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# AMI AUGMENTED MULTI-PARTY INTERACTION

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Integrated Project
Information Society Technologies

## D.1.2 SCENARIO DEFINITION

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## D.1.2 SCENARIO DEFINITION

Wilfried Post, Olivier Blanson Henkemans, Sylvia van den Boogaard and Otto van Verseveld

### Abstract:

This report specifies a meeting scenario that is used for collecting a large set of meeting data, necessary for the research and development of multi-modal meeting tools. The data consists of multi-modal recordings and subjective data, acquired from meeting participants by questionnaires. The concepts behind the scenario and the subjective data, and a tool that runs the scenario automatically are also discussed.

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## 1 Introduction

The work reported here is carried out in the context of AMI. AMI is a 6<sup>th</sup> framework European integrated project aiming at enhancing meetings by developing tools for capturing, processing, searching and browsing multi-modal meeting information. There is an obvious need for improving meetings. They are in many, if not in all, organizations a well-known and accepted means of participation in decision-making. Although meetings are beneficial for information exchange and common achievement of goals, they are also often considered to lead fuzzy results and to be time-consuming and unrewarding (Piët, 1990).

This report specifies a meeting scenario that is used for collecting a large set of meeting data, necessary for the research and development of multi-modal meeting tools. The main part of the data collection consists of multi-modal recordings. They form the basis for modeling meeting behavior, and subsequently, automatically deriving structure and content of a meeting. It has been estimated that 100 hrs of meeting recordings are needed for this purpose. The collected meeting data also consist of subjective data. During the meetings, participants are asked to fill in rating scales and questionnaires on the meeting process and outcomes. Together with objective data on meeting process and outcome, they are used to evaluate the meeting tools that will be developed.

For automatic information processing research and for evaluation purposes, the meeting data are required to be comparable. Therefore, the recordings need to be replicable. Second, the ambition of the consortium is to apply the technology to real world behavior. So, a second requirement is to use realistic meetings. To meet both requirements, it was decided to work with scenario-based meetings that provide the meeting participants with fixed constraints in terms of context information, meeting objectives and time frame, yet let them interact freely and naturally within these constraints.

This report is structured as follows. In chapter 2, we describe our approach in data collection. Chapter 3 describes the scenario on a conceptual level. A complete specification of the scenario is provided in Appendix A. In chapter 4, a software environment is described that is used to run the scenario in a fully automatic way. Chapter 5 describes the collection of the subjective data. Chapter 6 describes the data collection procedure that has been followed. In chapter 7, some concluding comments are provided.

## 2 Meeting Paradigm

Real meetings are a means to reach a higher-level goal, such as the coordination of organizational activities, the development of a product, or solving a crisis. Therefore, they should not be considered as isolated events. Meetings are usually followed by the documentation and distribution of minutes, the execution of actions that have been agreed on, and the preparation of the next meeting. This meeting cycle can be infinite, such as the meetings of a management board, but also finite, such as within a project or an operation. The scope of the meeting scenario should be this meeting cycle.

How real meetings proceed, depends on several factors. From the literature, aspects that are relevant to meetings have been identified and organized in seven basic factors. The categorization is based on the conceptual framework for studying the impact of technology on groups, as proposed by McGrath J.E. & Holingshead (1994). The seven distinguished factors are: means, methods, individual factors, team factors, task factors, organizational factors and environmental factors. Means refer to systems and tools that support meeting-related tasks (e.g., an interactive large screen display). Methods refer to prescriptions of how to do a particular task (e.g., a procedure to chair a meeting). A team is a group of individuals who see themselves and are seen by others as a social entity (Guzzo & Salas, 1995), which is also the case for the participants of a meeting (e.g., a management team). Team processes are influenced by individual characteristics (Shaw, 2005), in particular the different roles that the individuals play (Stewart, Manz, & Sims, 1999) (e.g., the chair).

The *task* refers to the work that must be done to reach certain goals. Through the task, team members become interdependent (Steiner, 1972). Tasks can be described as individual tasks (e.g., design; Schreiber, Akkermans, Anjewierden, Hoog, & Velde, 2000) or as group task (e.g., negotiate; McGrath J.E. et al., 1994). *Organizational factors* refer to aspects such as organizational structure and culture (Swigger, Brazile, Peng, & Harrington, 2004). *Environmental factors* refer to aspects external to the organization, such as the market. The success of teams and organizations strongly depends on how they manage the unexpected dynamics of the environment (Weick & Sutcliffe, 2001).

Fig. 1 illustrates a conceptualization of the proposed meeting paradigm. This conceptualization should not be seen as a model or theory of meetings, but as a mechanism for generating and measuring replicable, yet realistic meeting behavior. It should allow the manipulation of the various input variables and measure the process and the outcome of the meeting cycle. Process measures can be taken during the execution of a cycle at particular points in time (e.g., directly after a meeting). For instance, the status of the individual and shared information and knowledge, workload, group cohesion, etc. can be determined with measuring instruments such as questionnaires and tests. Outcome measures may include the speed and timeliness, the quality and quantity of the end product, and the satisfaction of the participants.

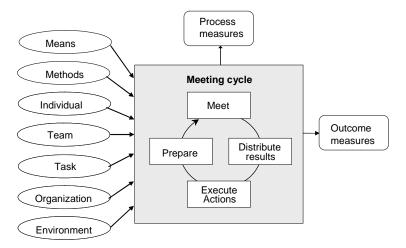


Figure 1: Conceptualization of the proposed meeting paradigm. The process and the outcome of cycles of meetings depend on several input factors.

## 3 Scenario concept

The meeting paradigm forms the basis for specifying a scenario environment in which meeting behavior can be generated, recorded and studied. This chapter describes how the factors are instantiated for the meeting scenario. It specifies what means are used, what procedures are made available, the characteristics of the individuals, the configuration of the team, a definition of the task, the specifics of the organization, and the developments in the market. Participants are asked to carry out a certain task (i.e., to reach a common goal). They are made interdependent by providing role-specific information. This requires that they all need to confer about the same matter, but it does not prescribe how and when.

Many types of meetings could have been selected for this research. Within the consortium it was decided to use a *design* project as the basic scenario task. This is a functional type of meeting that is characterized with a clear goal orientation, for which it is easier to measure effectiveness and efficiency. Among other functional meetings, *design* was chosen for its relevance in society. Design is a common task in many industrial companies and has clearly an economic value, so enhancing design meetings may draw attention from that area. Further, design meetings rely heavily on

information from previous meetings, making a meeting browser, one of the aims of the AMI project, the more relevant. Below, the instantiation of the variables are described on a global level. Details of the scenario can be found in appendix A.

#### Market

The design scenario is placed in the context of a competitive market for television remote controls (RC's). In this market, current remote controls are found to be ugly, old fashioned, and not user friendly. The age group below 45 prefers fancy and soft feeling RC's; older people would like to buy RC's with a classical look. It has been calculated that the market for new RC's is huge, but the price of a new RC shouldn't be over EUR 25. This market is rather dynamic, and requirements and preferences may even change during the process of developing a new RC.

### Organization

An organization called RealReaction is one of the competitors on the market. It is a multinational electronics company, having for their consumer electronics an explicit motto: "We put fashion in electronics!", as becomes clear from their website (see Fig. 3). The company has various research and development centers, as well as production plants.

#### Task

In the scenario, an account manager Consumer Electronics has just convinced the members of the board to develop a new series of remote controls. The commercial success of devices such as iPOD indeed shows that fashion in combination with an innovative user interface can be an important drive for potential customers to buy a new RC, even if their old one is still working. Looking at their current product line, they all admit that their RC's lack any attraction. They order the account manager to work out the details and to start a project to design a prototype RC, within a fixed budget.

The company follows a standard design method consisting of three phases:

- Functional design, consisting of:
  - o User requirements specification: what needs and desires are to be fulfilled
  - o Technical Functions design: what effect should the apparatus have
  - Working design: how does the apparatus work to fulfill its functions
- Conceptual design:
  - Conceptual specification of components, properties and materials
  - o Conceptual specification of the user interface
  - o Trend watching
- Detailed design:
  - Look-and-feel design
  - o User-interface design
  - o Product evaluation

#### Team

The (simulated) account manager invites by e-mail four employees to carry out the project. They form a design team, consisting of a project manager, and industrial designer, a user interface designer and a marketing expert. The project manager coordinates the project and is overall responsible. He should guarantee that the project is carried out within limits of time and budget. He will chair the meetings, make and distribute the minutes, and produces a final report. The industrial designer is responsible for designing the working, the components and, together with the user interface designer, the look-and-feel of the design. The user interface designer is responsible for the technical functions, the user interface and the look-and-feel. The marketing expert is responsible for the user requirements, trend watching and product evaluation.

#### Individual

The scenario is set up for participants that are neither professionally trained, nor experienced in their role. Using novices has been a well-considered choice, although there is ample evidence that expert designers behave differently from novices. The first consideration is a pragmatic one. The availability and costs of having 400 hrs professional designers for 100 hrs of meetings would cause an enormous problem. Second, to get replicable behavior, all subjects for a particular role should have the same starting point. Differences in experience may violate this. Experience with university students carrying out similar non-trivial team tasks, such as in crisis management teams, tells us that non-experts can be used for this purpose when the knowledge they lack is provided in a different way. It has been recognized, however, that the scenario should be verified with real professionals.

To enable the participants to carry out their work while lacking knowledge and experience, they are each assigned a (simulated) personal coach who gives sufficient hints by e-mail on how to do their job.



Figure 2: Schematic view of the meeting scenario context. The meetings take place within the context of a project with four team members, working in an organization with functionaries closely related to the project. The organization functions within the context of a particular market.

## Meeting method

For each meeting, the chair is asked to aim for specified goals. In the kick-off, he must do teambuilding, explain the project method and train the participants in using PowerPoint and an electronic whiteboard. In the second meeting, the aim is to exchange role-specific information, and to reach a decision on the target group and the functions of the remote control. In the third meeting, the aim is to exchange role-specific information again, and to reach a decision on the concepts of the remote control. In the fourth and final meeting, the aim is to reach a decision on the details of the remote control and ensure that the production costs are within the budget.

The project manager chairs all meetings. Each meeting, the project manager is asked to stimulate the team, to take minutes and distribute them after the meeting, and to work after the meeting on a final report.

## Meeting means

An office environment is simulated, in which the participants will have their own private office and laptop, and share a meeting room. On the laptop, they will be able to use e-mail, a web browser, and PowerPoint for information presentation. However, control will be maintained of the way the participants can exchange information and what information can be found on the (simulated) web. Also, e-mail communication from individuals in the organization (such as the account manager and the head of the department) will be simulated. The participants will be able to use a digital pen (IO pen from Logitech) that, together with a special note block, records handwritings.

In the meeting room, they can use their laptop and digital pen. Further, they can present PowerPoint slides and use an electronic whiteboard (from eBeam). The subjects get some training in using the tooling via e-mails from the (simulated) training service department.

## 4 Scenario environment

A specially developed scenario tool sends e-mails in the name of (virtual) individuals outside the team, on particular points in time. In this way, for instance, the account manager can provide information on the design project, and the personal coach can bring in knowledge and experience on how to carry out a design task. Further, the scenario tool controls the availability of information the participants can find on a simulated web. In this way, the marketing expert, for example, can only search and browse market trends that we make available on a particular moment. The tools that enable this are listed in table 1.

Table 1: The tools that make up the scenario environment

Tools	Description
Servers	
E-mail server	Participants receive information from people outside the team, but closely
	related to the project (e.g., account manager) through e-mail.
Web server	Participants can brows on the (virtual) internet.
Events database server	When the scenario starts it follows the database timeline
Work environment	
MS Office	Word, PowerPoint, Excel
mail client	Participants receive scenario-generated mail
'private' and 'shared' folders	Participant all have access to their personal folder and shared folder.
Alert (pop-up)	To force actions of the participants, such as filling in a workload form
Scenario tool	
editor	To specify prefabricated e-mail, alerts, and web information availability
database	Scenario content/references
controller	To start, pause, resume and stop a scenario
Observatory	
Measurements	Electronic work load forms
Questionnaires	Web based forms
Logging	Of various handlings

### Information provisions

At the start of the scenario the participants open their e-mail tool and receive their first company e-mail containing instruction for individual preparations of and task for the kick-off meeting. In addition, they receive a second e-mail containing detailed project specifications, such as team role tasks and expectations and the explanation of the general design method. After every meeting the participants receive design phase instructions and role specific information, such as innovative user interfaces, component materials, and user requirements.

The following e-mail is sent by the personal coach to the marketing expert (ME) between the first and second meeting. It gives instructions concerning the functional design phase and the preparations of the second meeting.

#### How to analyze the requirements for a remote control

In this first design phase: the functional design, you, as a marketing expert, have to come up with the **User requirements specification:** what needs and desires are to be fulfilled.

Remember from the explanation of the general design method (check your mail-box), the user requirements specification of the coffee machine was: *hot coffee, quickly made.* For a remote control, the user requirements specification may be somewhat more complicated, however.

#### You are asked to:

- 1. Search the web for information on remote control user needs and desires (go to the home page of the web browser).
- 2. Put your findings down in the pre-structured PowerPoint slides, which will be send to you by e-mail. You can easily copy text or images from the documents and websites (just right-click the pictures) to your PowerPoint slides.
- 3. Save the PowerPoint slides in the shared folder on your desktop.
- 4. Prepare your presentation for the next meeting.

Your personal coach

Another information source is the web browser presented as the company intranet (see fig. 3) that shows links to a number of websites. These links are role and time dependent.



Figure 3: Screen shot of the company intranet homepage.

Figure 4 illustrates two web browsers with a marketing report and a schematic view of the remote control presented between the kick-off meeting and meeting A to the marketing expert (ME) and

to the User interface designer (UID) respectively. The ME and UID can obtain information crucial for successful design of the remote control.

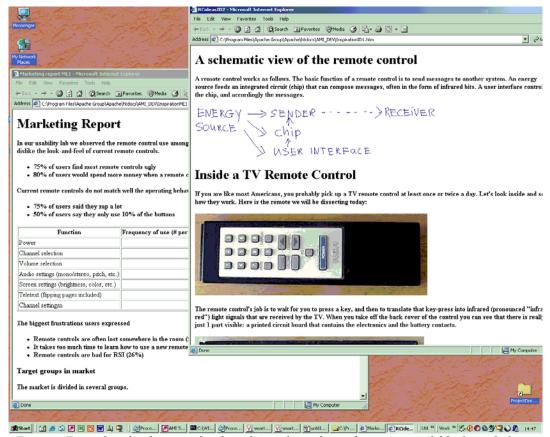


Figure 4: Examples of websites with role and time dependent information available through the company intranet.

#### Work environment

In the course of the project the participants create documents, such as Word documents, PowerPoint presentations and Excel sheets. These documents are stored in the private 'My Documents' folder. The participants can also share their documents, such as meeting minutes, by storing them in the 'Project Documents' folder.

The PowerPoint projection and the electronic whiteboard are also connected to the server. This enables the participants to open and present the documents stored in the Project Documents folder during the meeting.

From time to time the participants receive an alert popup that assigns certain behavior or gives a warning. For example, one alert instructs the project manager (PM) to round up the meeting, and another alert warns all participants that they have five minutes left before the next meeting starts (see fig. 5).



Figure 5: Illustration of an alert popup launched during the project.

#### Scenario controller

Every controlled event discussed above is operated automatically with the developed scenario tool. This database application runs in MS Access. It takes into account the timeline, the participants' role and the information supplying tool (e-mail, web, or alert). At the initiation of the project, the database is launched and it schedules the list of events. In fig. 6, one can see that for example 4 hours and 25 minutes after the beginning of the project event number 129 is launched and all participants receive an alert from the message server (not visible in the figure) with the message '5 minutes to round up meeting preparations'.

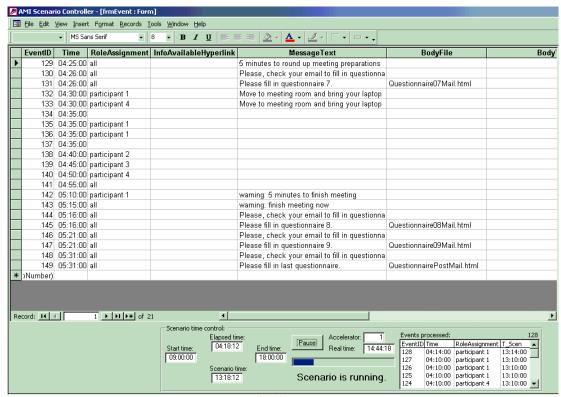


Figure 6: Scenario database run in Access.

#### Scenario viewer

The scenario has become a complex series of pieces of information from various types and for various roles. To maintain an overview, a scenario viewer is developed that can show all information elements in a user friendly way. The information is presented in time order, is easily scrollable and can be filtered on role and information type. The viewer is presented in fig. 7.

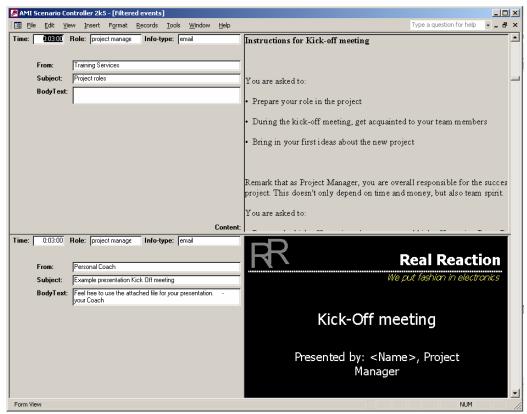


Figure 7: scenario viewer.

## 5 Subjective data collection

Studying meeting behavior means studying work groups. Many theories on work group functioning use the conceptual input-process-outcome model as a frame of reference. It relates a set of contextual determinants which affect work group effectiveness through the mediation of internal activities of work groups Brodbeck, 1996; McGrath J.E. et al., 1994; West, Borrill, & Unsworth, 1998).

Process measurements are often referred to as measures of performance, and outcome measures are often referred to as measures of effectiveness. Outcome measures assess the quantity and quality of the end result (Smith-Jentsch, Johnston & Payne, 1998). These can be distinguished from process measures that describe the strategies, steps, or procedures used to accomplish a task.

Brodbeck poses that performance is an aggregate of those behaviors that are relevant for achieving the goals specified (Brodbeck, 1996). Examples of these kinds of behaviors are effort, supportiveness, and team performance functions. Effectiveness is the degree to which the performance outcomes approach the goals specified. Productivity is how efficiently a particular level of effectiveness is achieved. A better understanding of the relationship between performance and effectiveness – that is, a better understanding of predictor-criterion relationships – can contribute to making meetings more effective, for optimizing team work in meetings means using processes that on average will lead to more favorable outcomes. Fig. 8 gives an overview of the variables that we use in this study. In chap. 2, the input variables have already been discussed. The process and outcome variables are discussed next.

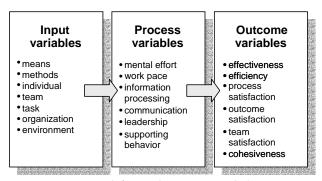


Figure 8: Framework for studying meeting behavior.

#### Process variables

A reasonable expectation is that the better the performance, the more effort it takes. Therefore, we will measure the *mental effort* that is needed during the meetings. It is also known that the amount of mental effort needed increases during the day because people get tired. Finally, it is important to care for the mental well-being of participants of a meeting. Participants should not do too much work, nor too less, to let them feel well (Gaillard, 2003). A related aspect we want to take a look at is *work pace*. We wonder to what extent the participants of a meeting feel they have to work under time pressure. Having to work too hard may effect the outcome of the task.

In the literature several process variables are mentioned that are crucial to effective team work. Smith-Jentsch, Johnston and Payne, for example, describe an approach to develop and evaluate a human-performance measurement system designed to assess training needs called Team Dimensional Training (TDT). TDT is based on years of team research (Smith-Jentsch et al., 1998). TDT describes, diagnoses, and evaluates processes that lead to effective outcomes. TDT helps to obtain a better insight in the process of team work. At the end of an exercise the participants evaluate their own team performance under guidance of a facilitator, with the aim of improving their performance. The evaluation takes place in the light of four dimensions, which are thoroughly checked on reliability and validity. The dimensions are subdivided in concrete and observable components. The four dimensions are information exchange, communication, supporting behavior, and leadership. Information exchange is the extent to which every member of the team knows what information should be transferred and to whom and when. For our purpose, we extended this variable to include other aspects of processing information: whether this information is remembered and used. We call this extended variable information processing. The communication dimension refers to the way in which information is passed through (e.g., understandability). Supporting behavior is the mechanism by which team members compensate for one another's weaknesses by correcting errors and shifting workload. Leadership is concerned with those behavioral characteristics that direct the team in a certain direction. Each member of the team can guide the team by taking the lead. The four dimensions are taken because they are reliable and valid, and represent superior teamwork strategies.

We operationalised the process variables as follows. *Mental effort* was measured with the Rating Scale Mental Effort (RSME) (Zijlstra & Meijman, 1989). The RSME is a translation of the Dutch *Beoordelings Schaal Mentale Inspanning* (BSMI). We adopted the translation of the BSMI in (Zijlstra & Mulder, 1989). The score is indicated by digits on the left side of a scale from 0 to 150, the variable anchors are indicated by words on the right side. The anchors range from "absolutely no effort" to "extreme effort". *Information processing* and *leadership* were both measured in questionnaires using four items for each variable. *Communication* and *supporting behavior* were measured by four items in the questionnaire about the whole project. See Appendix B for the items.

#### Outcome variables

The first outcome variable we take into account is team effectiveness. Whether groups are more effective than individuals depends on the criteria that are used for defining effectiveness (Robbins, 2001). Group decisions tend to be more accurate (better-quality decisions). Individuals are faster. Groups tend to be more creative and group decisions tend to score better on acceptance of the final solution. The choices groups make are more creative and accurate, because groups bring more complete information and knowledge to a decision, so they generate more ideas. In addition, the give-and-take that typically takes place in group decision processes provides diversity of opinion and increases the likelihood that weak alternatives will be identified and abandoned.

According to Robbins (2001), effectiveness cannot be considered without also assessing efficiency. Individual decision makers are almost always more efficient than groups. Group decision making consumes more work hours. In deciding whether to use groups it should be considered whether increases in effectiveness are larger than the losses in efficiency.

An important goal that must be achieved in every meeting is that the participants of the meeting are content with the process and outcomes of the meeting. Robbins (2001) states that organizations with more satisfied employees tend to be more effective than organizations with less satisfied employees. A consistent negative relationship is found between satisfaction and absenteeism, and a consistent positive relationship between satisfaction and turnover. Moreover, researchers with strong humanistic values argue that satisfaction is a legitimate objective of an organization. Organizations should be concerned not only with the quantity of work life – that is, concerns such as higher productivity and material acquisitions – but also with its quality. Organizations have a responsibility to provide employees with jobs that are challenging and intrinsically rewarding. Therefore, satisfaction is considered as important. We distinguish between satisfaction with the process, the outcome and the team.

Cohesiveness refers to the degree of interpersonal attraction and liking among team members. To assess cohesiveness, researchers almost always ask team members to indicate their personal feelings about other members and/or their liking of the team as a whole (Jackson, 1996). Positive affect promotes helping behavior and generosity, cooperation and a problem solving orientation during negotiations. When positive affect occurs in the form of attraction to team members, it may translate into greater motivation to contribute fully and perform well as a means of gaining approval and recognition. Positive affect is likely to be particularly beneficial for improving performance. This is especially the case in problem-solving situations, where flexible and creative thinking can lead to more effective resolutions than compromise. One way to enhance group cohesiveness is increasing the time members spend together (Alblas, 1992).

We operationalised the outcome variables in the following way. For measuring *effectiveness*, items were constructed that request opinions on the quality of the solution in the light of team versus individual work. For *efficiency* items asked the subject whether they think the job could have been done faster with fewer people. For *cohesiveness*, items asked the participants how much they liked the other members. Items on how hard and fast participants had to work have been constructed to measure *work pace*. We distinguish three kinds of satisfaction. First, there is the satisfaction with the decisions made and how they were made. This is the variable *process satisfaction*. The second is *outcome satisfaction*, which refers to the quality of the outcome product - that is the completeness, price, correctness, and precision of the final solution for the design problem. The last kind of satisfaction we are interested in is that with the team process and the achievement as a team. This is the variable *team satisfaction*. The three variables are also measured with items at the questionnaires. See Appendix B for the items.

## 6 Procedure

Fig. 9 shows a time schedule of the scenario and the subjective measurements. For pragmatic reasons, each design project was carried out in one day. Having arrived at the research lab in the morning, the participants received oral instructions and a handout on how to use the tools. The participants were told to speak and write in English because of the international use of the data.

Before the scenario begun the participants had to fill in a pre-test questionnaire about background information, and experience with technology, meetings, and design projects.

The scenario was started at about 10 o'clock AM. The first individual session (that took about 30 minutes) was followed by a first meeting (30 minutes). This was followed by a second individual session (30 minutes) and a second meeting (45 minutes). At 12.15 there was a lunch break of about 45 minutes. They were instructed not to talk about the research. After lunch there was a third individual session (30 minutes) and a third meeting session (45 minutes). The project concluded with a fourth individual (30 minutes) and meeting (45 minutes) session. In the fourth individual session the industrial designer and the user interface designer worked together. After the scenario, the participants had to fill in a final questionnaire about how they might wish to be supported by future technology.

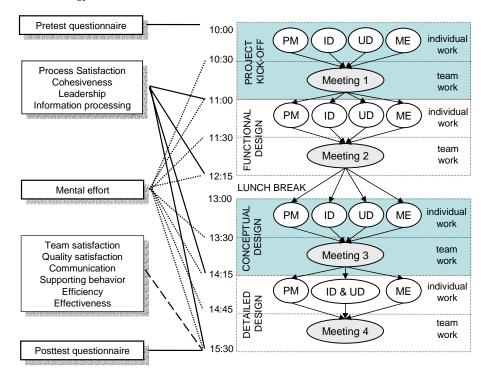


Figure 9: Meeting cycle: time schedule for individual and meeting activities and measurements. PM: Project Manager; ID: Industrial Designer; UD: User interface Designer; ME: Marketing Expert.

In the individual work sessions the participants read their email, visited simulated web pages, executed new tasks, and prepared their PowerPoint presentation on their findings. The project manager had to document the former meeting. During meeting sessions, the team members showed the PowerPoint presentations to each other, discussed the findings, and made decisions on various aspects of the new TV remote control prototype. The scenario application controlled by alerting pop-ups when to fill in questionnaires, when to go to the meeting room and to start the meeting, and when to end the meeting and to go to the private workspace again.

## 7 Conclusions and discussion

We succeeded in fully automating the meeting behavior generation and measurement, making the collected data as comparable as possible. The scenario has been successfully applied at three sites, in the three AMI smart meeting rooms at TNO, the University of Edinburgh, and at IDIAP. The generated behavior was indeed natural and rich. To our opinion, the participants acted as real project participants, we think due to the clear project objective, appropriate role guidance and

organizational context. In total, 45 projects have been carried out on the basis of this scenario, making up to 180 meetings, with 180 different participants and 100 hours of recordings.

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## 8 Appendix A: Scenario items

In this Appendix, the items used in the scenario are specified. Each item is described in a particular format with the following eight slots:

**Time:** The elapsed time after the start of the scenario.

**Role:** To what role the information is sent

**Information type:** paper sheet, alert, e-mail or webpage availability

**From:** The sender of the information

**Subject:** The message in the alert, or the subject in an e-mail

**Body Text:** The content of an e-mail or a webpage Reference: By url referred information in an e-mail

**Attachment:** An attachment of an e-mail

**Time:** handed out before the scenario starts

Role: all

Information type: paper sheet From: Experimenter Subject: Handout.

**Body Text:** 

#### HAND OUT

Welcome to TNO Human Factors. We want to thank you for participating in our experiment.

Today you are joining a designing team that works on a project launched by an electronics company called Real Reaction. The project starts at 10:00 o'clock and will be round up at 17:00 o'clock. There is a lunch break around 12:30 o'clock.

You have a specific assigned role during the project. The role tasks will become clear in the course of the project. We want to ask you to follow the task instruction, beforehand and also during the course, and take your role specifications seriously. We emphasize that we are not judging you personally, but only the situation.

During the project you will have a laptop available. On the laptop there are several tools:

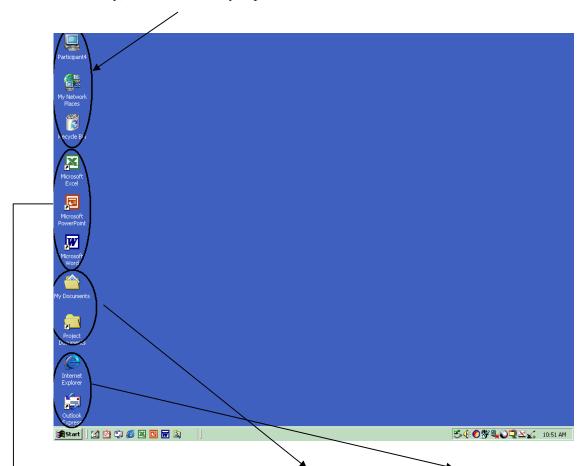
- 1. A mail browser and a web browser.
- 2. **Office applications** (Word, Excel and PowerPoint) to make documents. Short keys for the PowerPoint program are:
  - a. Press 'enter' after selecting document to open
  - b. F5: show slide on full screen
  - c. To close program press Alt-F4
- 3. A personal folder, called **My Documents**, where your documents are saved.
- 4. A shared folder, called **Project Documents**. Documents placed in this folder are share with your colleagues
- 5. Sometimes an **alert** will pop up with an important message or instruction. Follow the instructions strictly.
- 6. Every participant has his/her personal **Logitech pen**. You should write your notes with these pens on the special **Logitech paper**. When done, place your pen in its station to download the writings to your computer. The computer will automatically open Word to show the writing. It is important that:
  - a. You tick the *note* and *done* field at the bottom right of the paper when you have finished writing
  - b. Close the Word program before you download new writings

In front of the meeting table in the meeting room there are two **smart boards**. These smart boards are connected to the network so you can access the shared folder and project all documents (e.g., Word, PowerPoint) stored in the folder on the board. With the special smart board pen you can also draw on the smart board.

See backside for further instructions.

Here is an illustration of the desktop on your laptop.

During the experiment you will not have to use the computer icon with your role name (Participant N) and the network icon My Network Places. Furthermore, we ask you not to throw away/delete documents you produce.



#### Microsoft office tools

Double click these icons to start the applications. With Word you can make a text document. With Excel you can make tables and graphics. With PowerPoint you can make presentations.

## Documents folders

In My Documents you will find the documents you saved.

In the Project documents you can place documents you want to share with your colleagues.

## E-mail/Web browser

Check your mail regularly. Double click the Outlook Express to open the application. Here you can find e-mails sent to you. Outlook refreshes every minute.

Look for information on the Internet. Open your web browser by double clicking the Internet Explorer icon. You will automatically go to the homepage where you will find a list with websites that contain relevant information. The browser refreshes every 30 second.

Time: 0:00:00
Role: all
Information type: alert
From: Messenger

**Subject:** We start now! Open mail and web browser.

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time: 0:00:00
Role: all
Information type: alert
From: Massen

From: Messenger

**Subject:** Please, check your email to fill in the first questionnaire.

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time: 0:00:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in first questionnaire

**Body Text:** 

Please press the URL below to go to your questionnaire.

QuestionnairePre.html

Good luck

Time: 0:00:00 Role: all Information type: e-mail

From: account manager
Subject: Project Announcement

**Reference:** n.a.

**Body Text:** 

Dear colleague,

The management board of Real Reaction © electronics company has decided that we should develop a new product: a new television remote control. You are invited to take part in the design of this product. You will join a project, consisting of four participants:

- 1. The project manager
- 2. The industrial designer
- 3. The user interface designer
- 4. The marketing expert

The project will be carried out according to a specific design method, which will send to you by e-mail in a minute. In the appendix you will find your role instructions and a General Design method. You can also visit our web site company information.

Good luck,

Your account manager

#### **Appendices**

### **General Design method**

A general design method in three phases will be explained below with an example of a coffee machine.

#### Phase 1 is called the **functional design**. This consists of:

- User Requirements Specification: what needs and desires are to be fulfilled
  - o Example: hot coffee, quickly made
  - How: marketing research, interviews with future users, internet search;
- Technical Functions design: what effect should the apparatus have
  - Example: change coffee beans and water into coffee
  - o How: get inspired by other, similar designs
- Working design: how does the apparatus work to fulfill its functions
  - Example: electrical energy heats the water and grinds the beans; the grinded beans fall in the water; a filter separates the beans residue from the coffee.
  - How: get inspired by other, similar designs.

#### Phase 2 is called the **conceptual design.** This consists of:

- Conceptual specification of components, properties and materials
  - Example:
    - case (properties: solid; material: hard plastic)
    - electrical cable (off the shelf)
    - beans container (material: plastic)
    - coffee grinder (off the shelf)
    - electrical heater (off the shelf)
    - coffee container (properties: heat resistant; material: glass)
    - filter (off the shelf)
  - o How: get inspired by other, similar designs; be creative
- Conceptual specification of user interface
  - Example: on/off switch, on/off light
  - o How: get inspired by other, similar designs; be creative
- Trend watching
  - Example: pottery sells good these days
  - o How: do marketing research, get inspired on the web

### Phase 3 is called the **detailed design.** This consists of:

- Look-and-feel design
  - o Example: case in the form of a large beige pottery-like cup of coffee
  - o How: prototyping, using clay for the form and material samples.
- User interface design
  - o Example: a push button in the form of a coffee bean, with a LED in it.
  - o How: make a selection from existing interface solutions, or create a new one.
- Product Evaluation
  - Example: The coffee had the right temperature and was ready in within an acceptable period of time.

How: Collect the requirements and rank every requirement.

#### Team roles

The project manager coordinates the project and is overall responsible. He should guarantee that the project is carries out with the limits of time and budget. When a hard decision has to be taken by the design team, he has a veto. The project manager will also act as a chair of the project meetings and as a secretary by taking minutes of every meeting. At the end of the day, the project manager has to deliver a final report for the whole project. In this report is written what decisions were made in every meeting and what the solution of the final design looks like. The project manager can work on this report whenever he has time left between meetings. After the last meeting, the project manager has 10 minutes to finish this report.

The Industrial designer is responsible for:

- In the functional design phase: the working design
- In the conceptual design phase: the components concept design
- In the detailed design phase: the look-and-feel design

The user interface designer is responsible for:

- In the functional design phase: the technical functions design
- In the conceptual design phase: the user interface concept
- In the detailed design phase: the user-interface design

The marketing expert is responsible for:

- In the function design phase: the user requirements specification
- In the conceptual design phase: trend watching
- In the detailed design phase: product evaluation
- •

It is very well possible that you lack knowledge and experience to carry out your role. You will be assigned a personal coach who will guide you through your work.

## **Role instructions Secretary**

The Project Manager has to fulfill the secretary role. Here are the secretary role instructions on how-to-make-minutes:

- Obtain the meeting agenda, minutes from the last meeting, and any background documents to be discussed.
- Write "Minutes of the meeting of (exact association name)."
- Record the date, time and place of the meeting.
- Write the names of people present if there are fewer than 20.
- Note people who arrive late or leave early so that they can be briefed on what they missed.
- Write down items in the order that they are discussed. If item 8 on the agenda is discussed before item 2, keep the old item number but write item 8 in second place.
- Focus on recording actions taken by the group. Avoid writing down the details of each discussion.
- Distribute minutes to colleagues by putting them in the Project Documents folder.

Time: 0:00:00 Role: all Information type: web

From: Personal Coach
Subject: Corporate Website

**Body Text:** See \corporate\_website.html

Reference:



We put the fashion in electronics!

Welcome to the Real Reaction © corporation site.

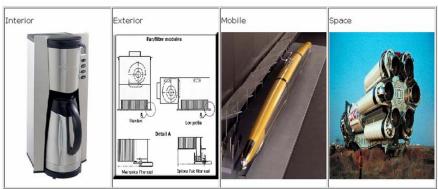


Real Remote is one of the main developers of everyday electronics. Through our research and development center, we respond to a broad mandaterom all sorts of customers. Our role as a trusted partner of International Remote Control Association gives us unique access to the full range of technology, planning, operations, and proprietary.

Furthermore, we are inspired by the latest fashion. Not only in electronics, but also in the latest trends in clothes and interior design. That is why our products always fit in your home!

Our motto is: We put the fashion in electronics!

#### Product range



**Attachment:** n.a.

**Role:** Industrial Designer

**Information type:** e-mail

From: Personal Coach
Subject: Project role

**Body Text:** 

## Instructions for Kick-off meeting

You are asked to:

- Prepare your role in the project
- During the kick-off meeting, get acquainted to your team members
- Bring in your first ideas about the new project

Your personal Coach

**Role:** User Interface Designer

**Information type:** e-mail

From: personal coach
Subject: Project role

**Body Text:** 

## Instructions for Kick-off meeting

You are asked to:

- Prepare your role in the project
- During the kick-off meeting, get acquainted to your team members
- Bring in your first ideas about the new project

Your personal Coach

**Role:** Marketing Expert

**Information type:** e-mail

From: Personal Coach
Subject: Project role

**Body Text:** 

## Instructions for Kick-off meeting

You are asked to:

- Prepare your role in the project
- During the kick-off meeting, get acquainted to your team members
- Bring in your first ideas about the new project

Your personal Coach

Role: Project Manager

**Information type:** e-mail

From: Personal Coach
Subject: Project role

**Body Text:** 

## Instructions for Kick-off meeting

#### You are asked to:

- Prepare your role in the project
- During the kick-off meeting, get acquainted to your team members
- Bring in your first ideas about the new project

Remark that as Project Manager, you are overall responsible for the success of the project. This doesn't only depend on time and money, but also team spirit.

#### You are asked to:

- Prepare the kick-off meeting. A pre-structured kick-off meeting PowerPoint will be send to you by e-mail.
- During the meeting, put effort in team building, and bring enthusiasm into the team. Take time to get your team member acquainted to each other.
- Also during the meeting, train your team members in using the smart boards.
- · Take minutes during the meeting.
- Work on the final report.

### Your personal Coach

Role: Project Manager

**Information type:** e-mail

From: Personal Coach

**Subject:** Example presentation Kick Off meeting

**Body Text:** Feel free to use the attached file for your presentation. - your

Coach

**Reference:** n.a.

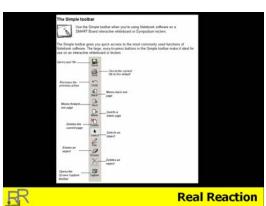
**Attachment:** 











## Tool Training 2

- Try out electronic whiteboard!
  - Every participant should draw its favorite animal and sum up its favorite characteristics
    - 1. On blank sheet
    - 2. With different colors
    - 3. With different pen widths

## **Project Finance**

- Selling price: 25 euro
- Profit aim: 50 MEuro
  - Market range: international
- Production costs: max. 12.50 euro



Real Reaction

## Discussion

- - Experience with remote control
  - First ideas new remote
  - Etc.

## Closing

- · Next meeting starts in 30 minutes
- Individual actions

  - ID: the working designUID: the technical functions design
  - ME: the user requirements specification
- Specific instructions will be send to you by your personal coach.

Real Reaction

Real Reaction



Real Reaction

Time: 0:15:00
Role: all
Information type: alert
From: messenger

**Subject:** 5 minutes to round up meeting preparations

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time: 0:16:00
Role: all
Information type: alert
From: messenger

**Subject:** Please, check your email to fill in questionnaire 01.

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time: 0:16:00
Role: all
Information type: e-mail
From: messenger

**Subject:** Please fill in questionnaire 01.

# **Body Text:**

Please press the URL below to go to your questionnaire.

Questionnaire01.html

Good luck

Time: 0:20:00
Role: all
Information type: alert
From: messenger

**Subject:** Move to meeting room and bring your laptop

Body Text:n.a.Reference:n.a.Attachment:n.a.

**Time:** 0:40:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** Warning: 5 minutes to end of meeting: start breaking off

Body Text:n.a.Reference:n.a.Attachment:n.a.

**Time:** 0:45:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** Warning: finish meeting NOW

Body Text: n.a. Reference: n.a. Attachment: n.a.

Time: 0:50:00 Role: all Information type: alert From: Messenger

Subject: Please, check your email to fill in questionnaire 02.

**Body Text:** n.a. Reference: n.a. **Attachment:** n.a.

Time: 0:50:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 02.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire02.html

Good luck

Role: Industrial Designer

**Information type:** web

From: Personal Coach

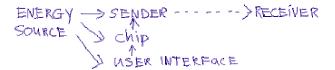
**Subject:** Inspiration for design

**Body Text:** n.a.

Reference:

#### A schematic view of the remote control

A remote control works as follows. The basic function of a remote control is to send messages to another system. An energy source feeds an integrated circuit (chip) that can compose messages, often in the form of infrared bits. A user interface controls the chip, and accordingly the messages.

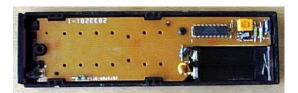


## Inside a TV Remote Control

If you are like most Americans, you probably pick up a TV remote control at least once or twice a day. Let's look inside and see how they work. Here is the remote we will be dissecting today:



The remote control's job is to wait for you to press a key, and then to translate that key-press into infrared (pronounced "infra-red") light signals that are received by the TV. When you take off the back cover of the control you can see that there is really just 1 part visible: a printed circuit board that contains the electronics and the battery contacts.



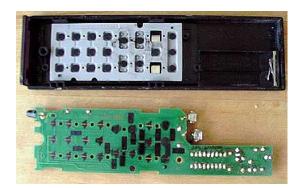
The components that you see here are typical for most remotes. You can see an integrated circuit (also known as a chip) labeled "TA11835". The chip is packaged in what is known as an 18 pin Dual Inline Package, or a DIP. To the right of the chip you can see a diode, a transistor (black, with three leads), a resonator (yellow), two resistors (green) and a capacitor

(dark blue). Next to the battery contacts there is a resistor (green) and a capacitor (tan disk). In this circuit, the chip can detect when a key is pressed. It then translates the key into a sequence something like morse code, with a different sequence for each different key. The chip sends that signal out to the transistor to amplify the signal and make it stronger.

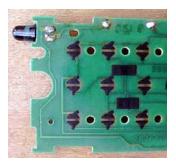


#### The Circuit Board

When you unscrew the circuit board and take it out, you can see that the circuit board is a thin piece of fiber glass that has thin copper "wires" etched onto its surface. Electronic parts are assembled on printed circuit boards because they are easy to mass produce and assemble. In the same way that it is relatively inexpensive to print ink onto a sheet of paper, it is inexensive to "print" copper wires onto a sheet of fiber glass. It is also easy to have a machine drop the parts (the chips, transistors, etc.) onto the sheet of fiberglass and then solder them on to connect them to the copper wires.



When you look at the board, you can see a set of contact points for the buttons. The buttons themselves are made of a thin rubbery sheet. For each button there is a black conductive disk. When the disk touches the contacts on the printed circuit board, it connects them and the chip can sense that connection.



At the end of the circuit board there is an infrared LED, or Light Emitting Diode. You can think of an LED as a small light bulb. Many LEDs produce visible light, but a remote's LED produces infrared light that is invisible to the human eye. It is not invisible to all eyes, however. For example, if you have a camcorder it can see the infrared light. Point your remote at the camera and push a button. You will be able to see the infrared light flashing in the viewfinder. The receptor in the TV is able to see infrared light as well. So the basic operation of the remote goes like this: You press a button. When you do that you complete a specific connection. The chip senses that connection and knows what button you pressed. It produces a morse-code-line signal specific to that button. The transistors amplify the signal and send them to the LED, which translates the signal into infrared light. The sensor in the TV can see the infrared light and "seeing" the signal reacts appropriately.

**Attachment:** n.a.

**Role:** User Interface Designer

**Information type:** web

From: Personal Coach

**Subject:** Inspiration for design

**Body Text:** n.a.

Reference:





The function of a remote control is basically to send messages to the television set. Example messages are: "switch on", "switch off", "switch to next channel", "switch to channel 9", "turn volume up", etc. Above are two examples of a remote control interface through which the functions are fulfilled.

**Attachment:** n.a.

**Role:** Marketing Expert

**Information type:** web

From: Personal Coach

**Subject:** Inspiration for design

**Body Text:** n.a.

Reference:

# **Marketing Report**

In our usability lab we observed the remote control use among subjects (N = 100) who also filled in a questionnaire. Users dislike the look-and-feel of current remote controls.

- 75% of users find most remote controls ugly
- 80% of users would spend more money when a remote control would look fancy

Current remote controls do not match well the operating behavior of the user

- 75% of users said they zap a lot
- 50% of users say they only use 10% of the buttons

Function	Frequency of use (# per hour)	Relevance [110]
Power	1	9
Channel selection	168	10
Volume selection	4	10
Audio settings (mono/stereo, pitch, etc.)	0.8	2
Screen settings (brightness, color, etc.)	0.5	1.5
Teletext (flipping pages included)	14	6.5
Channel settingsn	0.01	3

The biggest frustrations users expressed

- Remote controls are often lost somewhere in the room (50%)
- It takes too much time to learn how to use a new remote control (34%)
- Remote controls are bad for RSI (26%)

# Target groups in market

The market is divided in several groups.

Total sales in market is about 10 million units.

Age group	Market share
16-25	11,40%
26-35	18,10%
36-45	29,80%
46-55	21,60%
56-65	19,10%

# New features in remote controls

Would you prefer an LCD screen on a multifunction remote control?

Would you pay more for speech recognition in a remote control?

Age group	LCD	Speech Rec
16-25	81,20%	91,20%
26-35	66,30%	76,30%
36-45	55,30%	35,30%
46-55	32,20%	22,20%
56-65	12,30%	8,30%

# **Target audience**

Two target audiences for remote control are distinguished:

- Younger, age between 16 and 45, highly interested in features, more critical
- Older, age between 46 and 65, less interested in features, spends money more easily

**Attachment:** n.a.

**Time:** 0:50:00

Role: Project Manager

**Information type:** e-mail

From: Facilities Manager

**Subject:** Important, new airco installed.

**Body Text:** 

Dear Colleagues,

The adaptation of the air conditioning in wing C-E is in progress. Today we start replacing the (electric) control unit. This means that during several days, the mechanical airco/ventilation will not be active.

Regards, Facilities manager

Role: Project Manager

**Information type:** e-mail

**From:** Training Services

**Subject:** Examine this businesscase and improve your work.

**Body Text:** 

#### The Business Case for Collaboration

A brand new magazine supplement

**ARK Group** is launching **a brand new magazine supplement** focusing on **collaboration** and the benefits of creating cross-functional, flexible, and collaborative business processes in today's business environment.

The benefits of collaboration are tangible and real but achieving them will require a major paradigm shift, involving hearts, minds and technology.

Fortunately, new tools and techniques are already paving the way for new forms of collaboration, decreasing project timeframes, enhancing creativity, facilitating communication and the exchange of ideas, data and knowledge across networks of employees, partners, customers and suppliers.

## Particular topics of interest to be covered:

- Distributed project management
- Collaborative content management and enterprise portals
- The evolution from unified messaging to collaboration
- Multi-party chat and User Awareness tools
- · Audio, video and web conferencing
- Co-browsing software and Application sharing
- And more...

Learn how to instantly collaborate within the extended enterprise and add real value to your business processes.

Learn how to drive stronger financial performance and increase competitiveness through connected, collaborative, relationship-enabling and relationship-reliant modes of working.

#### Anti Spam policy!

We have a very strict anti spam policy. This message has been sent to you by ArkGroup, you are receiving messages via this system as you have previously expressed an interest in our events. It is of course possible that a third party may have added your name.

Role: Project Manager

**Information type:** e-mail

**From:** Training Services

**Subject:** An interesting taxonomy

**Body Text:** 

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**ARK Group** is launching **a brand new magazine supplement** focusing on **collaboration** and the benefits of creating cross-functional, flexible, and collaborative business processes in today's business environment.

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#### Anti Spam policy!

We have a very strict anti spam policy. This message has been sent to you by ArkGroup, you are receiving messages via this system as you have previously expressed an interest in our events. It is of course possible that a third party may have added your name.

Role: Industrial Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** Instructions for designing the working of devices

**Body Text:** 

Functional Design

## How to design the working of a remote control

In this first design phase: the functional design, you, as industrial engineer, have to come up with the **working design:** how does the apparatus *work* to fulfill its functions.

Remember from the explanation of the general design method (check your mail-box), the working design of the coffee machine was: electrical energy heats the water and grinds the beans; the grinded beans fall in the water; a filter separates the beans residue from the coffee.

#### You are asked to

- 1. Search the web for inspiration from similar devices (go to the home page of the web browser).
- Write your findings down in the pre-structured PowerPoint slides "working\_design.ppt", which will be send to you by e-mail. You can easily copy text or images from the documents and websites (just right-click the pictures) to your PowerPoint slides.
- 3. Save the PowerPoint slides in the shared folder on your desktop.
- 4. Prepare your presentation for the next meeting.

Your personal coach

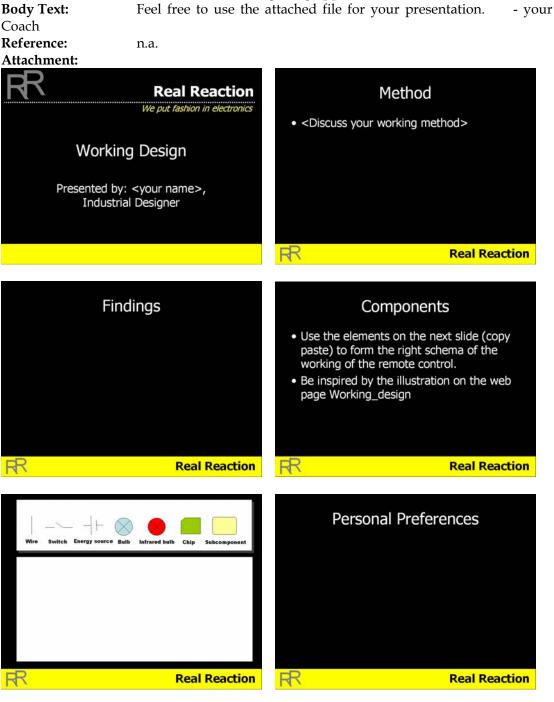
0:50:00 Time:

Role: industrial design

Information type: e-mail

From: Personal Coach

Prestructured working design ppt Subject:



**Role:** User Interface Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** Instructions for designing the function of devices

**Body Text:** 

Functional Design

## How to design the technical functions of a remote control

In this first design phase, the functional design, you, as an user interface designer, have to come up with the **technical functions design:** what effect should the apparatus have.

Remember from the explanation of the general design method (check your mail-box), the technical functions design of the coffee machine was: change coffee beans and water into coffee

You are asked to

- 1. Search the web for inspiration from similar devices (go to the home page of the web browser).
- 2. Write your findings down in the pre-structured PowerPoint slides, which will be send to you by e-mail. You can easily copy text or images from the documents and websites (just right-click the pictures) to your PowerPoint slides.
- 3. Save the PowerPoint slides in the shared folder on your desktop.
- 4. Prepare your presentation for the next meeting.

Your personal coach

Time: 0:50:00

Role: Industrial Designer

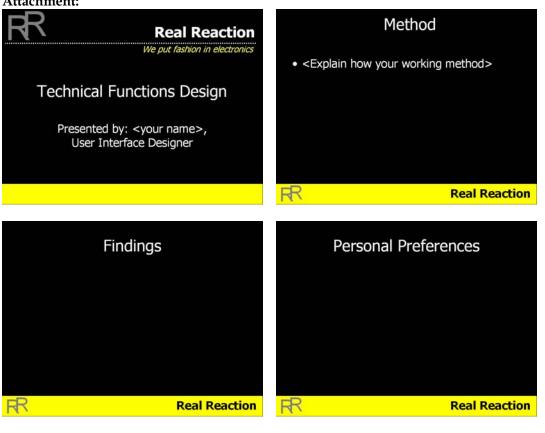
Information type: e-mail

From: Personal Coach

Subject: Prestructured technical functions design ppt **Body Text:** Some tips to do your work. - your Coach

Reference:

**Attachment:** 



**Role:** marketing expert

**Information type:** e-mail

From: Personal Coach

**Subject:** Instruction for specifying user-requirements

**Body Text:** 

Functional Design

## How to analyze the requirements for a remote control

In this first design phase: the functional design, you, as a marketing expert, has to come up with the **User requirements specification:** what needs and desires are to be fulfilled.

Remember from the explanation of the general design method (check your mail-box), the user requirements specification of the coffee machine was: *hot coffee, quickly made*. For a remote control, the user requirements specification may be somewhat more complicated, however.

#### You are asked to:

- 1. Search the web for information on remote control user needs and desires (go to the home page of the web browser).
- 2. Put your findings down in the pre-structured PowerPoint slides, which will be send to you by e-mail. You can easily copy text or images from the documents and websites (just right-click the pictures) to your PowerPoint slides.
- 3. Save the PowerPoint slides in the shared folder on your desktop.
- 4. Prepare your presentation for the next meeting.

## Your personal coach

**Time:** 0:50:00

**Role:** marketing expert

**Information type:** e-mail

From: Personal Coach

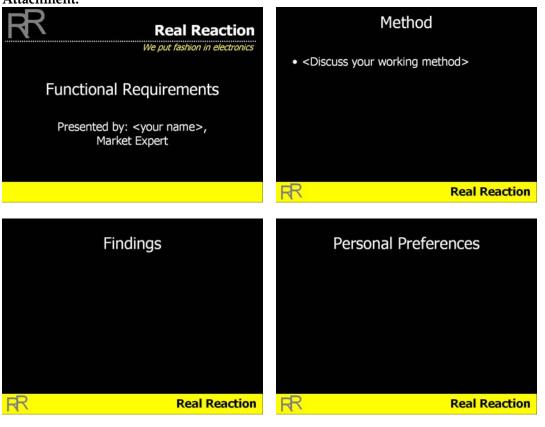
**Subject:** Prestructured user-requirements ppt

**Body Text:** Feel free to use the attached file for your presentation. - your

Coach

**Reference:** n.a.

**Attachment:** 



**Role:** project manage

**Information type:** e-mail

From: Personal Coach
Subject: Prepare meeting B

**Body Text:** 

Functional Design

## How to manage the functional design phase

Remember from the explanation of the general design method:

- User Requirements Specification: what needs and desires are to be fulfilled
- Technical Functions design: what effect should the apparatus have
- Working design: how does the apparatus work to fulfill its functions

In this phase you are asked to:

- 1. Prepare the presentation of the pre-structured PowerPoint slides, which will be send to you by e-mail.
- 2. Save the PowerPoint slides in the shared folder on your desktop.
- 3. Keep checking your mail for new project requirements from the Account Manager.
- 4. During the meeting, guarantee that the team reaches a decision on the target group and the functions of the remote control!
- 5. Remember to stimulate the team.
- 6. Put the minutes of the former meeting in the shared folder on your desktop.
- 7. Take minutes during the next meeting
- 8. Work on the final report.

Your Personal Coach

**Time:** 0:50:00

Role: Project Manager

**Information type:** e-mail

From: Personal Coach

**Subject:** Agenda presentation structure meeting B

**Body Text:** I would structure your agenda as such. - your Coach

**Reference:** n.a.

**Attachment:** 



# Functional Design meeting

Presented by: <name>, Project Manager

# Agenda

- Opening
- Project Manager = secretary (minutes)
- 3 presentations
- New project requirements
- Decision on remote control functions
- Closing (we have 40 minutes!)



# Closing

- · Now: lunch break
- Then 30 minutes of individual work
- PM: puts minutes in Project Documents folder
- Individual actions
  - ID: the components concept
  - UID: the user interface concept
  - ME: trend watching
- Specific instructions will be send to you by your personal coach.



Real Reaction

**Role:** Project Manager

**Information type:** e-mail

**From:** Account manager **Subject:** Prepare meeting B

**Body Text:** 

# New project requirements

The management board has new insights in the aim of your project. They have decided to put two additional requirements forward:

- 1. Teletext becomes outdated, since the popularity of the Internet.
- 2. The remote control should only be used for the television, otherwise the project becomes more complex, which endangers the time-to-market.
- 3. Our current customers are within the age group of 40+. New products should reach a new market with customers that are younger than 40.
- 4. Our corporate image should stay recognizable in our products. Our corporate color and slogan must be implemented in the new design.

Your account manager

1:10:00 Time: Role: all **Information type:** alert

From: Messenger

Subject: 5 minutes to round up meeting preparations

**Body Text:** n.a. Reference: n.a. **Attachment:** n.a.

1:11:00 Time: Role: all Information type: alert From:

Messenger

Subject: Please, check your email to fill in questionnaire 03.

**Body Text:** n.a. Reference: n.a. **Attachment:** n.a.

Time: 1:11:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 03.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire03.html

Good luck

1:15:00 Time: Role: all **Information type:** alert From: Messenger

Subject: Move to meeting room and bring your laptop

**Body Text:** n.a. Reference: n.a. **Attachment:** n.a.

**Time:** 1:50:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** Warning: 5 minutes to finish meeting

Body Text: n.a. Reference: n.a. Attachment: n.a.

**Time:** 1:55:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** Warning: finish meeting NOW!

Body Text: n.a. Reference: n.a. Attachment: n.a.

Time: 1:55:00
Role: all
Information type: alert
From: Messenger

**Subject:** Please, check your email to fill in questionnaire 04.

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time: 1:55:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 04.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire04.html

Good luck

Time: 2:00:00
Role: all
Information type: alert
From: Messen

From: Messenger Subject: Lunch break!

Body Text: n.a. Reference: n.a. Attachment: n.a.

**Time:** 2:55:00

Role: Industrial Designer

**Information type:** web

From: Personal Coach

**Subject:** Inspiration for design

**Body Text:** n.a.

Reference:

# Target audience product style

A quick scan of the current market in consumer goods revealed several exemplars of popular products.

# Senior, wealth (+45)

- Traditional materials: wood
- Shapes are straightforward: form follows function
- Luxurious style



# Young, dynamic (<45)

- Materials: soft, primary colors
- Shapes are curved, round
- Sports and gaming define style characteristics



**Attachment:** n.a.

**Time:** 2:55:00

**Role:** User Interface Designer

**Information type:** web

From: Personal Coach

**Subject:** Inspiration for design

**Body Text:** n.a.

Reference:

# **User interface**

The aspects of a computer system or program which can be seen (or heard or otherwise perceived ) by the human user, and the commands and mechanisms the user uses to control its operation and input data.

A graphical user interface emphasizes the use of pictures for output and a pointing device such as a mouse for input and control whereas a command line interface requires the user to type textual commands and input at a keyboard and produces a single stream of text as output.

Here are some examples of remote controls:



The interface exists of a clutter of button functions, colors, and forms. This inconsistent use of interface is confusing and doesn't improve the use of the product.

Here are a few examples of new user interface components for the remote control

# Voice recognition

Control multiple devices and surf your favorite channels with your voice! Stores Up to 80 speech samples, Controls 4 Devices -TV, Cable/Satellite, VCR/DVD & Audio. Record your own verbal labels that is connected to a remote control function.



# LCD/menu display

A spinning wheel with LC display in the famous iPod music player. This kind of richer, menu-oriented interaction is more suited to young people. Older people prefer a 'one-button, one-function' type of interaction.



# Integrated scroll and push button

A scroll button with integrated push button (such as in modern computer mouse) at the side of the remote:



# TV remote control for special user

# Children

Program in only the channels you want your kids to watch - all others are automatically blocked! Child Friendly design and ease-of-operation ensures kids will love using their own remote! Program in up to 10, 4-Digit channels. Dedicated buttons make getting to channels easy. Supports TV's, TV/VCR, Analog and Digital Cable, DirecTV, Dish, TiVo, ReplayTV and Ultimate TV. Secured and hidden programming and battery covers protect your settings. New version offers even more features and options.



# **Elderly**

Big Button, Oversized TV Remote is the largest universal remote control available!



This jumbo universal remote control is almost impossible to misplace or lose.

Our oversized programmable remote control has big 3/4" buttons that light when pressed. The numbers are on round buttons, the TV channels scroll on triangles on the left and the volume adjustments on triangles on the right. This arrangement is a lot less confusing for most people.

# Turn down the TV

You are sitting in front of the TV, and want to turn down the sound. You grab the remote control, scan for the button with the down-arrow and push it. The TV gets louder! You pushed the up-arrow button instead of the down-arrow button. Why?

The letter "V" for volume is on the two volume control buttons. Although the buttons are shaped like up- and down-arrows for increasing and decreasing the volume, the letter "V" looks like a down-arrow. When you are scanning the remote control for a down-arrow, you see the "V" as a down-arrow, and press it. Unfortunately, the first "V" you see is on the up-arrow!



Attachment:

n.a

**Role:** Marketing Expert

**Information type:** web

From: Personal Coach

**Subject:** Inspiration for design

**Body Text:** n.a

Reference:

# **Executive Summary**

Recent investigation of the remote control market shows the following.

- The most important aspect for remote controls happens to be a fancy lookand-feel, instead of the current functional look-and-feel. This aspect is twice as important as the second aspect.
- The second most important aspect is that a remote control should be technological innovative. In turn, this aspect is twice as important as the next aspect.
- The third most important aspect is that the remote control should be easy-to-use.

# Recent Fashion Update

Fashion watchers in Paris and Milan have detected the following trends.

- This year, *fruit & vegetables* will be the most important theme for cloths, shoes, and furniture.
- Also in contrast to last year, the feel of material is expected to be *spongy*.

**Attachment:** n.a.

Role: Project Manager

**Information type:** e-mail

**From:** Training Services

**Subject:** A interessting masterclass for you!

**Body Text:** 

# KM update

# **THE INTERVIEW: Dave Thompson, Spin**

KM Update talks to Dave Thompson, information officer at the Society for Public Information Networks, about the impact of KM in the public sector in the UK.

### FROM THE ARCHIVE: The knowledge capital of nations

Knowledge has become the key source of wealth at an organisational and indeed a national level, and enterprises are in danger of undermining their future success by focusing exclusively on financial assets in their accounting procedures. Leif Edvinsson describes the global transition towards an economy based on intellectual capital assets, and calls for organisations to recognise the importance of adopting an IC-based approach.

### **CASE STUDY: KM at Bevan Ashford**

Successful knowledge management is a firm-wide phenomenon, characterised by a sharing and learning environment and reinforced by the active involvement of management, fee-earners and support departments. Heather Robinson assesses how far Bevan Ashford has come in its KM journey, and how professional support lawyers in particular have helped in developing a knowledge culture that wins and retains clients.

# Consulting and in tegration spending on the increase

Revenues from IT professional consulting will rise six per cent in 2003, and nine per cent from integration services, according to a report by analyst organisation Yankee Group.

### Majority of companies opt for single provider

Over two-thirds of end users prefer to buy IT products and services from a single, large provider, rather than those that partner with systems integrators and independent software vendors (ISVs), according to a survey by Merrill Lynch.

### Travel fears offer boost to virtual-meeting companies

Fears surrounding air travel since the start of conflict in the Gulf and a perceived increase in the risk of terror attacks have boosted the fortunes of virtual-meeting companies.

# KM global update

All the latest knowledge-management news from around the world

### **KM** industry news

Updates on the latest product releases and industry developments

**Role:** project manager

**Information type:** e-mail

**From:** Training Services

**Subject:** Another taxonomy, very interesting.

**Body Text:** 

## **The Business Case for Collaboration**

A brand new magazine supplement

**ARK Group** is launching **a brand new magazine supplement** focusing on **collaboration** and the benefits of creating cross-functional, flexible, and collaborative business processes in today's business environment.

The benefits of collaboration are tangible and real but achieving them will require a major paradigm shift, involving hearts, minds and technology.

Fortunately, new tools and techniques are already paving the way for new forms of collaboration, decreasing project timeframes, enhancing creativity, facilitating communication and the exchange of ideas, data and knowledge across networks of employees, partners, customers and suppliers.

# Particular topics of interest to be covered:

- Distributed project management
- Collaborative content management and enterprise portals
- The evolution from unified messaging to collaboration
- Multi-party chat and User Awareness tools
- Audio, video and web conferencing
- Co-browsing software and Application sharing
- And more...

Learn how to instantly collaborate within the extended enterprise and add real value to your business processes.

Learn how to drive stronger financial performance and increase competitiveness through connected, collaborative, relationship-enabling and relationship-reliant modes of working.

### Anti Spam policy!

We have a very strict anti spam policy. This message has been sent to you by ArkGroup, you are receiving messages via this system as you have previously expressed an interest in our events. It is of course possible that a third party may have added your name.

Role: Industrial Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** Instructions for designing the working of devices

**Body Text:** 

Conceptual Design

# How to specify the components, properties, and materials of a remote control.

In this second design phase: the conceptual design, you, as industrial engineer, has to come up with the **conceptual specification of components, properties and material.** 

Remember from the explanation of the general design method (check your mailbox), the conceptual specification of the components, properties and material of the coffee machine was:

- case (properties: solid; material: hard plastic)
- electrical cable (off the shelf)
- beans container (material: plastic)
- coffee grinder (off the shelf)
- electrical heater (off the shelf)
- coffee container (properties: heat resistant; material: glass)
- filter (off the shelf)

### You are asked to:

Search the web for inspiration from similar devices (go to the home page of the web browser).

- Put your findings down in the pre-structured PowerPoint slides, attached to this e-mail.
- 2. Save the PowerPoint slides in the shared folder on your desk top.
- 3. Prepare your presentation for the next meeting.

Your personal coach

**Time:** 2:55:00

Role: Industrial Designer

**Information type:** web

From: Personal Coach

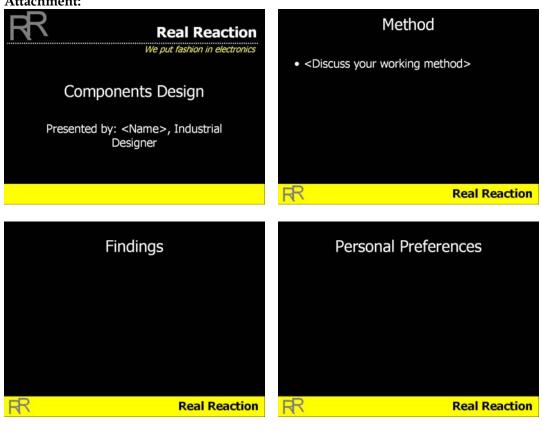
**Subject:** Here a prestructured ppt for your presentation

Body Text: Feel free to use the attached file for your presentation. - your

Coach

**Reference:** n.a.

**Attachment:** 



**Role:** User Interface Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** instructions for designing the function of devices

**Body Text:** 

Conceptual Design

# How to specify the user interface of a remote control

In this second design phase: the conceptual design, you, as user interface designer, has to come up with the **conceptual user interface.** 

Remember from the explanation of the general design method (check your mailbox), the conceptual specification of the user interface of the coffee machine was: on/off switch and on/off light. The user interface of a remote control may be somewhat more complicated, however.

### You are asked to:

- 1. Search the web for inspiration from similar devices (go to the home page of the web browser).
- 2. Put your findings down in the pre-structured PowerPoint slides, which will be send to you by e-mail.
- 3. Save the PowerPoint slides in the shared folder on your desktop.
- 4. Prepare your presentation for the next meeting.

Your personal coach

**Time:** 2:55:00

Role: User Interface Designer

**Information type:** e-mail

From: Personal Coach

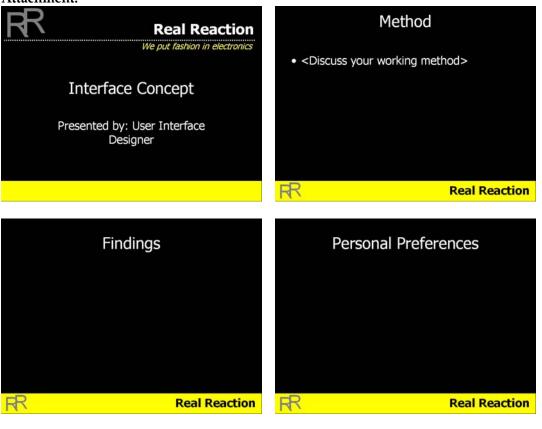
**Subject:** Here a prestructure ppt for your presentation

**Body Text:** Feel free to use the attached file for your presentation.

Coach

**Reference:** n.a.

**Attachment:** 



- your

**Role:** marketing expert

**Information type:** e-mail

From: Personal Coach

**Subject:** How to watch market trends

**Body Text:** 

Conceptual Design

# How to watch market trends

In this second design phase: the conceptual design, you, as a marketing expert, have to come up with the **market trends:** what users preferences are there in the near future.

### You are asked to

- Search the web for market trends (go to the home page of the web browser).
- Write your findings down in the pre-structured PowerPoint slides "Market\_trends.ppt", which will be send to you by e-mail.
- Save the PowerPoint slides in the shared folder on your desktop.
- Prepare your presentation for the next meeting.

Your personal coach

**Time:** 2:55:00

**Role:** user interface designer

**Information type:** e-mail

From: Personal Coach

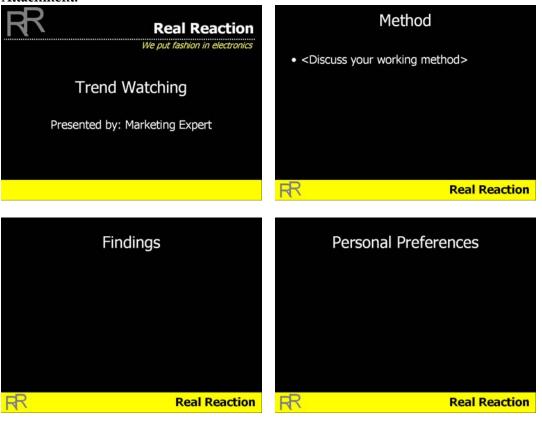
**Subject:** Here a prestructure ppt for your presentation

**Body Text:** Feel free to use the attached file for your presentation .

Coach

**Reference:** n.a.

**Attachment:** 



**Time:** 3:00:00

**Role:** Industrial Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** Instructions for designing the working of devices

**Body Text:** 

## **Current possibilities on components**

Here is a list of components that Real Reaction © can provide for your design.

As energy source we offer a basic battery or, more ingenious, a hand dynamo (such as in 50 years old torches), a kinetic provision of energy (such as some modern watches that you shake casually to provide energy), or use of solar cells.

Our products can be delivered in different cases. The general case is uncurved (flat). A more original case is single curved or even double curved.

Furthermore we offer case material supplements, such as plastic, rubber (such as used in anti-RSI stress balls), wood, and titanium (which we also use in our production of space designs). Unfortunately, we can't use the titanium for the double curved cases and latex cases won't allow the use of solar cells as energy source.

For the interface, we are experts on push buttons. The last decade we also developed scroll, wheels with optional integrated push button (such as in the modern computer mouse), and liquid crystal displays (LCD). Multiple scroll buttons are applicable. Note that, if you use a rubber double curved case, you must use rubber push buttons.

For the electronics, we can use a simple, a regular or an advanced chip on print. The chip on print includes an infrared sender. Furthermore we just developed a sample sensor/ sample speaker.

Note that a push button requires a simple chip, but a scroll wheel requires minimally a regular chip, which is in a higher price range. The display requires an advanced chip, which in turn is more expensive than the regular chip.

The manufacturing division

**Role:** User-interface Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** instructions for designing the function of devices

**Body Text:** 

# Latest development in user interface design

Our division has developed a new speech recognition feature: the integrated, programmable, sample sensor/sample speaker unit. This very small electronic unit will give a standard answer after it recognizes a question. You can program the question sample and answer sample as follows. You say "Record", followed by your question sample and, after three seconds, the answer sample. We have already applied the feature in our new coffee machines. You can say "Good morning, coffee machine", and it answers with a friendly female voice: "Good morning, Joe!", or any other sample you have recorded.

The manufacturing division

**Time:** 3:00:00

Role: Project Manager

**Information type:** e-mail

From: Personal Coach

**Subject:** Example presentation structure meeting C

**Body Text:** 

Conceptual Design

# How to manage the conceptual design phase

Remember from the explanation of the general design method:

- Conceptual specification of components, properties and materials
- Conceptual specification of user interface
- Trend watching

In this phase you are asked to:

- 1. Prepare the presentation of the pre-structured PowerPoint slides, which will be send to you by e-mail.
- 2. Save the PowerPoint slides in the shared folder on your desktop.
- 3. During the meeting, guarantee that the team reaches a decision on the concepts of the remote control!
- 4. Remember to stimulate the team.
- 5. Put the minutes of the former meeting in the shared folder on your desktop.
- 6. Take minutes during the next meeting.
- 7. Work on the final report.

### Your Personal Coach

**Time:** 3:00:00

Role: Project Manager

**Information type:** e-mail

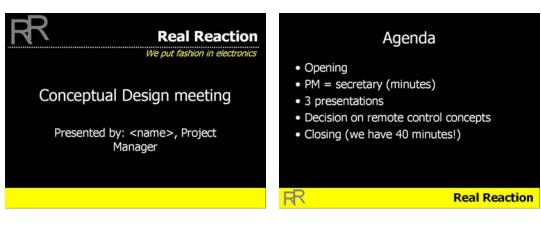
From: Personal Coach

**Subject:** Agenda presentation structure meeting C

**Body Text:** This is an agenda example for the meeting. - your Coach

**Reference:** n.a.

**Attachment:** 



# Decisions • Components concept? - Energy? - Chip on print - Case • User interface concept? - Interface • Type • Supplements Real Reaction



3:15:00 Time: Role: all **Information type:** alert

From: Messenger

Subject: 5 minutes to round up meeting preparations

**Body Text:** n.a. Reference: n.a. **Attachment:** n.a.

Time:3:16:00Role:allInformation type:alertFrom:Messenger

**Subject:** Please, check your email to fill in questionnaire 05.

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time: 3:16:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 05.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire05.html

Good luck

Time: 3:20:00
Role: all
Information type: allert
From: Messenger

**Subject:** Move to meeting room and bring your laptop

Body Text:n.a.Reference:n.a.Attachment:n.a.

**Time:** 3:55:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** Warning: 5 minutes to finish meeting

Body Text: n.a. Reference: n.a. Attachment: n.a.

Time: 4:00:00

Project Manager alert Role:

**Information type:** 

From: Messenger

Subject: Warning: finish meeting NOW

**Body Text:** n.a. Reference: n.a. **Attachment:** n.a.

Time: 4:05:00
Role: all
Information type: alert
From: Messenger

**Subject:** Please, check your email to fill in questionnaire 06.

Body Text:n.a.Reference:n.a.Attachment:n.a.

Time:4:05:00Role:allInformation type:e-mailFrom:Messenger

**Subject:** Please fill in questionnaire 06.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire06.html

Good luck

Role: Project Manager

**Information type:** e-mail

From: Training Services
Subject: New Masterclasses!

**Body Text:** 

## KM update

# THE INTERVIEW: Dave Thompson, Spin

KM Update talks to Dave Thompson, information officer at the Society for Public Information Networks, about the impact of KM in the public sector in the UK.

## FROM THE ARCHIVE: The knowledge capital of nations

Knowledge has become the key source of wealth at an organisational and indeed a national level, and enterprises are in danger of undermining their future success by focusing exclusively on financial assets in their accounting procedures. Leif Edvinsson describes the global transition towards an economy based on intellectual capital assets, and calls for organisations to recognise the importance of adopting an IC-based approach.

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### Consulting and integration spending on the increase

Revenues from IT professional consulting will rise six per cent in 2003, and nine per cent from integration services, according to a report by analyst organisation Yankee Group.

# Majority of companies opt for single provider

Over two-thirds of end users prefer to buy IT products and services from a single, large provider, rather than those that partner with systems integrators and independent software vendors (ISVs), according to a survey by Merrill Lynch.

# Travel fears offer boost to virtual-meeting companies

Fears surrounding air travel since the start of conflict in the Gulf and a perceived increase in the risk of terror attacks have boosted the fortunes of virtual-meeting

companies.

# KM global update

All the latest knowledge-management news from around the world

KM industry news
Updates on the latest product releases and industry developments

Role: Project Manager

**Information type:** e-mail

From: Training Services
Subject: How to prevent spam!

**Body Text:** 

### The Business Case for Collaboration

A brand new magazine supplement

**ARK Group** is launching a brand new magazine supplement focusing on collaboration and the benefits of creating cross-functional, flexible, and collaborative business processes in today's business environment. The benefits of collaboration are tangible and real but achieving them will require a major paradigm shift, involving hearts, minds and technology.

Fortunately, new tools and techniques are already paving the way for new forms of collaboration, decreasing project timeframes, enhancing creativity, facilitating communication and the exchange of ideas, data and knowledge across networks of employees, partners, customers and suppliers.

# Particular topics of interest to be covered:

- Distributed project management
- Collaborative content management and enterprise portals
- The evolution from unified messaging to collaboration
- Multi-party chat and User Awareness tools
- Audio, video and web conferencing
- Co-browsing software and Application sharing
- And more...

Learn how to instantly collaborate within the extended enterprise and add real value to your business processes.

Learn how to drive stronger financial performance and increase competitiveness through connected, collaborative, relationship-enabling and relationship-reliant modes of working.

# Anti Spam policy!

We have a very strict anti spam policy. This message has been sent to you by ArkGroup, you are receiving messages via this system as you have previously expressed an interest in our events. It is of course possible that a third party may have added your name.

Role: Industrial Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** instructions for form specification

**Body Text:** 

Detailed Design

# How to design the look-and-feel

In this third and final design phase: the detailed design, you, as industrial engineer and user-interface designer, have to come up with the *look-and-feel* design: how does the apparatus look like and feel like.

You are asked to:

Work together on a drawing of the prototype remote control.

- 1. You can use the smart board flip over program with its color range.
- 2. Specify the case:
  - a. Form
  - b. Material
  - c. Color
- 3. Specify the interface elements (button, scroll wheel, etc.), including:
  - a. Function
  - b. Position
  - c. Form
  - d. Material
  - e. Color
- 4. Prepare your presentation for the next and final meeting.

Your personal coach

**Role:** User Interface Designer

**Information type:** e-mail

From: Personal Coach

**Subject:** instructions for physical user-interface specification

**Body Text:** 

Detailed Design

# How to design the look-and-feel

In this third and final design phase: the detailed design, you, as industrial engineer and user-interface designer, have to come up with the *look-and-feel* design: how does the apparatus look like and feel like.

You are asked to:

Work together on a drawing of the prototype remote control.

- 5. You can use the smart board flip over program with its color range.
- 6. Specify the case:
  - a. Form
  - b. Material
  - c. Color
- 7. Specify the interface elements (button, scroll wheel, etc.), including:
  - a. Function
  - b. Position
  - c. Form
  - d. Material
  - e. Color
- 8. Prepare your presentation for the next and final meeting.

Your personal coach

**Role:** Marketing Expert

**Information type:** e-mail

From: Personal Coach
Subject: evaluation-criteria

**Body Text:** 

Detailed Design

# How to evaluate the prototype

In the detailed design phase meeting your role is to prepare the evaluation of the new design. Evaluate with a seven-point scale as following:

1. The remote control is according criteria X.

True						False
1	2	3	4	5	6	7

You should base the collection of criteria on the user requirements and trends found in the marketing reports and the marketing strategy of the Real Reaction © electronics company.

Present your scale on the smart board in a word document and decide as a team on the rating. At the end, calculate the average score.

Your personal coach

**Time:** 4:10:00

**Role:** Marketing Expert

**Information type:** e-mail

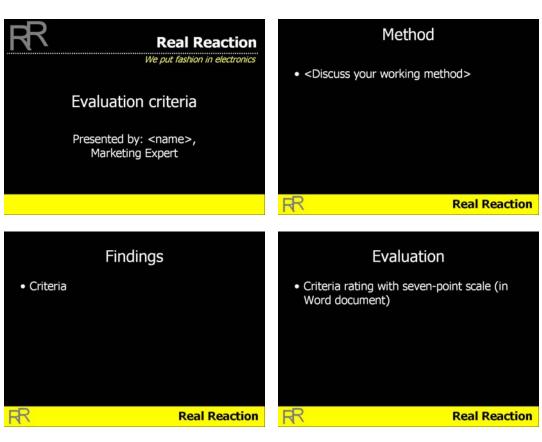
From: Personal Coach Subject: criteria table

**Body Text:** Feel free to use the attached file for your presentation. - your

Coach

**Reference:** n.a.

**Attachment:** 



Role: Project Manager

**Information type:** e-mail

From: Personal Coach

**Subject:** Preperation meeting D

**Body Text:** 

Detailed Design

# How to manage the detailed design phase

Remember from the explanation of the general design method:

- Look-and-feel design
- User interface design
- Product Evaluation

In this phase you are asked to:

Prepare the presentation of the pre-structured PowerPoint slides, which will be send to you by e-mail.

- 1. Save the PowerPoint slides in the shared folder on your desktop.
- 2. Keep checking your mail for new project requirements from the Account Manager.
- 3. During the meeting, guarantee that the team reaches a decision on the details of the remote control.
- 4. The design solution must be within the budget! Use the product\_costs.xls Excel sheet, sent to you by mail, to calculate the costs. To use the Excel sheet during the meeting, store it in the Project Documents folder.
- 5. Remember to stimulate the team.
- 6. Put the minutes of the former meeting in the shared folder on your desktop.
- 7. Work on the final report.
- 8. After the last meeting, be sure to specify the agreed design in the final report. Another team needs it for further development.

Your Personal Coach

Role: Project Manager

Information type: e-mail

From: Personal Coach

Subject: Example presentation structure meeting D

**Body Text:** Feel free to use the attached file for your presentation.

Coach

Reference: n.a.

**Attachment:** 



# Agenda

- your

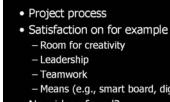
- Opening
- PM = secretary (minutes)
- Prototype presentation
- Evaluation criteria
- Finance
- Production evaluation
- Closing (we have 40 minutes!)

**Real Reaction** 

Project evaluation

# **Finance**

- Excel sheet
  - Calculate production costs
  - Are the cost under 12.50 euro?
    - No: redesign
    - Yes: project evaluation (next slide)



- Means (e.g., smart board, digital pen, etc.)

· New ideas found?

Real Reaction

# Closing

Real Reaction

- Are the costs within the budget?
- Is the project evaluated?

Then: Celebration!

Real Reaction

Role: Project Manager

**Information type:** e-mail

From: Account Manager Subject: criteria spread sheet

**Body Text:** Feel free to use the attached file for your presentation. - your

Coach

**Reference:** n.a.

**Attachment:** 

xx	Price	#	Sum	
Energy source				Fill in the number of components you plan to use in your device
hand dynamo	1	4	0	and the total cost will be automatically calculated.
battery	2	4	0	
kinetic	3		0	
solar cells	4		0	
Electronics			0	
simple chip on print	1		0	
regular chip on print	2		0	
advanced chip on print	3		0	
sample sensor / sample speaker	4		0	
Case			0	
uncurved/flat	1		0	
single curved	2		0	
double curved	3		0	
case material supplements				1 /
plastic	0		0	
wood	1		0	
rubber	2		0	
titanium	3		0	
special colour	0,5		0	
Interface			0	1 /
push button	0,5		0	
scroll wheel	1,3		0	
integrated scroll wheel/ pushbutton	2,5		0	
LC display	3		0	]/
button supplements				
special colour	0,2		0 /	
special form	0,4		0 /	
special material (rubber, wood, titanium)	0,6		0,/	
Total			0	

Role: Project Manager

**Information type:** e-mail

From: Personal Coach

**Subject:** How to improve your knowledge management

**Body Text:** 

# KM Europe 2004

The world's largest and most important KM event began today in Amsterdam RAI, opening with keynote presentations from Dorothy Leonard and Dave Snowden, masterclasses with Verna Allee and Chris Collison, as well as a packed programme of workshops, case studies, presentations and one-to-one meetings.

KM Europe 2004 also features a full exhibition featuring over 100 leading knowledge-based companies, which is free to attend. As one visitor to last year's exhibition said, "It is easy to see why KM Europe has become the annual meeting place for the KM community."

Don't miss out on the knowledge event of the year. With two full days still to run, KM Europe 2004 will be featuring keynote presentations from Carla O'Dell, Verna Allee, Fons Trompenaars and Ciaran McGinley. Visitors will also have the opportunity to find answers to their most important KM questions and network with their peers, leading solution providers and the thought leaders who are driving knowledge management forwards into 2004.

KM Europe 2004 takes place at the RAI in Amsterdam, the Netherlands, and runs from the 10-12 November. Entry is free to all visitors. For further information, or to reserve your place at any of the four remaining keynote presentations, call +44 (0)20 8785 2700 or visit.

Time: 4:25:00
Role: all
Information type: alert
From: Messenger

rioni. Wiessenger

**Subject:** 5 minutes to round up meeting preparations **Body Text:** n.a.

Time: 4:26:00 Role: all Information type: alert

From: Messenger

**Subject:** Please, check your email to fill in questionnaire 07.

Time: 4:26:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 07.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire07.html

Good luck

**Reference:** n.a. **Attachment:** n.a.

Time: 4:30:00
Role: all
Information type: alert
From: Messenger

**Subject:** Move to meeting room and bring your laptop

**Time:** 5:10:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** warning: 5 minutes to finish meeting

**Time:** 5:15:00

Role: Project Manager

**Information type:** alert

From: Messenger

**Subject:** warning: finish meeting now

Time: 5:16:00
Role: all
Information type: alert
From: Messenger

**Subject:** Please, check your email to fill in questionnaire 08.

Time: 5:16:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 08.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire08.html

Good luck

**Reference:** n.a. **Attachment:** n.a.

Time: 5:21:00
Role: all
Information type: alert
From: Messenger

**Subject:** Please, check your email to fill in questionnaire09.

Time: 5:21:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in questionnaire 09.

**Body Text:** 

Please press the URL below to go to your questionnaire.

Questionnaire09.html

Good luck

**Reference:** n.a. **Attachment:** n.a.

Time: 5:31:00
Role: all
Information type: alert
From: Messenger

**Subject:** Please, check your email to fill in your last questionnaire.

Time: 5:31:00
Role: all
Information type: e-mail
From: Messenger

**Subject:** Please fill in your last questionnaire.

**Body Text:** 

Please press the URL below to go to your questionnaire.

QuestionnairePost.html

Good luck

**Reference:** n.a. **Attachment:** n.a.

# 9 Appendix B: Questionnaires

In this appendix, the questionnaires referred to in the scenario are described.

#### QuestionnairePre

This questionnaire deals with your personal experiences.

### Background information

- 1. What is your gender?
  - o Male
  - Female
- 2. What is your age?
- 3. What is your current education type or highest earned degree?
  - o WO
  - o HBO
  - o MBO
  - o LBO
  - o Other:
- 4. What is your current profession / study?

### Technology experience

- 5. How often do you use a computer?
  - o Never
  - o Monthly
  - Weekly
  - Daily
- 6. How often do you use the Internet for browsing webpages?
  - o Never
  - o Monthly
  - Weekly
  - o Daily less than 1 hour
  - o Daily 1 to 3 hours
  - o Daily more than 3 hours
- 7. How often do you use the Internet for email?
  - o Never
  - o Monthly
  - Weekly
  - o Daily less than 1 hour
  - o Daily 1 to 3 hours
  - o Daily more than 3 hours
- 8. How often do you use the Internet for chatting?
  - o Never

- o Monthly
- Weekly
- o Daily less than 1 hour
- o Daily 1 to 3 hours
- o Daily more than 3 hours
- 9. How often do you search for multi-media content (audio (e.g. music) or video (e.g. movies)) on the computer?
  - Never
  - Monthly
  - o Weekly
  - o Daily less than 1 hour
  - o Daily 1 to 3 hours
  - o Daily more than 3 hours
- 10. Which of the following devices do you own or use regularly?
  - Laptop
  - o GSM
  - o PDA
  - o MP3-player
  - None of the above

### Meeting experience

- 11. How often do you participate in meetings?
  - o Never
  - o Monthly
  - Weekly
  - o Daily once
  - o Daily more than once
- 12. What is approximately the typical size of your meetings? Number of participants:
- 13. What is approximately the typical length of your meetings? Minutes:
- 14. How would you characterize your typical meetings (e.g. subject matter, objective, atmosphere)?
- 15. What role(s) do you typically perform in meetings?
  - o Chairman
  - o Draw up the minutes
  - Participant
  - Other:
- 16. Do you feel that the objectives for your meetings are generally attained?
  - o Never
  - o Hardly ever
  - Sometimes
  - o Most of the times
  - o Always

- 17. Do you feel that the time for your meetings is generally well-spent?
  - o Never
  - o Hardly ever
  - Sometimes
  - Most of the times
  - Always
- 18. Do you generally like to participate in your meetings?
  - o Never
  - Hardly ever
  - Sometimes
  - Most of the times
  - Always
- 19. Which of the following means do you use before a meeting (to prepare for the meeting)?
  - o Minutes of the previous meeting(s)
  - o Related documents
  - o Agenda
  - o Personal recollection
  - o Contact other participants
  - Personal notes of the previous meeting(s)
  - Means to prepare a presentation
  - Pictures of previous meeting(s)
  - o Audio recording of previous meeting(s)
  - Video recording of previous meeting(s)
  - Consult external information sources (e.g. internet)
  - o Contact external people (face-to-face, e-mail, telephone)
  - o Other:
- 20. Which of the following means do you use during a typical meeting?
  - Minutes of the previous meeting(s)
  - Use and annotate related documents
  - o Agenda
  - o Personal recollection
  - Make personal notes
  - o Make/discuss shared notes (e.g. on blackboard, whiteboard, flip-over)
  - o Give/discuss a presentation
  - o Make pictures
  - o Make audio recording
  - o Make video recording
  - o Consult external information resources (e.g., internet)
  - Contact external people (e-mail, telephone)
  - o Audio conferencing tools
  - Video conferencing tools
  - Other:
- 21. Which of the following means do you typically use after a meeting (to process the results)?
  - Minutes of the previous meeting(s)
  - Related documents

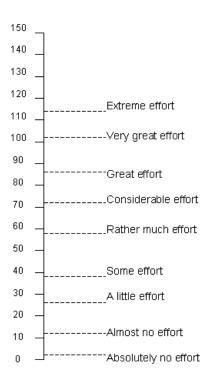
- o Agenda
- o Personal recollection
- Contact other participants
- Personal notes of the previous meeting(s)
- Means to prepare a presentation
- o Pictures of previous meeting(s)
- Audio recording of previous meeting(s)
- Video recording of previous meeting(s)
- Consult external information sources (e.g., internet)
- Contact external people (face-to-face, e-mail, telephone)
- o Other:
- 22. What types of information do you typically include in your personal notes?
  - o Decisions taken
  - Things to do
  - o Things you want to tell others
  - Reminders
  - Reference materials (names, phone number, webpages)
  - o "Doodles" (absent-minded scribbles)
  - o Other:
- 23. When you have missed a meeting, how do you catch up?
  - Read meeting minutes
  - Ask other participants
  - Consult notes of other participants
  - o Consult audio recording
  - Consult video recording
  - o Other:

### Design projects

- 24. Do you have experience with working in project teams?
  - o No
  - o Hardly any
  - Average
  - A lot
- 25. Do you have knowledge of or experience with product or service development?
  - No
  - o Hardly any
  - Average
  - o A lot

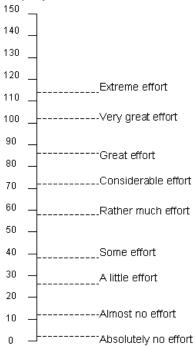
# Questionnaire01/03/05/07

Please indicate, by filling in a number between 0 and 150, how much effort it took for you to complete the task you have just finished.



#### Questionnaire02/04/06/08

Please indicate, by filling in a number between 0 and 150, how much effort it took for you to complete the task you have just finished.



Rank the group members (including you) in order of influence on the group decisions. Give the less influential person a 1, the more influential persons a 2 and 3, and the most influential person a 4. Please give all members a number and use a certain number just once.

- □ Project manager
- □ Industrial designer
- □ User interface designer
- ☐ Marketing expert

Please fill in this questionnaire.

This questionnaire is not a test for measuring you own performance, but asks your opinion about the meeting you just participated in. The data from this questionnaire are treated anonymously. This means that de data never can be traced back to one person. After completing this list, you can submit it. It is not possible to look back on a questionnaire you already completed.

Please read the following statements. Tick the box that you think is the most applicable. You can vary the extent to which the statement is applicable by ticking a box that is more to one end or to the other. The middle box means "neutral".

You can only tick one box per question. Don't miss any questions. Approach each question separately; the questions are in arbitrary order. There are no good or wrong answers. Don't think about your answer for too long. Most of the time, the answer that comes to your mind first is the best.

01. I am satisfied with the group's discussion.

	not applicable at all	0	0	0	0	0	0	0	very much applicable			
02.	I find the members of th	e gro	oup l	nelp	ful.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
03.	The meeting was directed	ed in	a go	od r	nanı	ner.						
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
04.	Decisions were made in a democratic way.											
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
05.	All available information	n is b	eing	g use	ed.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
06.	. I trust that we will find a good solution for the design problem.											
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
07.	All in all, I am very satis	fied.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
08.	I find the members of th	e gro	oup t	rust	ful.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
09.	I am satisfied with the p	roces	ss by	wh	ich t	he g	roup	made	e its decision.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
10.	I think my contributions	affe	cted	the	grou	ıp di	iscus	ssion.				
	not applicable at all	0	0	0	0	0	0	0	very much applicable			

11.	11. I find the members of the group pleasant to be with.								
	not applicable at all	0	0	0	0	0	0	0	very much applicable
12.	Every team member ha	d suff	icie	nt op	por	tunit	ty to	make	his contribution.
	not applicable at all	0	0	0	0	0	0	0	very much applicable
13.	I find the members of the	ne gro	up i	rrita	ting	•			
	not applicable at all	0	0	0	0	0	0	0	very much applicable
14.	I find the members of the	ne gro	up l	kind					
	not applicable at all	0	0	0	0	0	0	0	very much applicable
15.	There was too much inf	orma	tion	•					
	not applicable at all	0	0	0	0	0	0	0	very much applicable
16.	All team members recei	ived s	uffic	cient	atte	ntio	n.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable
	This ends this questionna	ire. Th	ıank	уои ј	for co	ompl	eting	ζit.	

### Questionnaire09

This final questionnaire asks your opinion about the whole project you did today. It sums up what you think about the whole day.

01.	I am satisfied with the gr	roup	's di	scus	sion						
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
02.	I find the members of the group helpful.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
03.	The meeting was directe	d in	a go	od n	nanr	ner.					
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
04.	Decisions were made in	a de	moc	ratic	way	7.					
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
05.	All available information	n is b	eing	g use	d.						
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
06.	I trust that we will find a good solution for the design problem.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
07.	All in all, I am very satis	fied.									
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
08.	I find the members of the	e gro	oup t	rust	ful.						
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
09.	I am satisfied with the pr	roces	ss by	wh	ich t	he g	roup	made	its decision.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
10.	I think my contributions	affe	cted	the	grou	ıp di	iscus	sion.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
11.	I find the members of the	e gro	oup p	oleas	sant	to be	e wit	h.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		

12.	Every team member had sufficient opportunity to make his contribution.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
13.	I find the members of the group irritating.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
14.	I find the members of the group kind.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
15.	There was too much info	rma	tion								
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
16.	All team members received sufficient attention.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
17.	I am satisfied with correctness of the design solution.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
18.	The team performed bet	ter tl	nan e	ever	yone	on	his c	wn.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
19.	I had to work extra hard	to fi	nish	a ta	sk.						
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
20.	The job could have been	don	e in	less	time						
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
21.	We helped each other wi	ith to	ool p	robl	ems	•					
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
22.	There is a good atmosph	ere a	amoi	ng m	ne an	ıd m	y co	worke	ers.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
23.	I am satisfied with prize	of th	ne de	sigr	solı	utio	٦.				

	not applicable at all	0	0	0	0	0	0	0	very much applicable			
24.	In all, I am satisfied with the solution for the design.											
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
25.	Had I been working just	by r	nyse	lf, I	wou	ld h	ave:	solve	ed the problem better.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
26.	I could easily have solve	d the	e pro	oblei	n on	my	owı	٦.				
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
27.	I made use of every moment.											
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
28.	I had too much work to	do.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
29.	I am satisfied with the way we worked together.											
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
30.	Whenever I needed help	I co	uld a	ask 1	ny c	owo	rker	s.				
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
31.	Together we found more	e solı	utior	ns th	an I	did	on n	ny ov	vn.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
32.	I had to work very fast.											
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
33.	I was on good terms with	h my	z cov	vork	ers.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
34.	We spent the available to	me e	effici	entl	y.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable			
35.	I had to work under time	e pre	essur	e.								

	not applicable at all	0	0	0	0	0	0	0	very much applicable		
36.	I had difficulty with und	lersta	andi	ng n	ny co	owo1	rkers	5.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
37.	Had I been working just	by n	nyse	lf, I	wou	ld h	ave:	solved	the problem faster.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
38.	On my own I had never been able to find such a good solution.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
39.	I am satisfied with the pr	recis	ion (	of th	e de	sign	solu	ition.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
40.	The presentations of my	cow	orke	ers w	ere	com	plete	2.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
41.	I find my work of good quality.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
42.	I felt appreciated by my	cow	orke	rs.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
43.	I am satisfied with comp	leter	ness	of th	ie de	esigr	sol	ution.			
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
44.	I am satisfied with the re	sult	of th	ne ef	fort	we p	out i	n as a t	eam.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
<b>4</b> 5.	Everyone tried to contrib	oute	to th	ie so	lutic	on of	the	proble	m.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
46.	Annoying events took pl	lace l	betw	een	me a	and	my (	cowork	kers.		
	not applicable at all	0	0	0	0	0	0	0	very much applicable		

47.	I had difficulty with expressing myself.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
48.	The presentations of my coworkers were understandable.										
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
49.	We corrected each others	s mis	stake	es.							
	not applicable at all	0	0	0	0	0	0	0	very much applicable		
50.	The job could have been	don	e wi	th fe	wer	peo	ple.				
	not applicable at all	0	0	0	0	0	0	0	very much applicable		

This ends this questionnaire. Thank you for completing it.

### Questionnaire after the meetings cycle

#### **Background information**

Do you feel that the objectives for today's meetings were generally attained?

Never

Hardly ever

Sometimes

Most of the times

Always

2. Do you feel that the time for today's meetings was generally well-spent?

Never

Hardly ever

Sometimes

Most of the times

Always

3. Did you generally like to participate in today's meetings?

Never

Hardly ever

Sometimes

Most of the times

Always

4. Which of the following means did you use before the meetings to prepare for the meetings (beside the instructions from your personal coach)?

Minutes of the previous meeting(s)

Related documentation and information (e-mail, internet, project folder)

Agenda

Personal recollection

Personal notes of the previous meeting(s)

Make personal notes

Shared notes from the previous meeting(s) (Smart board)

Presentations from previous meeting(s)

Prepare a presentation

E-mail other participants

Other:

5. Which of the following means do you use during the meetings?

Minutes of the previous meeting(s)

Related documentation and information (e-mail, internet, project folder)

Agenda

Personal recollection

Personal notes of the previous meeting(s)

Make personal notes

Shared notes from the previous meeting(s) (Smart board)

Make/discuss shared notes (Smart board)

Presentations from the previous meeting(s)

Give/discuss a presentation

Other:

6. Which of the following means did you use after the meetings (to process the results)? Minutes of the previous meeting(s)

Related documentation and information (e-mail, internet, project folder)

Agenda

Personal recollection

Personal notes of the previous meeting(s)

Make personal notes

Shared notes from the previous meeting(s) (Smart board)

Presentations from the previous meeting(s)

E-mail other participants

Other:

7. What types of information did you include in your personal notes?

Decisions taken

Things to do

Things you want to tell others

Reminders

Reference materials (names, phone number, webpages)

Doodles (absent-minded scribbles)

Other:

8. What types of information did you regret, in retrospect, not having included into your personal notes?

Decisions taken

Things to do

Things you want to tell others

Reminders

Reference materials (names, phone number, webpages)

Doodles (absent-minded scribbles)

Other:

9. If a 'smart meeting room' could automatically create multi-media recordings of the meeting ('smart minutes'), what information would you like these to include? Please indicate the top-5 of your preferences.

Speech (audio)

Transcribed speech (text)

Other audio (non-speech sounds), for example ....

**Pictures** 

Video – overview

Video - close-ups of participants

Used documents and presentations

Agenda

Your personal notes

Shared notes

Information on participants

Other:

Other:

Other:

10. If 'smart minutes' were available, how would you like to search for specific information within the minutes? Please indicate the top-5 of your preferences

By topics

By agenda items

By participants/speakers

By quotes of participants

By gestures of participants

By facial expressions of participants

By emotions of participants

By movements of participants

By discussions between participants

By decisions taken

By arguments for decisions

By means used during the meeting (presentations, notes tec.)

By things to do

By specific points in time

By specific locations in the meeting room

Other:

Other:

Other:

11. If a 'smart meeting room' could automatically create multi-media recordings of the meeting ('smart minutes'), what information would you like these to include? Please indicate the top-5 of your preferences.

Browse through the 'smart minutes'

Get an automated summary

Get an overview of things to do

Get a gist (the essence) of the contents of the meeting

Get a gist of the atmosphere during the meeting

Other:

12. Would you trust 'smart minutes' to provide an accurate and adequate representation of the meeting?

Yes, because

Yes, but

No, because

13. Would you like to participate in a meeting that takes place in a 'smart meeting room' in which all communication is logged?

Yes, because

Yes, but

No, because

14. Would meeting in a 'smart meeting room' affect your behaviour during meetings?

Yes, because

Yes. but

No, because