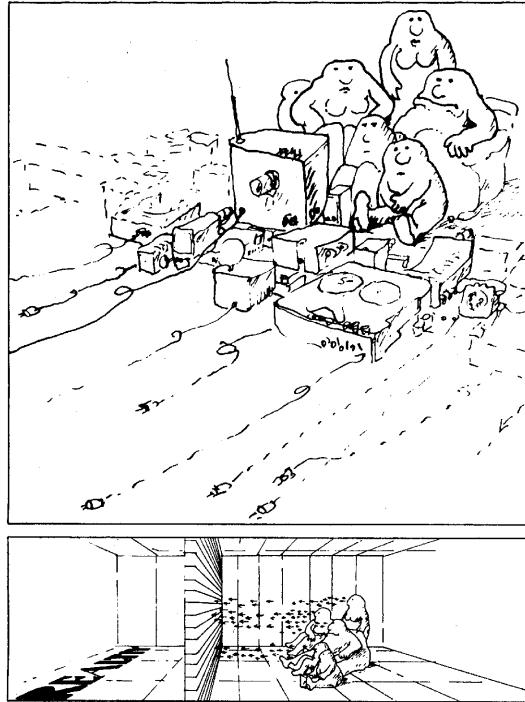
The exhibition followed the situation of its time, with a re-evaluation of established structures and conventions. Many wanted to turn away from the material culture of consumption, while several of the contributions were clearly modernistic, for example representing "living machines" with obvious references to Le Corbusier and others.

Ugo La Pietra

One of the most important visionary people was Ugo La Pietra who wanted to re-evaluate many of the common elements in the home and take advantage of the potential of new technology. La Pietra turned away from the role of everyday objects as status symbols and the in his eyes fetishistic view of objects as messages.

La Pietra discussed how the new technology made it possible to receive information from all over the world, in the home, and showed criticism to the fact that this information in most cases have to pass some kind of filter or editing before reaching us. He was also sceptical to the one way communication of TV, radio and similar media, but differently to many contemporary, and later, media critics La Pietra also saw the possibilities in technology.

La Pietra wanted to create solutions that expressed peoples lust for using information and to communicate, while he wanted to break down the presence of the different machines and at the same time solve the barrier between people and reality.



Ugo La Pietra: passive, one way consumption of media, separating people from reality. (Abitare no 8 1972)



(Ill. Olle Torgny)

In an all new type of home environment, La Pietra saw how people would be able to receive, process and send information and that this would give the home "an inevitable role in the development of the organised society".

Early examples of using scenarios

Several other interesting concepts and visions were shown at "Italy: The New Domestic Landscape". Mario Bellini presented a car concept, "kar-a-sutra", where a car in the shape of a room on wheels with flexible interior, acts like a platform for a number of activities.



WHILE ON THE ROAD, ONE CAN SLEEP, MEDITATE
ON INSIDE AND OUTSIDE, LOOKING AND NOT SEE
OR LOOK IN THE EYES SHE WHO DRIVES, DEPRIVED
OF THESE IMAGINARY LIBERTIES



HOW MUCH ROOM FOR DREAMS... A FLYING HAREN..
A GRANDPIANO FOR ITINERANT CONCERTS....
BUT NOW IT'S ALL EMPTY, TWO HUNDREDS
CUBIC FEET OF WORKSPACE.

Mario Bellini: "kar-a-sutra" (I Protagonisti del Design Italiano, CD ROM)

The concept deals with the relationship between living and travelling, the car as a territory and as a basis for the modern, western culture, and might also have inspired to new mini bus versions of the car in the nineties.

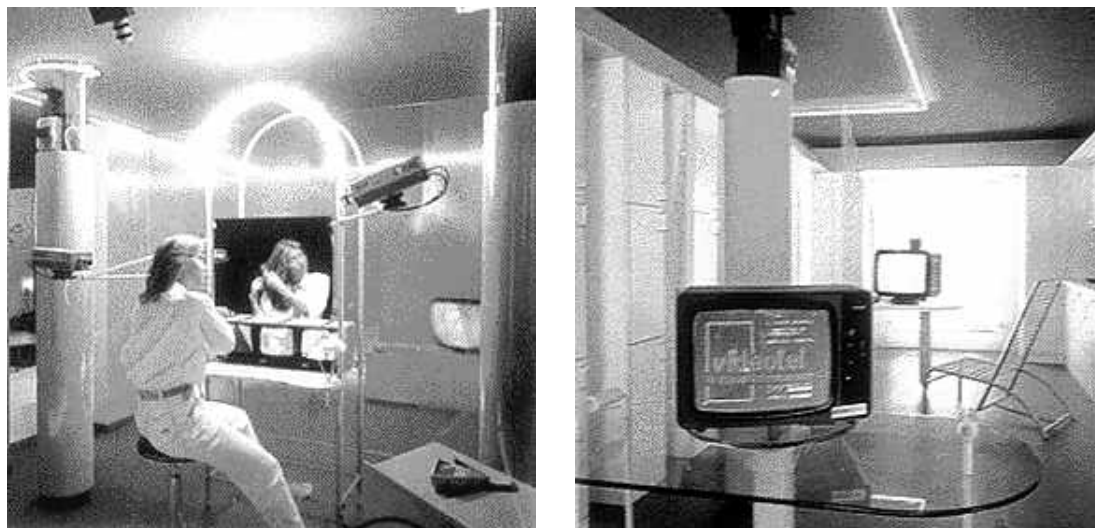
But this is not the reason that the concept of Bellini is mentioned in this context, but because it is an interesting example of how environments can be designed out of social situations and needs using a visual scenario technique. Within the car space, Bellini suggests a number of poetically formulated scenarios, that have less to do with transport and travelling. They are rather an interesting overview of social situations, in several cases clearly biased by the social values of the actual period, where for example the furnishing – in case there even are any furniture – is made to suit the social situation, instead of people adapting to a certain set of furniture.

This scenario based way of working means a different view on living, that can result in other home designs that is more based on peoples needs and behaviour rather than the during the 20th century so dominant way of looking at the home as a set of functions and the modernistic architecture where every room is designed for a certain function: eating, sleeping etc. (Lars Gramm at the seminar)

Through the years, a number of new visions have been presented, especially at the Milanese Triennial, where "state of the art" in arts, technology and society is being shown every three years. In many cases these suggestions are more connected to the technology than to the social revolution in 1972.

In one exhibition, at the time of the Milan Furniture Fair in 1982, Ugo La Pietra showed the following vision of "the telematic home" – "La Casa Telematica", where TV and different kinds of communication equipment have been integrated in different rooms and activities in the home. In contrast to his concepts from 1972, where objects should have a subdominant role, here the different spaces are loaded with machines.

In all possible situations, people are supposed to watch TV or use video conference. Variations on text based IT is also starting to emerge like in this case, the "Videotel". The use of "Videotel" is not integrated in some kind of activity, but is present as an image on a TV on a table.



Ugo La Pietra: "La Casa Telematica", Milan 1982

Also Denis Santachiara has through the years shown a number of concepts for the use of IT in the home. One example is "Ines", a communication robot suggesting other ways of interaction instead of computer/keyboard or TV/remote control.



Denis Santachiara: "Ines, La Casa Terminale", 1986 (I Protagonisti del Design Italiano, CD ROM)

IT in film and literature

Visions of IT use and telecommunication has been described many times in movies and literature.

Several science fiction novels have included scenarios for how the state might use IT to watch over people, even through video cameras in every home. Karin Boyes "Kalloccain", Ray Bradburys "Fahrenheit 451" and George Orwells "1984" are examples of this phenomena. The earliest visions for IT in the home were apparently quite threatening, and in general they deal with the break of private integrity.

In recent times, more positive ideas on how IT can create experiences and communication have been presented in books like William Gibsons "Neuromancer", where people communicate through personal computers and virtual worlds. Films like "Total Recall", "Robocop" and "Terminator" show examples of an IT technology that definitely has taken a position not only in the environment but also as a part of human behaviour. These movies are today typical examples of the confusion of the reality concept that IT in some cases generates.

One clear sign of the time is how the email and Internet technology is woven into the script of movies like "Mission Impossible" and "The Saint".

The different characterisations of IT technology in film and literature show how the attitudes to computers have changed over the years. It is also clear how they have affected the general attitude to IT, where computers and systems is something threatening.

Scenarios for social activities

When using computers and similar interfaces, the user is often focused on interacting with the system and fairly uninterested in things happening in around him or her. When using for example interactive TV or other entertainment oriented kinds of IT, such as CD-ROMs, this might just as well occur in a social context, when several person want to interact with the system at the same time. This imposes completely new demands on the user interface of the system. Therefore, an important purpose of this project has been to investigate the transitions between interaction with a system, and social activities with other people. As a tool for this study, a structured scenario technique has been used and evaluated.

Written scenarios are today an established method for defining the conditions for different IT solutions. In these cases scenarios are normally written brief stories.

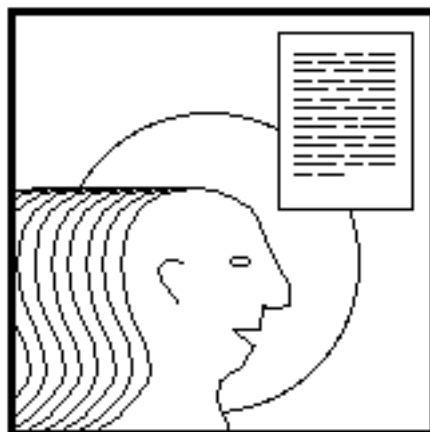
The advantage with scenarios in relation to other methods for analysis and concept development is that they describe dynamic processes and that they put the product into a dynamic context.

Situation Scenarios – Method

In this project a prototype for a partly new kind of scenario technique has been used. By systematically generating a number of scenarios/situations, based on a number of set criteria, and then visualising the scenarios, a large number of aspects can quickly be available.

The technique is interesting in the sense that it offers a way of working in a structured way with qualitative aspects that cannot be quantified.

Usually, scenarios are often used for putting the use of the product (or system) in the middle of a chain of situations – the user just did one thing, is on his way to do another thing and so on. In this case, the scenarios in general describe momentary situations, where the dynamic rather lies in the presence of other people, activities or media.



(Ill. Olle Torgny)

Some 40 scenarios have been defined out of three levels of social activity (active socialising, personal activity and presence) and three levels of involvement in the media (interactive, interested and passive), in case there is some kind of media present, of course. They have been visualised as illustrations and as little pictograms intended to show the basic structure of the situation.



Circle stands for human being, arrows show the difference between "consumption" and "interaction". Triangle stands for activity – to distinguish the cases where focus is on another activity than the one offered by the present media, which in turn is symbolised by a square. The scenarios have in this publication been arranged in a certain order so that the reader easily can browse from one scenario to the other, and by himself compare differences and similarities. This means that the scenarios are just as much intended for the reader as for the analysis carried out by the project team.

A number of situations without any media present have also been suggested in order to study situations that in a transferred sense might generate new ideas for IT and IT use.

It is important to point out that the method has been used for generating different aspects on the technology, rather than trying to simulate a sociological study.

Situation Scenarios

Active socialising – interaction with media or object

Examples on how IT use together with social activities can take place today. Some of the examples do not involve IT, but they describe situations where IT might be a component instead of today's cookbook, instruction manual etc.

Bingolotto (a Swedish lotto program) offers a scenario for a social activity in a similar way that interactive TV might do.

- A mother reads a picture book to her child (p. 23)
- A man tries out his friends computer (p. 23)
- A married couple cooks from a recipe (p. 24)
- A couple is assembling a piece of IKEA furniture (p. 24)
- Two couples watch "Bingolotto" together (p. 25)

Active socialising – passive or interested media consumption

In some situations there is a media like TV or radio present, without being in focus.

- To foreigners meet in a bar, TV is on (p. 25)
- Friends watching video (p. 26)
- A bicycle team is celebrating in a pub (p. 26)
- Two families on the beach, the radio is on (p. 27)

Active socialising – no media but a special situation

Some social situations of today don't involve a media, but they have a structure that could be supported by media of some kind, and they also say something about how IT could help to create a certain situation or atmosphere.

- A family is having breakfast (p. 27)
- Two couples have dinner together at home (p. 28)
- Some friends have a glass of wine in the kitchen (p. 28)
- A man and two women have coffee in a café (p. 29)
- Two business colleges in a restaurant (p. 29)

Personal activity – interaction with media or object

Perhaps the most studied interaction form, a human being and a computer or similar. Someone who is exercising to a workout TV program can in one sense be considered interacting with the TV programme as his or her behaviour is so closely related to the action of the TV show. It is also a more active form of TV consumption than ordinary TV watching.

- A child is playing a computer game (p. 30)
- A women is working in her home, on a computer. (p. 30)
- A girl is working out in front of the TV (p. 31)

Personal activity – interested media consumption

Consumption of TV and radio is traditionally considered to be something passive and in many cases it is also very much about being "served".

On the other hand, in some situations we can be focused on what is happening on for example TV, while it visually seems like we are having breakfast or polishing shoes.

- A woman watches breakfast TV while having breakfast (p. 31)
- A man is watching TV (p. 32)
- A man is sunbathing in his garden, listening to his walkman (p. 32)
- A man is listening to the radio while polishing his shoes (p. 33)

Personal activity – passive media consumption

There are situations where we have the TV or the radio on as "company" while we are doing something else. If someone turns off the TV in such a situation it is not sure that we can tell what program that was on.

- A man is cooking with the TV on (p. 33)
- A man is building a shed, the radio is on (p. 34)

Presence

This scenario was originally designed as an extreme reference, but at a closer look it is not uncommon that people leave for example the radio on, either to give the impression that someone is at home, or to give an impression of presence when they get home.

- The radio is on in an empty apartment (p. 35)

The border between presence and active socialising – ambient interaction

Without being in direct conversation or interaction with another person, in these situations you are still involved in some kind of social activity. An example of what different kinds of social activities one could imagine.

- A group of supporters cheering (p. 36)
- Rave party (p. 36)
- A woman running an amateur race (p. 37)

The border between presence and active socialising – focus on an activity

Even fairly organised and intimate kinds of social activity can be more based on presence than on active social interaction. It is nicer to do a certain activity at the same place, and at the same time, as one or several other people instead of doing it by yourself.

- A boy and a girl making wooden toys (p. 38)
- Two girls studying in the living room (p. 38)
- A family is skiing (p. 39)

Presence – interested media consumption

In situations that basically means that every individual is taking in a substantial amount of information from a certain media, the presence of other people can be a nice circumstance.

Two friends watching a movie in a cinema, have more contact with each other than what a single man in the same audience has with the people around him.

Without talking to another person, the lonely man in a café still appreciates the presence of people surrounding him and the opportunity to "watch people go by" – an opportunity that here takes the place of a possible media.

- Two friends in a cinema (more active socialising) (p. 40)
- One man in a cinema (less active socialising) (p. 40)
- A man is having a coffee in a café (no media, but a special situation) (p. 41)
- Two people are reading their morning paper, having breakfast (p. 41)

Personal activity – interaction without media

Examples of concrete activities with less intake of information. The situations can be compared with more routinewise use of IT.

- A man is packing his training bag (p. 42)
- A man walks his dog (p. 42)
- A man withdraws money from an ATM machine (p. 43)
- A women starts the washing machine (p. 43)

Active socialising – interaction between people

Examples of activities where the social activity is in focus.

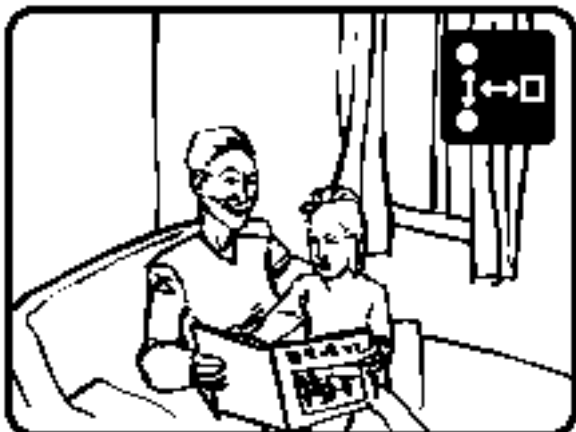
- Two people discussing over the phone (p. 44)
- A salesman and a client discussing over a catalogue (p. 44)
- Ten people are helping a couple moving (p. 45)

A special case

The feedback that the comic receives on his performance is relatively subtle. The scenario is included here as an example of communication which is distanced by other factors than technology.

- A stand-up comedian is performing (p. 45)

A mother reads a picture book to her child.



Active socialising

Interaction between mother, baby and book.

A man tries out his friends computer.



Active socialising

Interaction with the computer.

A married couple cooks from a recipe.



Active socialising

Interaction with cookbook and cooking.

A certain value in the activity in itself (pleasure).

A couple is assembling a piece of IKEA furniture.



Active socialising

Interaction with manual and furniture.

Less value in the activity in itself (in comparison with the cooking above).

Two couples watch "Bingolotto" together.



Active socialising

"Interaction" with the TV program in combination with the coupons for "Bingolotto" creates a scenario for the activity.

To foreigners meet in a bar, TV is on.

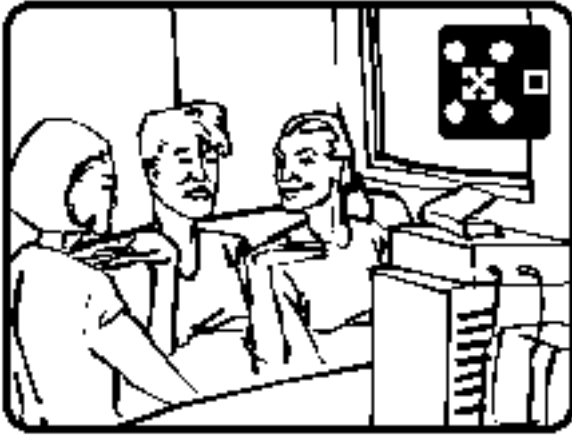


Active socialising

TV is adding subjects to discuss.

Presence of other people.

Friends watching video.



Active socialising

Focus switching between conversation and movie

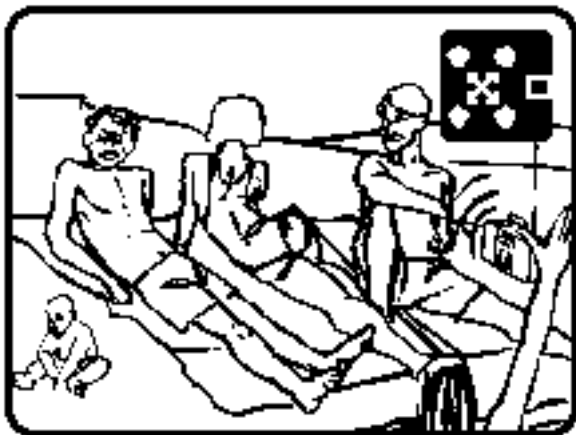
A bicycle team is celebrating in a pub.



Active socialising

Presence of other people, temporary focus on TV.

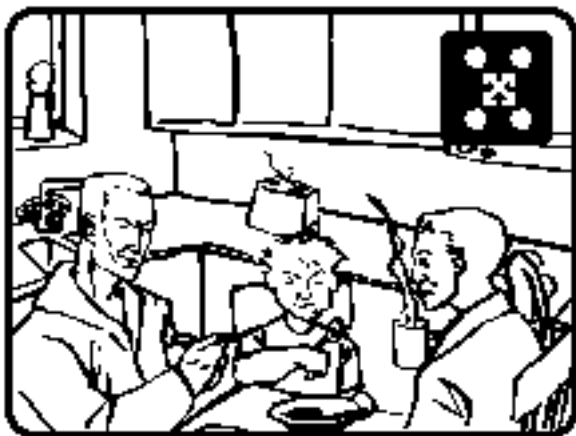
Two families on the beach, the radio is on.



Active socialising

The radio provides a territory rather than specific entertainment.

A family is having breakfast.



Active socialising

All media has been disposed of, in order to not disturb the family discussion.

Two couples have dinner together at home.



Active socialising

Food is stimulating the discussion in a way that media can do in other situations.

Some friends have a glass of wine in the kitchen.



Active socialising

Informal. Wine helps to "define" the situation.

A man and two women have coffee in a café.



Active socialising

An everyday, public situation with some presence of other people.

Two business colleges in a restaurant.

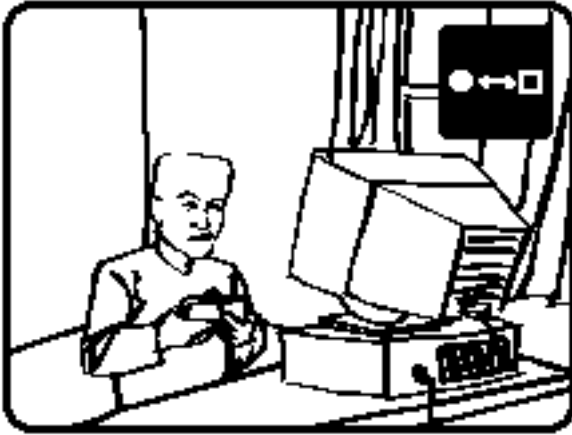


Active socialising

Some presence of other people.

”Neutral grounds.”

A child is playing a computer game.



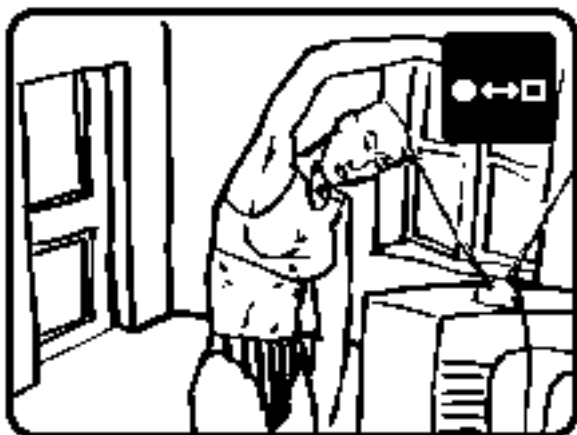
Personal activity
Interaction with the game.

A women is working in her home, on a computer.



Personal activity
Interaction with computer. Office work in home environment.

A girl is working out in front of the TV.



Personal activity

Could be regarded as a kind of interaction with the TV program

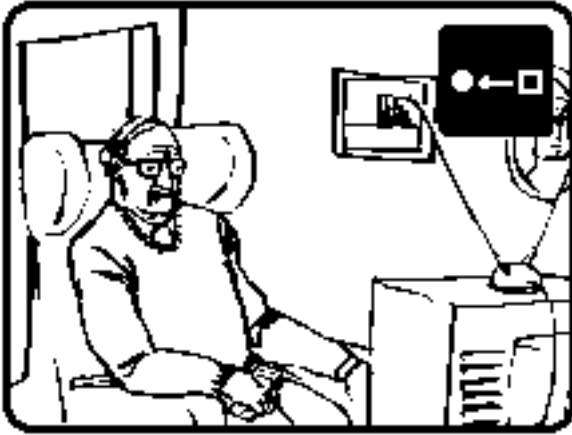
A woman watches breakfast TV while having breakfast.



Personal activity

Everyday situation, focus on the TV

A man is watching TV.



Personal activity

Focus on the TV program.

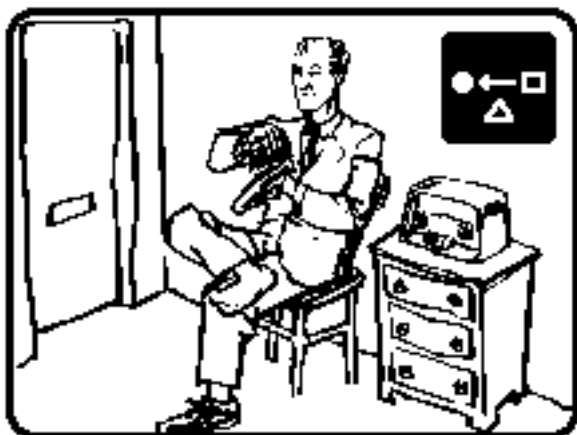
A man is sunbathing in his garden, listening to his walkman.



Personal activity

Focus on the music in the headphones.

A man is listening to the radio while polishing his shoes.



Personal activity

Everyday routine, focus on the radio program.

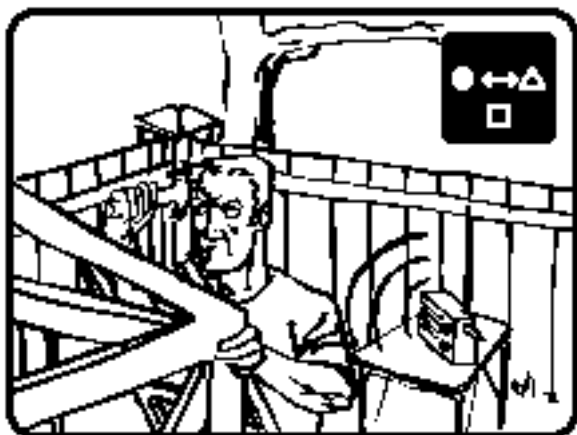
A man is cooking with the TV on.



Personal activity

Everyday routine, focus on cooking, TV giving a sense of presence.

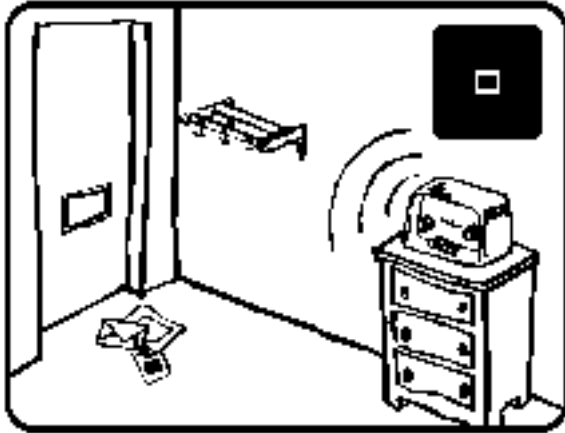
A man is building a shed, the radio is on.



Personal activity

Focus on work.

The radio is on in an empty apartment.



Presence

The radio has been kept on to give a sense on presence.

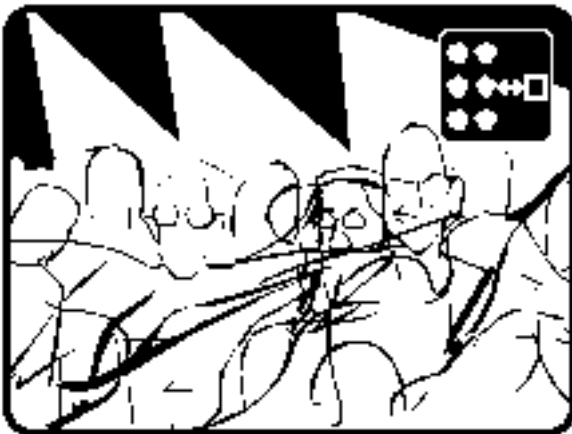
A group of supporters cheering.



In between presence and active socialising

Interaction between audience and the game.

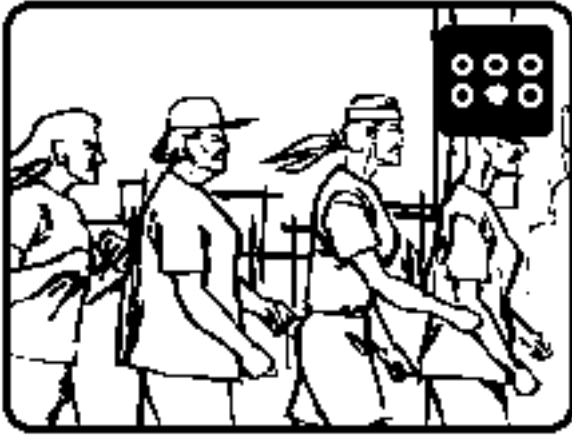
Rave party.



In between presence and active socialising

Interaction people – music.

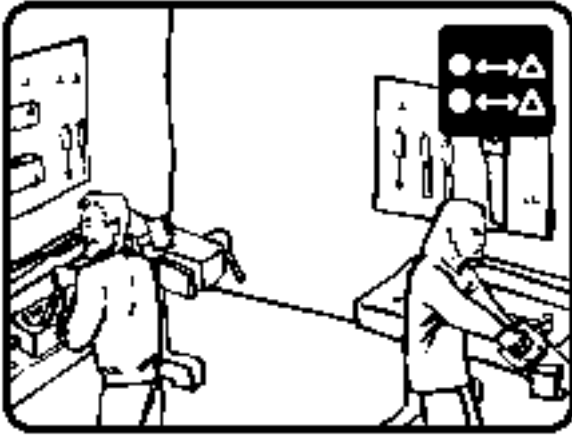
A woman running an amateur race.



In between presence and active socialising

Some interaction between participants. Sense of presence.

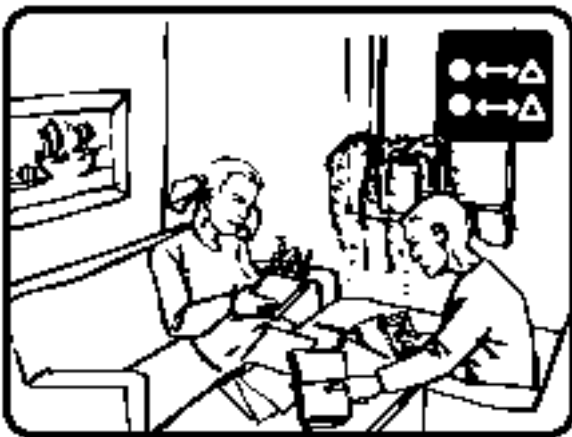
A boy and a girl making wooden toys.



Presence

Focus on the individual activity.

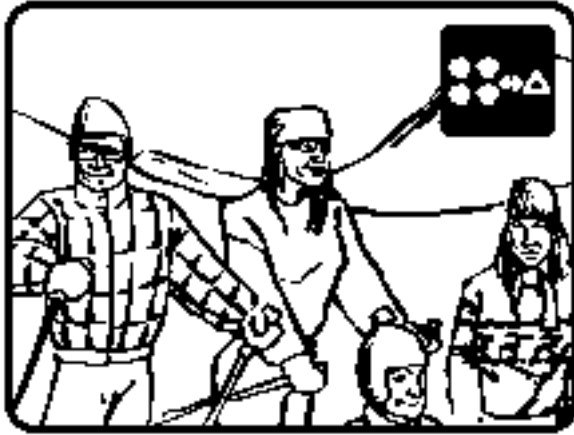
Two girls studying in the living room.



Presence

Focus on the individual activity.

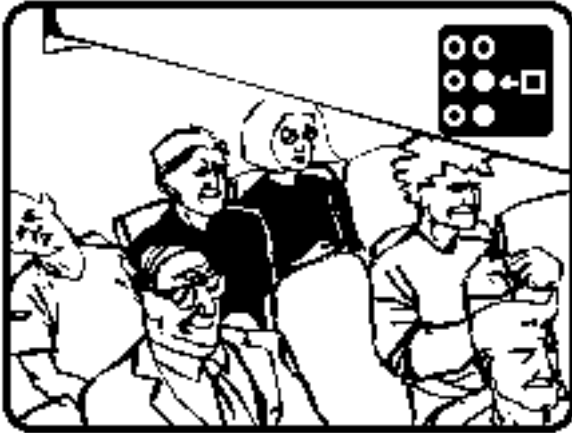
A family is skiing.



Presence

Focus on the individual activity.

Two friends in a cinema.



In between presence and active socialising

Focus on the movie. Some presence from other people.

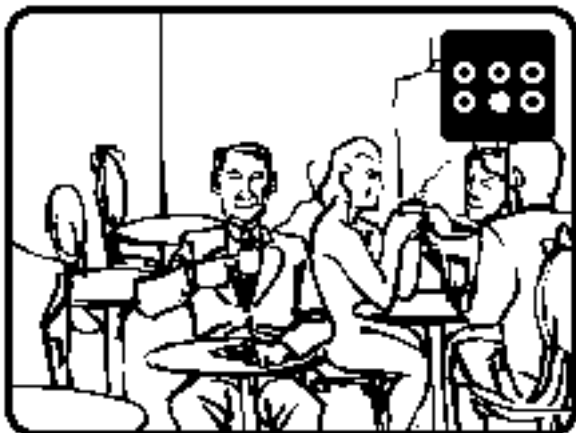
One man in a cinema.



Presence

Focus on the movie, presence of other people.

A man is having a coffee in a café.



Presence

Presence of other people. Less evident focus.

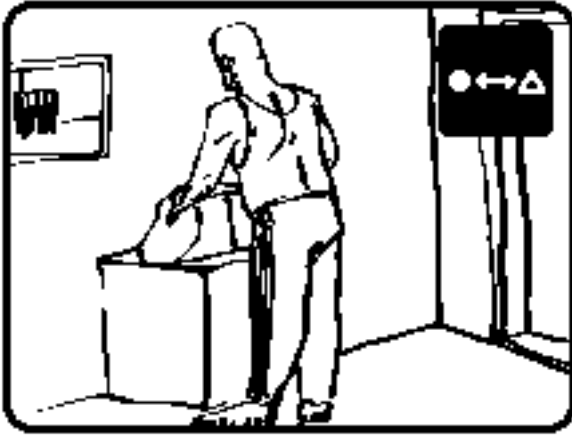
Two people are reading their morning paper, having breakfast.



Presence

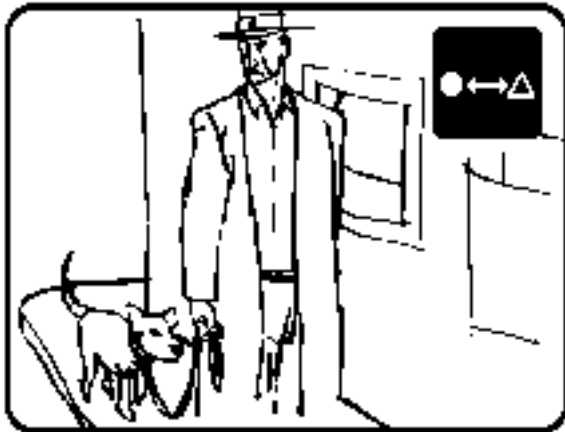
Focus on the media "morning paper".

A man is packing his training bag.



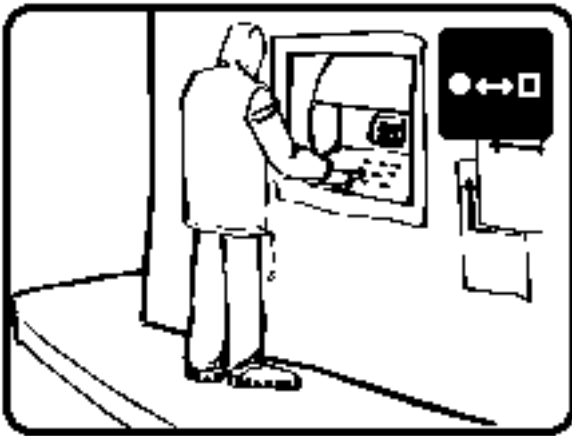
Personal activity
Interaction with the bag etc

A man walks his dog.



Personal activity
Interaction with the dog.

A man withdraws money from an ATM machine.



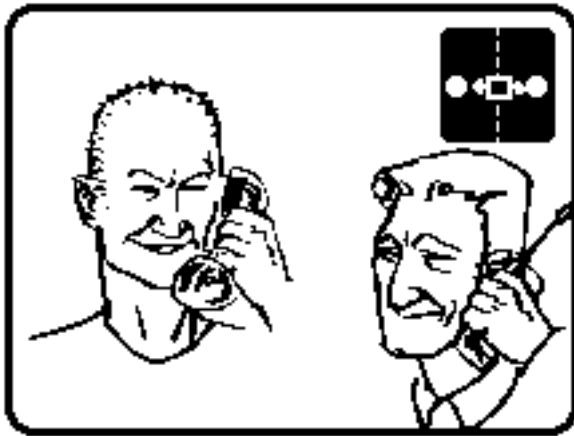
Personal activity
Interaction with the ATM.

A women starts the washing machine.



Personal activity
Interaction with the washing machine

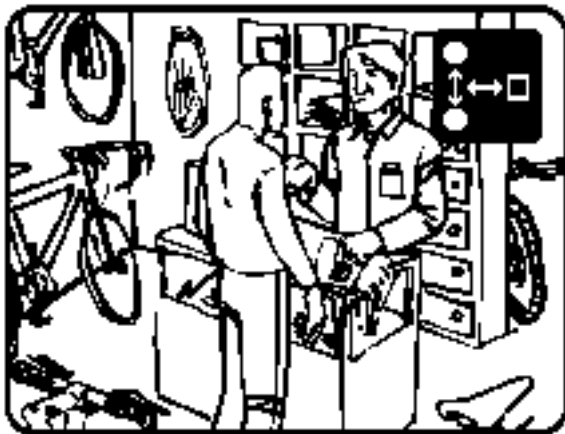
Two people discussing over the phone.



Active socialising

Active social activity with obvious practical limitations.

A salesman and a client discussing over a catalogue.



Active socialising

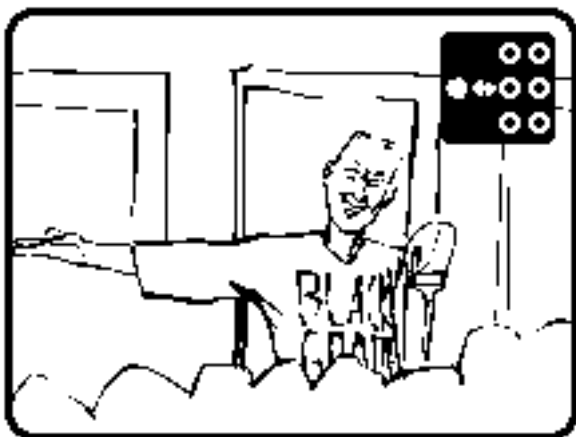
Interaction with the catalogue,
Formal.

Ten people are helping a couple moving.



Active socialising
Focus on the work.

A stand-up comedian is performing.



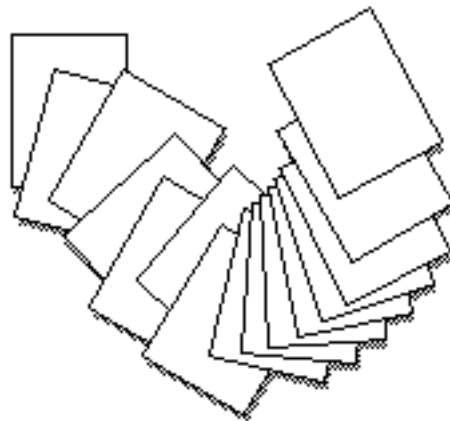
Special case
Interaction between performer and audience.

Experiences from the scenario study as a method

The dynamic characteristics of scenarios in combination with a systematically made diffusion of criteria and the brainstorming technique, can help the participants in a project to think in new ways and also to find new aspects on a problem.

Used in a sensible way, the method can in a short time give a wide overview over a problem, as a departure for further analysis, and it offers through its qualitative characteristics opportunities to structure non quantifiable aspects.

It is important to have a well defined limitations in order to prevent the material from becoming too vast. It is also important to define the criteria in a way that is not contradictory, but that rather helps to generate a large numbers of situations.

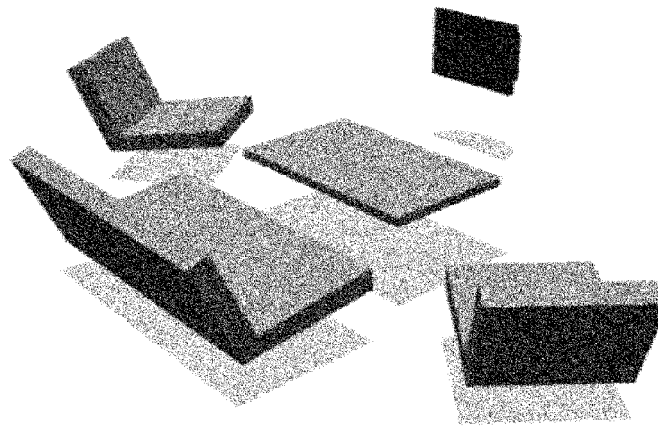


Furnishing structures

The purpose of the scenario study was to deliberate the analysis of problems concerning peoples' use of IT and media from the physical tools. Another approach is of course to look at for example how furnishing is reflected by and influencing the social life and use of IT taking place in one environment or the other. Therefore, a selection of basic structures for furnishing for use of media, TV or radio, was sketched.

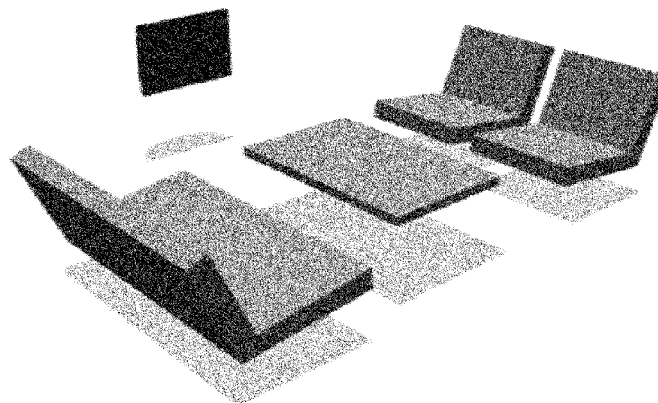
These simple visualisations are made in order to, just like the scenarios, be able to be compared with each other and they show clearly how different configurations go together with different kinds of social activities.

Sitting room furnishing – all watching TV



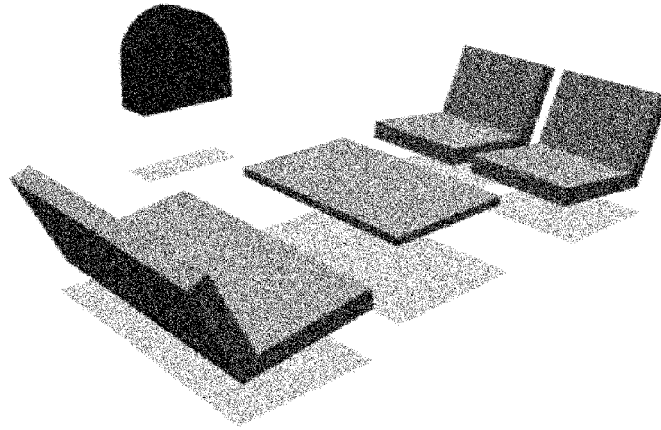
A normal sitting room furnishing often tends to orient itself towards the TV set – a cinema-like structure. This type of IT use and furnishing does not help to stimulate the social life, instead something similar to presence is achieved.

Sitting room furnishing – for social interaction and TV



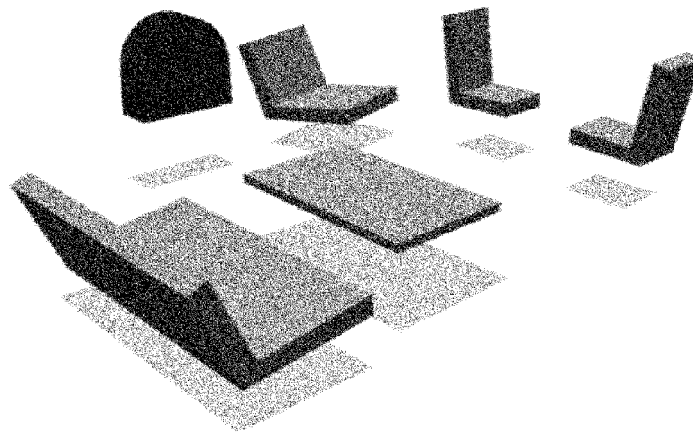
This kind of furnishing, where the furniture is directed towards each other, can be an attempt to reduce the focus on TV, still the TV is dominant.

Sitting room furnishing and radio



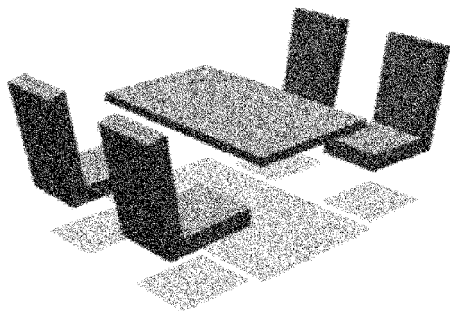
The same furnishing but with a radio gets a different atmosphere – the lack of TV image helps to move the focus from media to social interaction.

All activity room with a radio



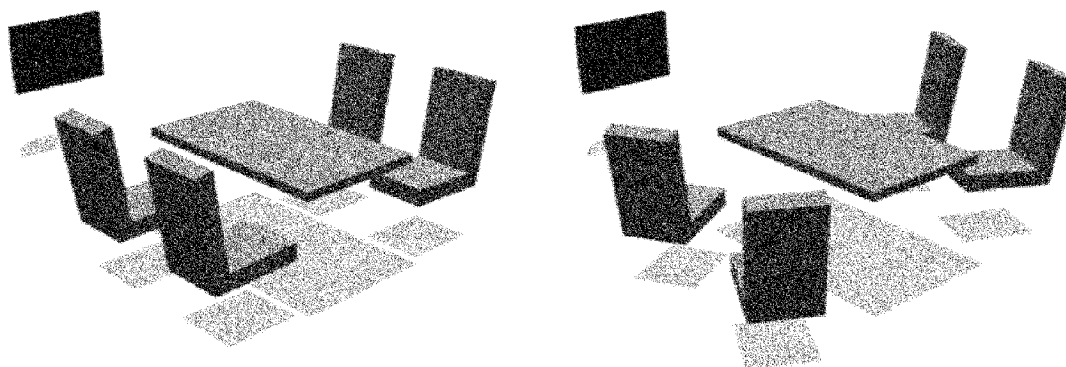
The radio as media makes it possible to have many different activities going on in the same room, where everyone can enjoy the same media.

Kitchen table



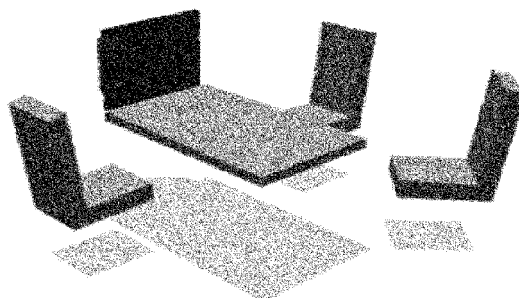
The kitchen, or dining, table is today one of the most intensive areas of social life in many homes – a place for direct, active social contact between people.

Kitchen table with TV

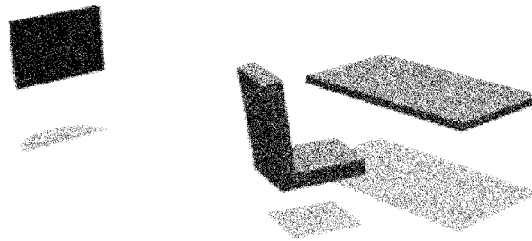


The presence of a TV attracts the eye... ... and soon all are watching TV.

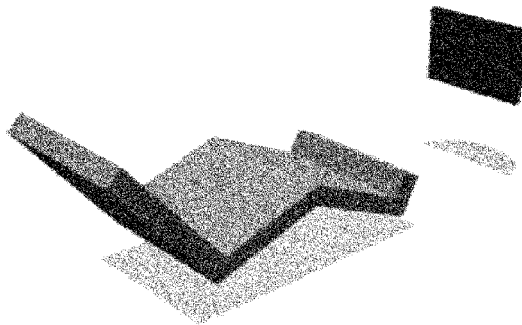
Kitchen table with TV screen



Could some kind of interactive TV, where short pieces of entertainment are being picked up one after the other, act as a stimulation to a discussion rather than a distraction?

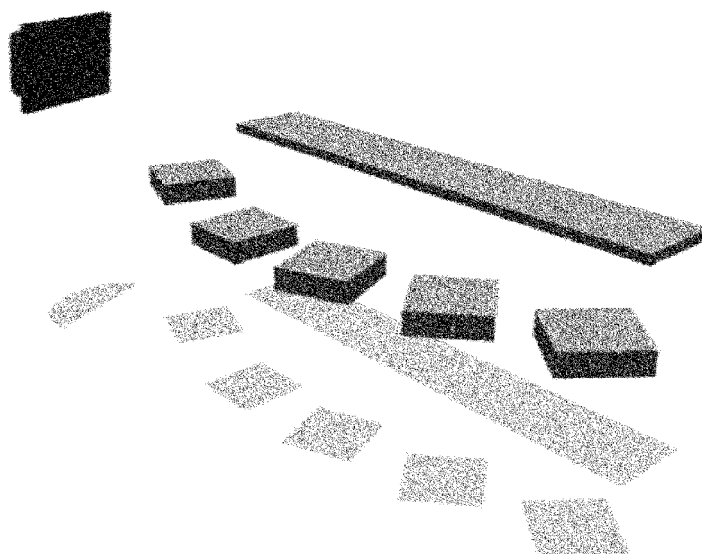
Desk work – TV on

A TV set can just like a radio be used for creating a sense of presence, but can often have a distracting effect.

Personal TV watching in a resting chair

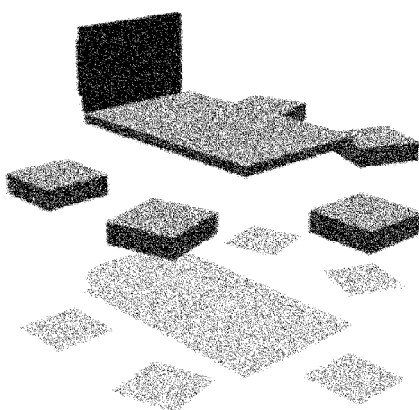
A fully concentrated and dedicated consumption of TV.

TV as a distraction in a bar



A TV set can work as a social stimulance in a bar, what happens on the TV can start a discussion and personal contact with strangers.

Informal social activity around a media bar in the home



The bar metaphor has earlier been introduced in many kitchens and could be taken into account for a more active and social use of TV, especially interactive TV, where information and entertainment is picked and controlled by the people watching, in a stimulating way.

The furnishing can help to enhance the social presence, by breaking the usual one-way "cinema" structure.

Conclusions

IT in the home and in social life

Considering the literature study, the scenario- and furnishing study, certain patterns appear in the relation between people, private life, IT and media.

Depending on the situation, people relate to the media in different ways, and the media takes different roles at different occasions. Sometimes a media is just something that someone uses to get a sense of presence, when mainly occupied with something else but there are also situations where the obvious activity is something that the involved person is actually doing automatically, while being focused on the media.

Through the project, three functions that IT can have in a social context have become evident. IT can:

- support and encourage social activities
- enrich existing activities and products, and
- offer new contact surfaces

IT can support and encourage social activities

Many of our social activities are oriented around the consumption of food, drink, art or entertainment, that is different contexts that give the situation an identity and that offer a shared space that the participants all help to shape and develop. We act differently in different situations, and here IT can help to create new contexts and shared spaces.

The furnishing of a home, for example the living room, reflects what kind of social activities that usually take place there. New kinds of IT might need new kinds of furniture and different configurations can encourage completely new forms of social activities. This concerns especially more active forms of IT use, like interactive TV.

Still, people don't act at the same way all of the time, and neither with constant intensity. Therefore, configurations or structures that make several simultaneous activities possible, as well as several levels of presence or social interaction, should be investigated.

An IT solution that might support a number of different forms of interaction and social activity has been visualised, "The Digital Surface", a combination of table and large screen that can be adjusted in various positions.

IT can enrich existing activities and products

Many of the activities that we are involved with today, just as many of the products that we are surrounded of, could be enriched by means of IT. This means mainly to add various kinds of information, but also the option to communicate with others. Through studies of situations, forms of social activity and structures, we can see various situations where the addition of relevant information would make the activity more meaningful.

One example of a situation where IT today adds information is when a TV is on in a bar – things happening on the TV screen nourishes the discussion. In the same way IT might stimulate other social situations, both in the home and in public areas.

As an example of an IT solution that reflects these conclusions, the concept "Digital Breakfast" has been visualised – a solution for by means of bar codes quickly get access to complementary information through the Internet, for example for enriching the experience of everyday groceries.

IT can offer new contact surfaces

Through modern technology, a number of devices for keeping in touch with other people have emerged: letters, telephone, telefax, mobile phones, pagers, video conferences etc. These have all different features and possibilities, and a certain technology cannot replace another. The technologies available today are made for a direct and fully concentrated dialogue and interaction, while it is obvious that people often are involved with two or more activities at the same time, and that social interaction takes place at several levels.

Through the use of other senses, technologies and configurations, new supplementary kinds of contact surfaces can be created.

In order to give an example of an IT solution that uses other senses and that offers a new way of communication, the concept "The White Stone" has been visualised, an object that offers a sense of presence and compassion merely through the sensation in your hand, technically based on simple cordless technology that in itself is available today.

Three concepts

Three different concepts have been developed out of the ideas that have emerged in the project.

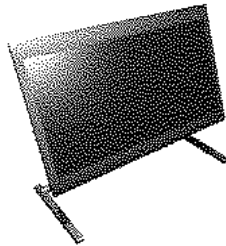
- The Digital Surface (IT can support and encourage social activities)
- The Digital Breakfast (IT can enrich existing activities and products)
- Den Vita Stenen (IT can offer new contact surfaces)

The Digital Surface - a "media table" for several applications

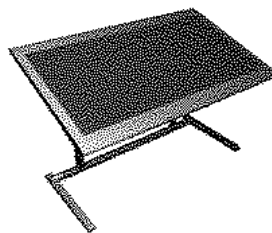
The idea is to visualise a "media table" and to investigate if a screen surface can work in a number of contexts and situations. The LCD (or similar) screen technique is today too expensive and imprecise to be used in this way, but we can already now discuss how reasonable a product like this is, in a practical sense.

The purpose with the "table" structure is to try to move the screen surface into a more social context: people can sit around the table and interact with the system. For certain kinds of activities it doesn't have to be a problem that objects on the screen are seen from different angles. In other cases a high resolution screen, perhaps with higher quality can be added to the "media table".

The stand has a special construction that makes it possible to move the supporting structure in the middle or at the edge of the table, depending on the situation of use.



The Digital Surface - cinema position, for watching movies etc.



The Digital Surface - working position, for office work in the home etc.



The Digital Surface - bar position, for informal and active interaction and discussion

The Digital Breakfast - bar codes on groceries etc (enrich)

The Digital Breakfast is a concept for enriching everyday products and groceries by means of entertainment and information over the Internet.

The Digital Breakfast concept opens vast opportunities for the industry to expand their product content, while the consumer gets access to interesting information and entertainment.

The perceived value of a product (merchandise or service), includes much more than the most evident practical properties of the product. These perceived properties, that together with the practical product properties form the "meta product" (Linn 1985) and are often developed in advertisement and other marketing activities, which results in different preferences for trademarks, countries of origin etc. Coca-cola sells, no matter if you like it or not, not only a soda – Mercedes Benz not only a car.

This is also closely connected to how background knowledge, habits etc affect the use of a product. The today extensive use of pasta is an example of this – the offered product is in itself very simple, but through its origin and the large number of recipes available, pasta is a much more interesting and experienceable product than for example other cereal products.

Technically the concept consist of a monitor, for example an LCD screen with modest dimensions, a bar code reader and electronic equipment for logging onto the Internet.

A bar code is printed on each product, for example the packaging, and using the bar code reader, the bar code is translated so that the system can connect the terminal to an address on the Internet that is specific to the company or the product. You can even imagine that each and every single merchandise has a specific code.



The Digital Breakfast - a picture from the presentation movie

A few examples on how "The Digital Breakfast" can work:

- A bar code on the pasta package can give you access to a passage of an Italian opera, just as many minutes as the pasta is supposed to boil. When you want to make pasta, you read the bar code off the pasta package, and when the water has started to boil, you let the music start playing. The manufacturer can also present recipes, product or company history etc.
- A bar code on a milk package can give access to a certain information like the expiration date. Today, at least on Swedish milk packages, there is already often a little story, that is offered as a part of the bargain, and through the use of internet this part of the product might be extended and enriched.
- For other products the system can offer instructions, helpful tips or adventures. User manuals for home electronics and other pieces of equipment could also be presented in this way, always accessible.

The "Digital Breakfast" concept is developed within the CID project "Smart Objects and Environments".

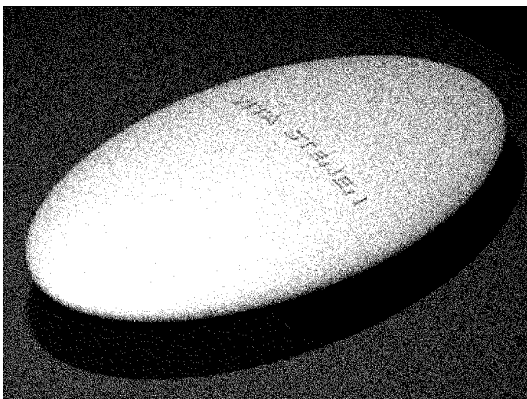
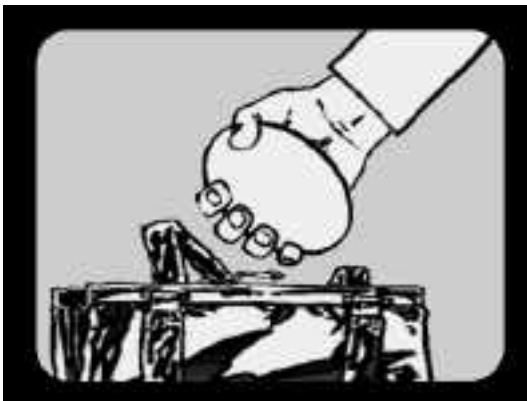
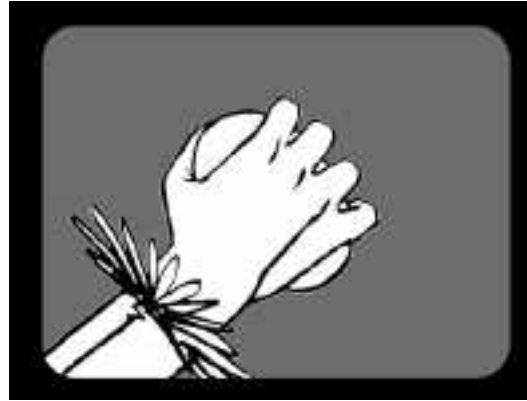
"The White Stone" – a sensorial communication object

The idea behind "The White Stone" is to make sublime communication and a sense of presence between two people possible, using cordless transmission. There are today a number of alternative technologies that can be used if you want to talk to another person, or in some other way exchange information in words, but there is no commercially available technology that offers the sense of touch or presence that together with body language is so important when we meet people.

"The White Stone" is a white electronic product with a round shape, with about the same size as a pager. It is sold in pairs, bought at the same time and automatically connected to each other and to no one, or nothing, else. For example, you give one to your friend and keep the other one for yourself. Through sensors, for example heat or touch sensors, "The White Stone" can detect if someone takes it in his or her hand, and in that case it sends a signal to its sister "Stone" that then will beep (or similar). When the counterpart takes the "Stone" in his or her hand, this one will detect the touch and send a signal back to the first one, which in turn will be warmed up by an internal heating device.

In this manner, two people can keep in touch and feel presence in another way than by talking over the phone. "The White Stone" replaces, as it has been said before, not the telephone or other devices for communication and it can never replace a personal encounter. On the other hand, "The White Stone" offers another contact surface between people – communication on a different level.

The "White Stone" concept is developed within the CID project "Smart Objects and Environments".



"Den Vita Stenen"
Bilder ur presentationsfilmen

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