

P H D   D I S S E R T A T I O N   ·   S P R I N G   2 0 0 4

*Lene Nielsen*

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# Engaging Personas and Narrative Scenarios

*– a study on how a user-centered approach  
influenced the perception of the design process in the  
e-business group at AstraZeneca*

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Sats: Bjarne Pedersen & Lene Nielsen

Contact Information:

Lene Nielsen

Copenhagen Business School

Department of Informatics

Howitzvej 60

2000 Frederiksberg

Denmark

E-mail: [ln.inf@cbs.dk](mailto:ln.inf@cbs.dk)

Telephone: +45 3815 3358

"Indeed, to be able to help another person, I must understand more than he does – yet, first and foremost I must understand what he understands. If I do not, my greater understanding will not help him at all."

From Søren Kierkegaard, "Synspunktet for min Forfatter-Virksomhed", Written 1848, published 1859. (own translation)

"For i Sandhed at kunne hjælpe en Anden, maa jeg forstaae mere end han - men dog vel først og fremmest forstaae det, han forstaaer. Naar jeg ikke gjør det, saa hjælper min Mere-Forstaaen ham slet ikke."

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# 1. IN THE BEGINNING

To write a doctoral thesis is like a journey, a voyage full of storms and stills, of temptations and goals. Ulysses spent seven years before he reached Ithaca; it has taken me less, but mentally felt the same.

Ulysses set out from Troy as he had been in war and wanted to return to his home. Fate tricked him and the voyage became longer than expected. I set out because I was mystified and fate gave me a company I could test my ideas upon. It became a learning experience and the outcome differed from my expectations. But I think I am home now, wiser and with a story to tell.

## 1.1 TO WONDER

Ever since I, in 1997, did my first piece of work in the interactive business, I thought I should proceed as I did when writing a film script. I imagined the users and wrote characteristics of the users that were discussed with the customer. I imagined the future use and ended with what in film terms is called “a treatment”.

These were the days before I had ever heard of HCI and scenarios, and the term persona had not entered my vocabulary. When I later came to work with usability and pursued my initial way of working, I realised that scenarios had multiple forms and personas are similar to what I termed model-users. (Nielsen 1998)

As I started to research scenarios and personas, I soon came to realise that the scenarios did not present the user as a vivid character, but rather as a flat character. At best they were stereotypes and made me laugh, at worst they only existed as a name. And the user seemed to play a minor role in the scenario where the system and the use were in focus.

The personas were portrayed as equally flat and here the story of the use situation played a minor role. I began to wonder how one could design for a user who is only a sketch of a person, and how it was possible to get designers to understand the users and the users' needs from such meagre portraits.

This raised some questions from both a writer's and a reader's point of view:

- How can you predict the goals and actions of a user, when you do not know anything about the user as a person?
- Why use descriptions of users that the reader cannot engage in?
- What does it take to write a good description of a user?

To me it is important to know and be conscious of the user as a character both in the scenarios and as a persona. Perhaps the answer to these problems could be found in the scriptwriting

tradition? Maybe I could help improve both the scenarios and the personas?

My journey now had a direction. I wanted to find out:

- Can an understanding that derives from film scriptwriting inform the persona method? Can the description get a design team to engage and understand the users from the descriptions?
- Can an understanding that derives from the writing of narratives inform the scenario method? Can the narratives provide knowledge about the use that creates grounded design solutions?

When a request for help to understand the users was sent from AstraZeneca I agreed to help them, if they would accept my way of working and inform me during the process. They consented to the terms and the work began.

## 1.2 SCENARIOS AND PERSONAS

Scenarios have been used in the design process for a longer period than Personas. The term covers a lot of methods that share the ability to explore future design from an early stage in the design process. Scenarios can be written (Carroll 2000) or acted (Brandt and Grunnet 2000), they can be narratives written in natural language (Clausen 1993) or models of users and e.g. use sketches of figures linked to a system activity (Sutcliffe 2003). They can focus on the user's task or the system's performance. Whereas, with a term introduced by Cooper, personas are "fictitious descriptions of users" (Cooper 1999).

I have had long and intense discussions with myself over the term Personas. Should I stick to it, as it is the most renowned term? Or should I proceed with the term model-user? I have decided to use the term engaging persona<sup>1</sup> for the take I have on the description of a fictitious user.

My understanding of the terms and my focus are:

- The engaging persona is a description of the user in a scenario. This description is based on field studies. The engaging persona can be the user in one or more scenarios depending on goals and the situations of use. The objective of using the engaging persona is to enable the designers to engage in users that differ from the designers in terms of sex, culture and/or age.
- The scenario is a narrative written in a natural language. It focuses on a user using the system. The goal of the scenario is to explore design solutions.

My understanding emphasises that scenarios and engaging personas are parts of narrative structures that, as such, provides an aid to the memory.

### 1.3 TO UNDERSTAND THE USER

The field of HCI has undergone several changes from a focus on designing usable systems in work areas with a focus on usability to design for a broader audience using multiple systems with a focus on the product pleasure.

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<sup>1</sup> I thank Allan Lundgaard for proposing the term



The discourse about users is diverse (Cooper and Bowers 1995) from a look at the users from cognitive psychology to represent the users, to involving users or to paint pictures of users with focus on pleasure (Jordan 2002).

During my previous professional work in the field of webdesign<sup>2</sup> I have seen what can be gained by placing the main focus on users. In my experience the gap between customers, designers, and users has been wide and difficult to bridge. Suggestions to overcome this gap has been many e.g. Participatory Design projects where the users that are to use the system plays an important role in designing it (Schuler 1993) and contextual inquiry (Holtzblatt and Beyer 1996) that sends designers to meet users in their natural surroundings.

The user has played a central role in HCI and to find a way to represent the user and “to empower the user” runs through the notion of user-centered design (Thomas 1995). The representation of the user and the user’s needs is seen as a central characteristic that is the foundation for HCI and that creates systems developed for the user and not for management or for the designers (Cooper and Bowers 1995) that are considered in opposition to the users. Work in user-centered design have looked at how to empowered the user, either by users’ participation in the design process or by creating advocates for the users interests (ibid).

This area of HCI has developed from looking at the user as someone who should complete tasks to a complex human being

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<sup>2</sup> CD-rom for unemployed. Redesign of webdesign about diabetes. Webapplication about growth hormone deficiency.

in a social system where the computer plays an important role (Karat and Karat 2003).

User-centered design is seen as having no agreement on which area to focus on (ibid) but a general agreement that the focus is to understand the users needs as a way to inform design.

The work I have done consists of both an approach towards the users included in the personas and scenarios and an approach towards the design process.

The view on the users covers both an integration of the user in the design process and representations of users. This can be done for example by reflecting on users in activity (Bødker 1999), by acting out users in actions (Iacucci, Iacucci et al. 2002), or it can simply describe users.

The work I propose sits at the beginning of the design process after ethnographic studies or user inquiries and before actual systems development begins. It includes and elaborates on representations of users. I view user representations from my background in communication studies where I use Russian formalists (Cobley 2001) with the distinction between *fabula* and *sjuzet*. I use cognitive psychology as *fabula* is seen to consist of intra-subjective processes. The term “engagement” builds on both Russian formalism and on cognitive psychology as well.

How much the users should be involved is questioned in the different paths that make up the HCI community. I have chosen a

path where the work I propose is centred on getting designers to understand users needs and context in order to inform design. This brings my approach closer to the method proposed by MUST (Kensing 2003), which suggests work with IT designers. Even though the MUST methods moves within work-oriented systems design while I move within the area of web applications for patients and relatives and medical practitioners there are resemblances. I will in the following relate my work to the seven elements proposed for a design method (Ibid p. 6-12):

1. *Design*. The initial activities in systems development are analysing goals, needs and opportunities towards a vision. Kensing calls it a vision for change, which refers to an organisational view where the organisation can decide whether or not to implement the application. My view is that of the user where the vision becomes a vision of the final system and discussions amongst the designers support decisions and (out of my scope) user tests will decide whether or not the application fulfils user needs.
2. *IT designers*. The e-business group at AstraZeneca DK will traditionally not be termed as IT designers. I have chosen to view them as such as it is from the group that new initiatives are dealt with. Their role is to coordinate and develop ideas for applications, but the actual building of the applications takes place at either the internal IT department or at external partners. I view the e-business group as “the main carriers of a design method” (ibid p. 7)

3. *Working in commercial settings.* The initial work in the field of Participatory Design was to redistribute power to workers, to hand workers power over their work environment. Kensing propose to influence practice of IT designers to awareness on user needs. The IT designers I work with are part of huge organisations that do not change easily and new ways of working can be difficult to introduce and to sustain. My hope is to change the organisation's perception of the design process but whether or not that is enough to change work practice is to be seen.
4. *Challenge.* A part of the seven steps is to work with conflicts and to overcome conflict. I have found conflicts but have not worked to overcome external conflicts. The e-business group is like a dome in the big organisation of both the local branch and the global branch of AstraZeneca. The workshops I have performed has been experiments that on the long run might influence design practice but in the short span of time I spent with the group might not influence practice.
5. *Too many IT applications fail* – and LinkMedica is one. The project has been developed to try to understand why.
6. *The real needs.* "IT systems standard or customized – turn out not to be built on a proper understanding of what users are trying to accomplish and why in the organisation in question." (Ibid p. 9). Users of LinkMedica are diverse and the question is if the methods engaging personas and narrative scenarios can provide the

designers with an understanding of the users' real needs and what they are trying to accomplish.

7. *Who are the intended users?* By focussing on engaging personas and narrative scenarios is it possible to support discussions of the intended users and to focus on which users to target?

My approach derives from three conditions:

I have until now mainly moved in the field of illnesses and patients<sup>3</sup>; to talk to patients is a delicate matter where confidence, trust and intimacy need to be established during interviews.

I have moved in a field where there has been no existing segmentation of users and existing labels such as confident/not confident web users gave no meaning. Instead segmentation had to be derived from interviews with patients and their relatives and often provided surprising results of how to divide the users.

My aim is not to come up with a complete design process but to inform the existing methods and to look at these in a concrete praxis. In the future, further research needs to establish which other design processes will be appropriate when the scenarios have been finalised.

## 1.4 THE DESIGN PROCESS

The design process I had the opportunity to look into and engage in is that of designing an application based on web technology. It

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<sup>3</sup> Diabetes, Growth Hormone Deficiency, asthma & allergy

is aimed at a wide audience that use a browser and some sort of connection. I will describe the process in detail later. Much of the writing about scenarios derive from a systems design point of view and a workplace oriented point of view e.g. (Bødker 1999). I will not address the differences between these design processes.

Even though the participants are not designers in a strict sense I have decided to use the term, as they are responsible for the development of the site under scrutiny and of other sites. And they are the ones who decide which applications to incorporate in future modifications.

### **1.5 THE COMPANY**

AstraZeneca is a British pharmaceutical company with the main research office in Sweden. It has offices in 50 countries, including Denmark. It provides medication in the areas of cancer, cardiovascular diseases, central nervous system disorder, gastrointestinal diseases, infection, pain control and respiratory diseases. My connection to the company was within the area of respiration, with a website for information about asthma and allergy and an asthma self-monitoring application. The website was originally launched in Denmark as [www.astma-allergi.net](http://www.astma-allergi.net) and was later merged with the centrally controlled site LinkMedica and launched in Denmark as [www.linkmedica.dk](http://www.linkmedica.dk).

### **1.6 THE METHOD**

I will present the analysis of the process within the framework of qualitative analysis with emphasis on the hermeneutical research

process of interpretation. This accounts for the understanding of the design process. In the workshops on engaging personas and narrative scenarios I have an action-oriented research approach where the perspective of change is not seen as a change of practice but a change in mindset. I will reflect upon the role I played and the influence I had on the outcome of the workshops both the active role in the workshops as taking part in an action research project and the role as an interviewer as part of a traditional qualitative research study.

## 1.7 THE RESEARCH QUESTIONS

My aim is to use film script practice and theory to inform the way personas are created and to use the creation and theory of narrative to inform scenarios. From this I address three research questions:

1. Can the methods of engaging personas and narrative scenarios provide designers with an understanding of users and use situations?
2. Can the concrete work with engaging personas and narrative scenarios inform the methods in use?
  - Was the practice appropriate?
  - What lessons can be learned from theory and practice?
3. How will engaging personas and narrative scenarios influence the perception of the design process in the design group at AstraZeneca?

In order to answer these questions I performed initial interviews with some of the involved partners in the LinkMedica project in

order to gain insight into the existing design practice and the partners perception of the users. I did two workshops with the Danish e-business group at AstraZeneca with focus on engaging personas and scenarios.

Finally, I interviewed the workshop participants in order to get their opinion on the methods, the role the methods can play in future projects, and their perception of the perfect design process.

## **1.8 THE VOYAGE**

I have analysed the material; the interviews, the workshops and the written material produced in the workshops. From the analysis I try to get the answers I set out to find. I hope the reader will profit from my voyage equally much as I have and follow me to the home of the experienced and wiser.

My travel begins with an overview of the area I moved in: the company AstraZeneca, the illness of asthma, and the website [www.Linkmedica.dk](http://www.Linkmedica.dk).



## 2. A READER'S GUIDE

I will introduce the chapters and the reflections behind the order in which the chapters are presented.

To understand the background for the cooperation with AstraZeneca I introduce *"The History of LinkMedica.dk"* and the four user inquiries I, as a consultant, did for AstraZeneca. The inquiries resulted in a categorisation of patients and relatives, which is presented in *"The Four User Categories"*.

I have chosen to present *"Methods and Studies"* for all the interviews and workshops I have performed in one chapter. This is done out of consideration for the reader. The presentation creates a foundation for the readings and the analysis and the findings of interviews and workshops becomes emphasised when the focus is on the outcome of the single investigation rather than on the methods used.

*"The Design Process from the Stakeholders' Point of View"* is the first investigation I performed. It presents both some of the partners

involved in the LinkMedica project and their perception of the process and the users.

The order of the chapter that follows reflects a chronology according to when the workshops were performed but also reflects the different stages in the model for engaging personas and narrative scenarios.

The chapters also reflect the steps in the model and moves from theory to the empirical studies. Thus the theoretical development of the model is used as units for analysis in the empirical studies.

In *"Engaging Personas"* different takes on the term personas are presented as well as the term engaging personas. This leads to a presentation of the *"Workshop on Engaging Personas"*, the material, and analysis of the material. *"Between Personas and Scenarios – Establishing Situations"* discuss situations and needs from a narrative understanding. This chapter is followed by a discussion of the *"Workshop Discussions on Situations"* and what it gave to the understanding of the personas. The natural next step in both my work with AstraZeneca and in the model is the *"Scenarios"* that discuss both scenarios in systems development and the narrative scenario. *"Workshop on Scenarios"* is an analysis of the workshop and subsequently the scenarios produced at the workshop.

Last *"The Participants' Reflections"* are introduced. This chapter follows up on the initial interviews and the progress in the workshop-participants' perceptions of the design process and their evaluations of the workshops are presented.

The "*Conclusion*" considers the analysis in light of the research questions and the contribution.



# 3. THE HISTORY OF LINKMEDICA.DK

## 3.1 INTRODUCTION

This chapter provides an overview of my contact and cooperation with the e-business group at AstraZeneca as well as an overview of the history behind the website LinkMedica.dk

In May 2000 [www.astma-allergi.net](http://www.astma-allergi.net) was launched. It was designed in collaboration between AstraZeneca Denmark, the Danish Asthma and Allergy Association and an independent advisory board of asthma specialists. This site migrated to a new platform in December 2001 and became [www.linkmedica.dk](http://www.linkmedica.dk).

LinkMedica is a web service for asthma patients and health care professional enabling asthma patients to monitor their asthma using an asthma diary and health care professional to access the patients' diary data.

LinkMedica has three main sections: Asthma Management Centre, Knowledge Centre and Forum. Knowledge Centre and Forum are accessible for everyone, whereas the Asthma Management Centre requires that the user registers and creates a user name and a password. Patients are able to create their own account on-line, while health care professional should contact AstraZeneca to get registered. This is to confirm the identity of doctors and nurses available to patients on LinkMedica.

Asthma Management Centre contains an asthma diary where the intention is to have the patients log on each day and enter their asthma values: morning peak flow, number of doses of rescue medication, and whether they have had asthma symptoms at night. After submitting diary values, the patient receives an immediate response telling if his or her asthma is under control and detailed instructions on what to do if not. When a health care professional logs on to LinkMedica, he or she is shown a list of all patients currently connected with his or her clinic. Activating a patient's name shows the patient's diary data and graphs.

In the Knowledge Centre users can find a large number (>100) of articles and news about asthma and allergies. The article section contains resumes of evidence based scientific papers from peer-reviewed journals. All evidence-based resumes contain links to original paper or Medline abstract. Resumes written by independent and internationally renowned researchers are constantly being added and updated.

News from Danish and international media, of interest to asthma and allergy patients, are submitted on a daily basis from Observer Denmark.

In the Forum section users may participate in discussion groups and ask questions to experts.

Since the site was launched a number of studies have been carried out and the preliminary data suggest that use of LinkMedica.dk improves asthma outcomes (Rasmussen, Backer et al. 2003)

Since the launch a total of 7722 users (February 2003) had registered. During 2002 the growth in registered users averaged 50 per month. In the same period the number of unique diary users per month decreased from 307 to 138.

The trend in unique users that have entered their diary each month is uneven. After a peak in May 2000 the number of diary users decreased until November where only 9 users entered their diary. At this time AstraZeneca started boosting the marketing of LinkMedica and during the next year the number of diary users increased (with a decrease during the holiday season) to a maximum of 307 in January 2002. After this, user numbers was steady for a period of about 4 months. However, in February 2003, diary user number had declined to 138 per month.

## **3.2 ASTHMA**

Asthmatics have sensitive respiratory passages these react more easily on substances that annoys. Sometimes the cause is known and the asthma is an allergic reaction, but often the cause is not

known. In many ways asthma is an illness that it is easy to treat and has predictable therapy.

Asthma is an infection-like condition in the mucosa of the bronchus. The muscles surrounding the airways can react with contraction and it gets difficult for the air to flow in the lungs. The treatment is medical and has two effects – an acute and a prophylactic. The acute medicine prevents the muscles from contraction and quickly relieves the symptoms. The effect lasts only a couple of hours and is used at asthma attacks. The prophylactic medicine stabilises the mucosa and stabilises the sensitivity of the lungs. This medicine is used on a daily basis and for a period after attacks

The patient measures airflow with a peak flow meter on a daily basis. The daily measuring can prevent attacks. The condition of the lungs and the dose of medicine is dependant and an algorithm can be established. New ways of treatment looks at the overall well being of the patient and algorithms are developed here as well. In this treatment the patient does not have to measure peak-flow but must answer four questions about the general condition.<sup>4</sup>

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<sup>4</sup> The information is from [www.LinkMedica.dk](http://www.LinkMedica.dk) and [www.astma-allergi.dk](http://www.astma-allergi.dk)



### 3.3 THE RELATIONSHIP BETWEEN THE MEDICAL PRACTITIONER AND THE PATIENT

So far the treatment of asthma has been in the domain of health care professionals, whether it is a medical practitioner or a specialist. With LinkMedica AstraZeneca not only acts in the area of the treatment, but also in the communication between health care professionals and patients. AstraZeneca crosses boundaries as the system LinkMedica to some degrees reduces the power the medical practitioner has over the treatment and hands this to the patient, but hands it, to some extent, also to the system. The website empowers patients as they are, via the system, able to improve knowledge about asthma and asthma related issues.

Compliance is low, as there seems to be a widespread belief that less medicine is better than more. The patients perceive the illness as causal and are constantly on the outlook for causes for attacks (Nielsen 2002).

Both patients and medical companies have an interest in an improved compliance. The patients will get a better condition and the medical companies will sell more. It is this area that AstraZeneca, with LinkMedica, has moved into.

*“AstraZeneca is used to communicate to the patient via the medical practitioner or via folders or they communicate directly to the medical practitioners. But the link between the medical practitioner and the patient has always belonged to the two parties. And they said from the Danish branch: “why aren’t we equally involved in that communication. (E. 25-4-03)”*

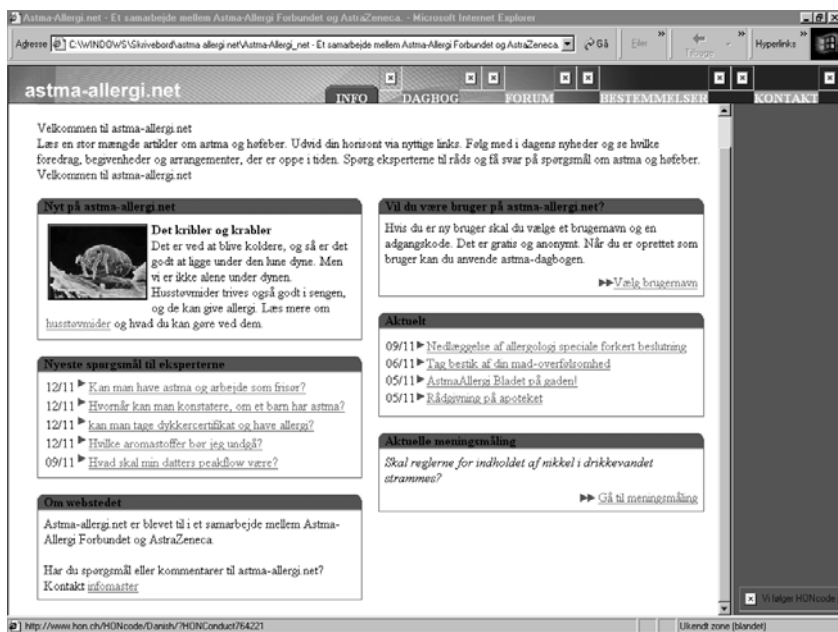
## **3.4 THE HISTORY OF LINKMEDICA**

### **3.4.1 THE ORGANISATION ASTRAZENECA**

In January 2002 two offices of the Danish branch of AstraZeneca were merged into the e-business department. The department is part of the department for Business Development. The Danish branch of AstraZeneca is a local branch – an ISMO. Centrally there are two huge departments: Research & Development, which deals with research and development of medicine. Project, Strategy & Licensing deals with strategies and statements. These are distributed to the local ISMOs that run marketing on the local level. The department Global e-business is part of Project, Strategy & Licensing. Global e-business deals with all international Internet and e-business project and were responsible for the project LinkMedica

The prelude to Linkmedica.dk began as a bright idea among the medical consultant and a couple of health care professionals. They had an idea of making an Internet based asthma diary where patients could get a daily response on medication to their peak flow measurements. The asthma dairy existed in a paper version where the patient could enter measurements in a little book. Cooperation between AstraZeneca and the Asthma-Allergy Association enabled the launch of [www.astma-allergi.net](http://www.astma-allergi.net) in May 2000. The new version enabled key-in from both Internet and phone. At the same time as the launch, ideas of a part for health care professional developed. This part Doc-to-Doc, that enabled the medical practitioner to see the patients' key-ins was launched in August 2000.

There was no dedicated project group in AstraZeneca to maintain the site. The start and the launch were in the hands of the Department of Respiratory. The cooperation between AstraZeneca and The Asthma-Allergy Association was from AstraZeneca viewed as a way to heighten the profile as a neutral communicator of knowledge about asthma and allergy and the Asthma-Allergy Association wanted to be present on the Internet.



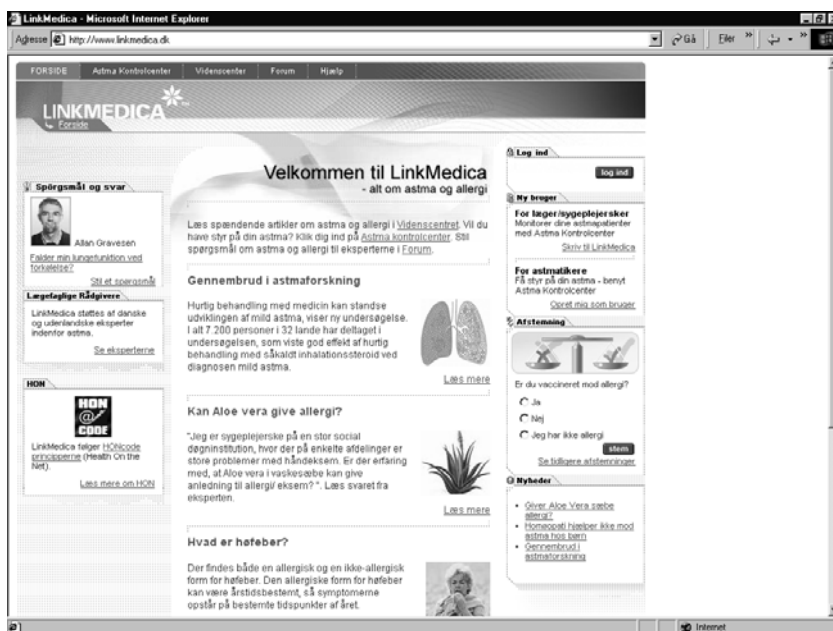
III. 1: Astma-allergi.net 17-10 2001

In order to develop further a project group was established. In 2001 the project group at AstraZeneca consisted of:

- A project leader, formerly from the department of non-prescriptions. His task was to gather a group that could deal with the daily workload as well as developments.
- A medical practitioner. Has worked for AstraZeneca in several contexts.
- An info master
- A Webmaster, hired in March 2001 as a replacement for the info master during maternity leave.
- A consulting group of Health care professional.

At present (January 2004) the group consists of:

- A Webmaster
- A medical consultant
- An e-business manager

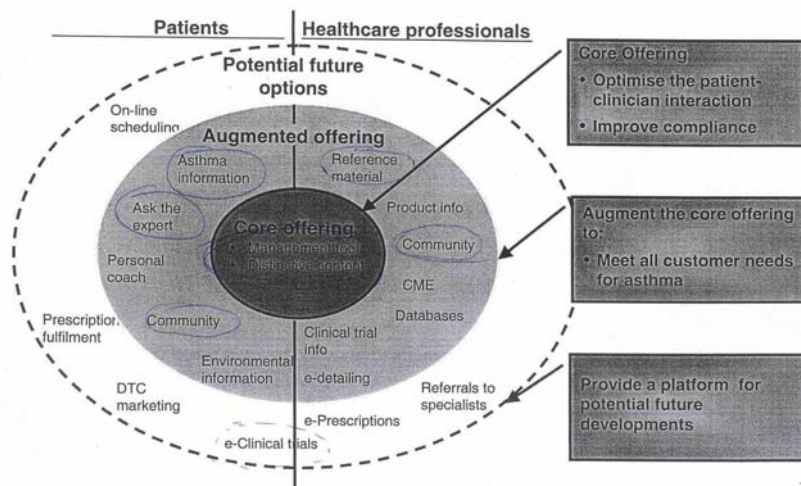


III. 2: Linkmedica.dk 14-4 2003

### 3.4.2 INTERNATIONALISATION

In May 2000 the Swedish part of AstraZeneca made the Corporate Business Development – a catalogue of e-business projects. The consultancy company McKinsey made a report that expressed the strategy and the aim of a move into the e-business area, illustrated below.

## The core e-asthma offering will help optimise patient-clinician interaction



III. 3: Strategy of e-business. McKinsey report 2000

In view of the report a decision was made that AstraZeneca should get involved in e-business projects and a search inside the organisation for projects already launched began.

The astma-allergi.net and a similar project in the UK were looked upon. An idea of merging these two projects into one was developed. The project should serve as a pilot project that considered how AstraZeneca could benefit from the area of e-business.

A funding from the company made the pilot study possible. In the summer of 2001 the idea was launched that astma-allergi.net

should migrate to a common platform together with the UK site.

This was agreed on and the name was introduced

In December 2001. The Swedish main division headed the migration. The web company Razorfish<sup>5</sup> performed the web-design, both the technological and aesthetic.

During Spring 2001, the UK department of AstraZeneca launched [www.linkmedica.co.uk](http://www.linkmedica.co.uk). The site is aimed at health care professionals and asthma patients in the UK. In December 2001 LinkMedica.dk was launched.

During the period discussions laid the ground for a rollout in more countries.

The internationalisation did not happen without discussion. These were mainly connected to the experienced Danish branch, cultural differences, and the strategy for a common brand (common name and aesthetics).

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<sup>5</sup> Razorfish was later sold to the company Creuna.



Ill. 4: Linkmedica.co.uk 14-4 2003

## 3.5 MY CONTACT WITH THE E-BUSINESS DEPARTMENT AT ASTRAZENECA

In August 2001 the Webmaster of [www.astma-allergi.net](http://www.astma-allergi.net) contacted me. The reason for the contact was a wish to get an understanding of the users and their use of the site. The site was at that point split in two parts: the public part and the professional part - Doc-to-doc. The site was aimed at adults with asthma and/or allergy and their relatives, and at health care professionals.



“I would like to ask you to consider helping me **identify our users: who are they**, and what improvements do they want on [www.astma-allergi.net](http://www.astma-allergi.net)? As it is I have a vague impression of **how our users use the site**. I have a wish to do a proper user test of the website, in the form of a questionnaire where the users are asked to answer a row of questions, can praise and flog, and come with suggestions for improvement.” (Mail from Webmaster 16-8 2001, my emphasising).

This was around the time where the site was about to be redesigned under the name LinkMedica. The redesign process was to be organised from the main office in Sweden and the new site would be rolled out in both Denmark and UK.

“The plan with our transition to LinkMedica has been delayed to December 15.” (Mail from Webmaster 5-10 2001)

The process of rollout delayed our contact and it was decided that as soon as the new site had been launched I should start a survey of the users. The results should be presented in written reports. I accepted the terms with the conditions that the e-business group would use my methods and accept to be an object for study for my PhD thesis.

### 3.5.1 PRELIMINARY INTERVIEWS

I interviewed as many of the involved partners in the redesign project as possible to get an overview of who was involved, the aim of the redesign project, the history behind the merge from

www.astma-allergi.net to LinkMedica.dk, and the partners' perception of the users. The interviews were performed in December 2001, January 2002, and August 2002.

I interviewed:

December 2001

- The Webmaster of LinkMedica.dk at AstraZeneca, Denmark. Present were the medical consultant and a programmer.
- A health care professional, originator of the asthma diary and participant in the health care professional project group

January 2002

Three persons from AstraZeneca Research & Development

- A person who worked with the national divisions of AstraZeneca, with the plans for rollout of the site to other divisions beyond UK and Denmark, and with branding of the site.
- A person responsible for Knowledge Management Centre.
- A person responsible for the management tool: Asthma Management Tool.

I interviewed the three persons from Research & Development as a group.

August 2002

- The project manager, from the web company in Stockholm.

The interviews are the basis for the descriptions in chapter Six of the history behind the launch of LinkMedica and the problems in connection to this.

### 3.5.2 FOUR USER INQUIRIES

The initial contact with AstraZeneca had been to help them know their users. I have over a period from May to October 2002 been responsible for four user inquiries.

AstraZeneca wanted the first inquiry as an online questionnaire. It should start the inquiries and was to be used as a point of departure for interviews with asthma and allergy patients and their relatives. The questionnaire would provide demographic data and data of the users' use and view on the site. This data could be used to group the users and as a means to get in contact with users interested in participating in interviews. The questionnaire was made in cooperation with Torkil Clemmesen and Claus Bornemann who were responsible for the analysis and the written report (Nielsen, Clemmensen et al. 2002).

At the same time as the questionnaire was launched I did four interviews with patients who used the Asthma Control Centre. Contact to the patients was established through Celeste Porsberg from Bispebjerg Hospital and Jacob Anhøj from AstraZeneca. Celeste Porsberg studied pregnant patients with asthma. In her control group were non-pregnant women as well.

Interviews with patients contacted via the questionnaire were performed during a period from June to August 2002. I was responsible for this report that presented the results of the interviews “Undersøgelse af brugere og evaluering af website. Kvalitativ delrapport” (Nielsen, Clemmensen et al. 2002).

Before handing in the reports I was asked to repeat the inquiry this time with a focus on health care practitioners. The questionnaire was performed in cooperation with Jacob Anhøj from AstraZeneca. The result was presented in the report: “Undersøgelse af brugere og evaluering af Linkmedica.dk. Kvantitativ delrapport” (Nielsen and Anhøj 2002).

From the quantitative inquiry four medical practitioners were selected for interviews. The result of the interviews was presented in the last report: “Undersøgelse af brugere og evaluering af website. Kvalitativ delrapport” (Nielsen 2002).

I view the four user studies as secondary empirical studies. They are the basis for the further work for creating engaging personas and scenarios, but they were made not as scientific reports but on the conditions of consultancy.

### 3.5.3 TWO WORKSHOPS AND MORE INTERVIEWS

The four user studies were the basis for the two workshops performed with the design team from AstraZeneca e-business. The first workshop was aimed at creating personas the second on creating scenarios.

The first workshop took place at AstraZeneca 6-12 2002. The next workshop took place at AstraZeneca 8-4 2003. Between the dates of the two workshops the participants were asked to rewrite the personas. Despite several reminders they did not do the rewriting. In the end I did the rewriting and distributed them. After the last workshop I rewrote the two scenarios from the originals and the discussions. To date, AstraZeneca has material for further development of LinkMedica that consists of three personas and two scenarios.

After the workshops, I interviewed the participants. The aim was to get knowledge of their perception of the workshops and their view on the design process. These interviews were conducted in April 2003. I interviewed the Webmaster the medical consultant, the e-business manager, the e-business coordinator from the Business Unit Respiratory and the trainee from Ålborg University.

### **3.6 SUMMARY OF MY ENGAGEMENT**

My engagement with AstraZeneca is illustrated in the following table that considers both a time and research perspective.

Time	<b>A PROCESS PERSPECTIVE</b>	<b>A PROCESS PERSPECTIVE</b>	<b>RESEARCH QUESTIONS</b>
December 2001 January 2002 August 2002	Interviews: Understanding the design process	How will engaging personas and narrative scenarios influence the perception of the design process in the design group at AstraZeneca?	
December 2002 March 2002		Workshops	<ul style="list-style-type: none"> <li>- Can the concrete work with engaging personas and narrative scenarios inform the methods in use?</li> <li>- Can the methods of engaging personas and narrative scenarios provide the participants with an understanding of users and use situations?</li> <li>- Was the practice appropriate? What lessons can be learned from theory and practice?</li> </ul>
April-May 2003	Interviews: understanding the output of the workshops		How will engaging personas and narrative scenarios influence the perception of the design process in the design group at AstraZeneca?

Table 1: My engagement

## 4. THE USER CATEGORIES

### 4.1 INTRODUCTION

Before engaging personas and scenarios can be written there must be information about the users and the situations of use. When I began to cooperate with AstraZeneca they had a wish for this information and I needed them for my investigation into how a design process with use of the methods engaging personas and scenarios is perceived.

The initial phase provided four studies. My role in the studies was that of a consultant and not a researcher.

The studies were:

- A quantitative survey placed on the site that provided insight into demographic data, the users' patterns of behaviour on the site and whether they were patients with asthma or allergy, or relatives.
- This data was analysed in order to get a pattern that could be used for interviews with users and the inquiry

provided e-mail addresses and phone numbers to users interested in being interviewed.

- A quantitative survey distributed to the health care professionals that AstraZeneca at some point had had contact with when introducing LinkMedica.dk. The survey gave insight into demographic data, the interest for internet-based tools, the users' patterns of behaviour on the site, and the users' evaluation of the site.
- This data was analysed in order to get a pattern that could be used for interviews with the health care practitioners and the inquiry provided e-mail addresses and phone numbers to health care practitioners interested in being interviewed.

The results of the studies were communicated in four reports, written as traditional consultants reports. From the reports a number of user characteristics were extracted. These provided the outset for the workshops and the initial definition of the personas.

Four types of users were identified among the interviewees. Characteristics are summarised and compared in Table 2. <sup>6</sup>

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<sup>6</sup> The following is an excerpt from a draft to the journal paper: Anhøj, J. and L. Nielsen (2004). "Evaluation of LinkMedica: An Internet based asthma monitoring tool." Journal of Medical Internet Research **To be published.**



## 4.2 PATIENTS

We identified a thematic difference amongst the patients. We labelled the two distinctly different types of patients as, **controllers** and **neglecters**.

The **controllers** wish to gain control over their disease. Through a daily control routine they feel well monitored and do not have to worry about the disease. Their homes are designed to prevent asthma attacks. They use Asthma Control Centre to monitor their condition.

The following is an excerpt from a patient interview.

Interviewer: “Almost everybody in the family suffers from asthma. Does it influence your everyday life?”

Patient 2: “No, not really. It influences us in that way – as you can see – that we do not have carpets, just the bare floor. And our son cannot have the pets that he would like to have. And we have installed a ventilating system in order to try and reduce the humidity. So in that way it has influence on our surroundings. We have chosen to hire a cleaner to clean the house because we realise that we cannot do it properly ourselves. So it does influence our lives, but we do not think about it on a daily basis.”

The **neglecters** do not want to think about their disease. By not focusing on it, they feel better. In this way they do not use mental energy on the disease, and this is considered good for their

health. To feel secure, they just need to carry their rescue medication with them. This excerpt from an interview shows this attitude.

Patient 4: "Then I must figure out myself what is good for me.

Interviewer: Instead of exploring and reading?"

Patient 4: "Yes - you can get so focussed on it at times. Sometimes it is better to pretend nothing is wrong. It's a balance you know."

There was no distinction between the sexes in these attitudes. We also observed that different user types might very well be expressed within the same person at different times and that most users possess traces of both the controller and the neglecter. E.g. a person could express that she or he did not pay attention to the disease and at the same time talk about how they had refurbished the entire house or were highly aware of things that might provoke an attack.

### 4.3 MOTHERS

All relatives are woman and mainly mothers of children with asthma or allergy. The mothers of children with asthma or allergy form groups where the themes neglecters and controllers are recognized too.

The **emotional mother** has an urgent need for information and responds very emotionally towards the information. She is mainly interested in guidelines that can help her in the present

situation. She is not interested in abstract knowledge such as research results or scientific information.

Only one person represented the **professional mother**, but there were traces of her in other interviews where husbands talked about their wives. This mother spends all her energy on controlling her child's disease. She subscribes to news and is active in the Forum. She is empowered by the use of Asthma Control Centre and strives to get control over the child's disease. She does not think this behaviour influences her family life. This excerpt shows how a mother views the influence on her daily life.

Interviewer: "I can see you spend a lot of time finding information. How does that influence your everyday life?"

Patient 9: "It does not – in any negative sense. I think it is good that I don't have to spend all day reading newspapers. Now I can go to the Internet if there is anything I need to know."

## 4.4 HEALTH CARE PROFESSIONALS

The typical health care practitioner user is a male around fifty who works at a clinic with a small number of other medical doctors. Two thematic subgroups were identified: the *user*, who had experience in monitoring asthma patients with LinkMedica and the *interested* who were considering using LinkMedica in the future.

The **user** has been introduced to Asthma Control Centre through participation in a clinical trial. He finds the system of great value for the patients, but he doesn't use it himself anymore after the trial has ended. He finds that Asthma Control Centre has too much functionality - more than he needs. He finds the system complex with a complicated login procedure.

The **interested** have no experience in using LinkMedica but has heard about it. He believes that both he and his patients might benefit from using the system.

The typical health care practitioner user is not a confident computer user, neither of the Internet nor of a PC. The health care practitioner knows his own electronic patient record system, but he does not use the PC for anything else. He is connected to the Internet through an ISDN connection. This creates obstacles for a smooth login procedure and prevents him from being online all the time.

## 4.5 HOW DO USERS USE LINKMEDICA?

An interesting finding from the interviews is that the user's perspective plays an important role in how the system is perceived and used.

In the **inside-out** perspective there is focus on the use of the diary of the Asthma Control Centre. In this perspective the users views the whole system from the point of view of the diary. Most of the users who used the diary participated in a research project. They expected the system to operate as smoothly and as quickly as possible. They had high expectations to the usability of the

system. They did not read or look for articles and news. Once in a while their eyes were caught by an interesting headline. It is more often a male that uses the system in this perspective. The health care practitioner uses the system this way too.

In the **outside-in** perspective the focus is on the use of the site with a specific purpose in a specific situation. The users have a problem that arose in the world and expected to find answers in the system. These users had urgent need for information and browsed the site to fulfil this. They asked questions, and they expected a quick reply. It is mainly women who have the outside-in perspective.

	<b>Patient: Disease controller</b>	<b>Patient: Disease neglector</b>	<b>Relative: Emotional mother</b>	<b>Relative: Professional mother</b>	<b>Medical practitioner</b>
<b>Cause &amp; action</b>	Causal (it is possible to find the cause for an attack/rash)	Deterministic (the causes can be found, but they are not important to find)	Causal (it is possible to find the cause for an attack/rash)	Causal (it is possible to find the cause for an attack/rash)	No focus on the causal relationship
<b>Relation to disease</b>	Instrumental	Ad hoc information seeking according to need	Instrumental	Ad hoc information seeking according to need	Patient must learn to accept their asthma
<b>Know- ledge</b>	Disseminated information. Active search for information	Experienced information. Information is sought when acute needs appear	Disseminated information. Active search for information	Experienced information. Information is sought when acute needs appear	Courses arranged by the Danish Medical Ass. or the medical industry
<b>Inform- ation type</b>	Research articles, news, etc.	Funny information, clarifying information	Instructive information	Research articles, news, etc.	Medical journals, easy read articles
<b>Relation between GP and patient</b>	The GP is perceived as ignorant on subjects concerning asthma and allergy	The GP is perceived as ignorant on subjects concerning asthma and allergy	The GP is perceived as ignorant on subjects concerning asthma and allergy	The GP is perceived as ignorant on subjects concerning asthma and allergy	The GP is a consultant for the patient

Table 2: User segmentation

## 4.6 SUMMARY

In general, LinkMedica is regarded as a very reliable and advantageous system by both patients and health care practitioners. However, only a few use LinkMedica as intended, and most users, patients as well as health care practitioners, stop using the diary after some time. There are several reasons for this. The main reason being that the Internet in general and LinkMedica in particular are still not integral parts of people's everyday life. Consequently, if LinkMedica is to become more

popular, it needs to be adapted to the conditions of the users, so it becomes a natural and integrated part of their everyday lives.

As mentioned earlier, the four user inquiries were not performed as scientific research but rather under the conditions of a consultant. In the following I will return to the conditions of how LinkMedica came to be as it is today, but before I discuss the history and organisation of the development of the site, I will present the methods I use for scientific inquiries.





# 5. METHODS AND STUDIES

## 5.1 INTRODUCTION

The studies I have conducted to support this project fall into three categories: user inquiries performed as a consultant for Astra-Zeneca, interviews with members of the e-business group and different actors in the LinkMedica project, and workshops with participants from the e-business group.

The initial user inquiries were part of the LinkMedica project and were consultancy work, but they played an important role in the workshops and I will reflect on the part they played and the relationship between the results from the inquiries and the outcome of the workshops.

The initial interviews served the purpose of understanding the background for LinkMedica.dk and to get an overview of the participants involved and their preconceptions of the users. The last interviews were conducted with the workshop participants to get an understanding of how they viewed the workshops, the

experience gained, and the methods engaging personas and scenarios.

The workshops in themselves explored the methods involved in developing engaging personas and scenarios and they produced an outcome of concrete descriptions of personas and scenarios. The results served two purposes: to inform the methods and to consider whether at if the methods can change and influence the perception of the design process.

In this chapter, I will look at the different scientific methods for collecting data I have used in the different studies. Different both in terms of methods used for data collection and in the relationship I had with the persons I confronted. I have for all studies used qualitative methods.

## 5.2 THE QUALITATIVE METHOD

*“To prepare an interpretation is itself to construct a reading of those meanings; it is to offer the inquirer’s construction of the construction of the actors one studies”*  
(Schwandt 1998) p.118

The understanding of the world as inter-subjective is the perspective of the qualitative method. This goes against the positivist paradigm with the perspective of the world as being objective and measurable. To use qualitative methods is no longer entering a battlefield and the qualitative methods have long ago proven to give insight in areas that are hard to gain access to

otherwise, and the investigative and explorative nature of qualitative methods have become widely accepted (Dahler-Larsen 2002).

In my understanding the world is inhabited by conscious fellow men, who have subjectively motivated particular interests. I am able to interpret their behaviour and must use my past-lived experiences to construct meaning of their behaviour. The interpretation is seen “from an actual now and from a valid reference schema”. (Schutz and Luckmann 1973) p. 16. This interpretive approach is present both in the humanities and in the social sciences. In the humanities the interpretation is to understand the meaning of texts. While social sciences interpret to understand social phenomena (Kjørup 2003). In the analysis and the interpretations I perform in order to answer my research questions I look at social phenomena as well as analyse the produced engaging personas and scenarios as texts.

From the social science perspectives the interpretative approach includes both the hermeneutic approach from sociology, the phenomenological approach and the critique of scientific positivism. The purpose of the interpretative approach is to understand social phenomena, to understand the lived experiences and the complex world these experiences take place in. And the understanding is from the point of view of those who live in the world (Schwandt 1998). This view on the world is close to that of the humanities, where the world is seen as a construction and we, as human beings, are subjects that are in a dynamic relationship with each other and with the objects that

are in the world. The researchers are subjects too and are part of the social world and the culture within which they work. The researchers must acknowledge that this is their role both in the collection of material and in the interpretation (Halkier 2001).

The interpretative approach distinguishes between the subjective experienced reality and the research objectification that the understanding and interpretation of the reality undergo. As the quote in the beginning of the section shows it is not possible for the person doing the interpretation to keep a distance to the subject one studies. As the researcher performs interviews, she is constantly part of the dialogue with the person being interviewed, a part that continues in the interpretation. As a researcher I both construct a setting in which the interview takes place and I construct the meaning not only from the single interviewee but also from the totality of interviewees. When I as researcher participate in the object studied, in this case the two workshops, the distance to the subject studied becomes almost non-existing.

### **5.3 TO UNDERSTAND**

The qualitative approach is more interested in matters of knowing than with methods as such, but from the overall understanding of the world (ontology) to the understanding of the nature of the relationship between the researcher and what can be known (epistemology), methods develop (methodology). In the case of the interpretative approach the distinction between the ontology and the epistemology disappear (Guba and Lincoln 1998).

The following seven principles (Kvale 1997) p. 58 provided a guideline to an understanding of the conventional qualitative technique. As a method the techniques are to compare and contrast through a dialectical interchange (Guba and Lincoln 1998). The first principle has its origin in the hermeneutical circle: a text must be understood in its partial elements and these must again be understood as part of the text in total. The totality cannot be understood without an understanding of the parts (Kjørup 2003).

1. The interpretation alternates between looking at the parts and looking at the totality in an ongoing process.

In the interpretation of both the interviews and the transcripts of the workshop discussions I found various themes. These themes were looked at across the material and patterns developed from the comparison of the themes. The individual patterns were compared with the overall understanding I had gained. As it will be seen later I found in the initial interviews a series of oppositions between the involved partners that creates different alliances among the involved groups.

2. The interpretation stops when a logical meaning is derived - a meaning that makes sense without inconsistency.

Interpreting what happened in the workshops involved both looking at the transcripts and looking at the written material produced in the form of personas and scenarios.

In analysing the written material I found that coherence had an impact on the way the persona is perceived. When the same impact was seen in the analysis of the transcripts of the discussions the interpretation created a logical consistent meaning.

3. The partial result is tested. Does it obtain a meaning in comparison with the overall result?

The above mentioned example with oppositions can be used to illustrate this point as well. After looking at the different themes and finding oppositions in each, the interpretation of shifting alliances made sense when looking at the material in its totality.

4. The autonomy is looked at in order to obtain an understanding of the meaning from the perspective of the subject's own life-world.

To understand both interviews and workshop discussions I needed to understand the background of the individual person I focused on. Often a statement could only be understood from the position the person took or a knowledge of the person's background. E.g. there was a difference in the discourse of a statement when I focussed on the person as a medical doctor or when looking at it from the perspective of being part of the e-business group.

5. A relation to the subject that is investigated is obtained and an overall understanding of the subject in order to interpret the nuances and different contexts the meaning can be derived from.

The relationship I was involved in differed – from a one time meeting in an interview session to the long term relationship I obtained with the e-business group.

6. The role of being a researcher is dealt with, in order to make the preconceptions explicit.

My preconceptions are derived both from the initial interviews and from the research questions I propose where there is no shared understanding of the users. A critical take on the concept of personas and scenarios – engaging personas and scenarios - might provide this. The perspective of change in the project LinkMedica is to see if a shared understanding can be generated. I have my own agenda as well; as I want to study the methods in practice to see what impact they have on a design team.

Another issue relates to my relationship to the e-business group. My long-term involvement with the group, from the initial interviews over the workshops to the last interviews, created a bond and a preconception of what had happened in the workshops. I had some difficulties with this in the last interviews as I, at times, was too

involved in the workshops and too close to the participant to be an objective researcher. These circumstances will be dealt with later.

7. An understanding of that every interpretation includes both creativity and innovation.

The experience of getting an understanding across a row of interviews, to suddenly be able to see through the individual interview, and to find patterns cannot be explained. The feeling of using past experiences in the now and to get a valid scheme is beyond comprehension.

The materials I have gathered vary and my role does too. The interviews session had special circumstances and unique flows. I had different agendas: in the initial interviews I persisted in piecing together the history of the project from the information I got from each interview. I was told different stories that viewed the project at different levels and began at a different period of time and place. In the final interviews, I looked at the participants' perceptions of the methods, but whatever I did, the form of the data collection has mainly focussed on communication between partners either in the form of interviews or in the form of discussions during workshops.

The interpretations I present derived from data collection and the data collections derive from my meetings with others, but these meetings are quite different whether I, as researcher, keep a distance to the interviewee and let her or him inform me or if I



participate in a workshop where I, together with the other participants, must reach a result. In the next part I will first look at the research interviews and later at action research, which resembles the methods of research performed in the workshops.

## 5.4 TO INTERVIEW

As form the interview is guided by the questions and provides access to what the interviewed person wants to express in the situation. The research interview differs from other types of interviews as it is not to be published in its entirety. It can hold multiple forms that are more or less formal and more or less dialogical. I was never in doubt whether to interview or not, as it enabled me to understand both actions that had been and the interpretation of current behaviour. I could not have gained this knowledge by observing or by questionnaires.

There are several types of research interviews (Jacobsen 1993). In the informal research interview, close to conversation, where the participant might not be aware that they participate in an interview. In the guided interview, the themes guide the horizon of exploration; questions are open and the researcher extracts at intervals. The standardised research interview is close to a questionnaire; each interview follows the same row of questions. The questions are closed and the material can be treated statistically.

I chose a type of interview that is close to the guided interview where I had a list of topics and questions I wanted to investigate. Most interviews had periods of informal interviewing, where I

opened up for a conversation about the topics and gave my own viewpoints. As I gained insight into the process and history each of the initial interviews led to new questions to be asked in the next interview. The final interviews were conducted after the workshops but my position differed from the initial interviews. I had been part of the workshop and had experiences and interpretations of the chain of events I wanted tested. I was no longer an outsider gaining insight but an insider trying to attune my interpretations with that of the interviewees.

## 5.5 TO BE A STRANGER

As an interpreter I am a scientific onlooker of the social world. I refrain from participating. I classify in accordance with scientific ideals and try to distil a meaning from the observed persons. This is quite different for the interviewed person who lives in the social world and experiences the world primarily through his actual and possible acts and secondarily as an object for thinking. (Schutz 1976)

As an interviewer, I have an insight that goes beyond the life-world of the interviewee. I add my knowledge from interviews with others, my knowledge about the overall subject and interpret while interviewing. It is hermeneutic work: a constant move from part to whole, and vice-verse. And at the same time a shift in position between the ignorant person and the knowing person. The ignorant person who searches to be enlightened through the interview and the knowing person who, in the situation, compares information with information from previous interviews.

I am an observer too. "Subjects are seldom able to give full explanations of their intentions or actions" (Denzin and Lincoln 1998) p. 24. I take what the interviewee says for face value unless I observe breaks. I compare the information I get about behaviour with what I see in and know from the surroundings, validating the statements.

If I look at the differences between the interview situation and the workshops with the terms we-relation and thou-relation (Schutz and Luckmann 1973) it provides an understanding of the shift in position. In the thou-relation I experience somebody as "like me". The we-relation is a reciprocal thou-relation where both parties are interested in a relation. When I reflect on the we-relation, the partner becomes an "Other".

The relations in the workshops differed from the relation in the interview situations as the reflective position turned an experience away from a shared We-relation and placed me as researcher outside the relation. The interviewee became an "Other", an object for thoughts (Ibid. p. 64). The more reflection the less lived common-experience.

This became obvious when I interviewed the participants after the second workshop and D. expressed that in the situation he felt he was going to be examined. I had never anticipated a reaction like that. I knew the interviewees, we had worked together for one and a half year, but the surroundings (my office), my status (researcher) and the theme for the interview provided

the shift in position - I had become the observant Other. (Schutz 1976)

## 5.6 ACTION RESEARCH

I treat the workshops with the e-business group as part of a change in the understanding of action research. The change was not so much an organisational and emancipative change that took part during the research process as a change in mindset – a change in perception of the user and change in the perception of future design processes.

The aim of action research is not to explain, but to create change. Its focus is on improving a specific case, in a specific period of time, taking place at a specific locality. (Toulmin and Gustavsen 1996). The change had originally an emancipative perspective that allowed workers to change work and environment.

Action research is a social interaction between the researcher as agent and observer and the surroundings. A social act is played out in a specific social environment, thus providing a change in the environment. Action research involves two stages: a diagnostic stage, where the situation is analysed and a therapeutic stage where the change experiments take place and the effects are studied. (Baskerville and Wood-Harper 1996).

In my research process I shifted between gathering data according to a more “traditional” qualitative model – interviewing, interpreting and communicating data - and a more experimental phase, where my role was active and I created a

room for a design experience together with the participating designers. The experiment became part of the designers' experience of other ways to conduct a design process and created a change towards a user-centred design process.

The process of action research has five distinct characteristics (Baskerville and Wood-Harper 1996):

1. A varied social environment
2. Hypothesis formation about observations
3. The researcher's intervention
4. Participant observations
5. The study of change in the social environment

Action research accounts for a number of different attitudes towards the process. There is a great variety and no methodological canon to be followed. There are commonalities though, as change and involvement are present in all processes.

The characteristics shared by the different attitudes are:

- The process – it can be either iterative, reflective or linear
- Structure – rigorous or fluid
- Researcher involvement – either collaborative or facilitative
- Primary goal – either organisational development, system design or scientific knowledge

### **The process**

The process has three variables: iterative, reflective or linear

- An iterative process with a constant change between action and problem diagnostics

- An iterative process with focus on a reflective analysis of recognising differences between theories derived from practice (theory-in-practice) and theory the individual claim to follow (espoused-theory)
- A linear process model with a focus on a fixed sequence of actions

The process I started was linear. The first workshop on engaging personas was founded on the results from the interview sessions and it laid the foundation for the second workshop where scenarios were developed.

It is the process as such that provides each individual participant with an understanding of how the methods can influence and support the design process and the interface design and what can be gained by it. In the process there is, so to speak, a hermeneutical reflection where both part and whole create an understanding of the necessary change towards a user-centred design process and an understanding of the impact on design this process can provide.

### **The structure**

- A series of steps carried out in a fixed sequence
- A loosely defined fluid structure.

The structure has been both fixed and fluid at the same time. Fixed as persona creation is followed by scenarios, fluid in structure, as I had to accommodate changes in participation, negotiate changes with participants in decisions whether to work

collaboratively or individually, and in the process when a second workshop was added.

### **The researcher involvement**

- The collaborative involvement includes the researcher as a partner on a par with the other participants.
- A facilitative involvement demands that the researcher is an expert on the subject. It is still a collaborative work, but the researcher has the role of expert providing his view on the subject. The decisions about interventions are still decided amongst the whole team.
- In the expert involvement the researcher is an expert, who defines the problem and the interventions.

My involvement has been that of an expert who facilitates an awareness of the design process and the users. The final solutions for the design are entirely up to the designers. It is the individual designer who creates an insight into how a future design process shall be.

**The primary goals:**

- Organisational development
- System design – to create or further develop organisational systems. These systems are perceived as structural artefacts created by humans as consequence of human organisation with or without the creation of a computer-based system.
- Scientific knowledge
- Training

The primary aim has been to look at how a group of designers has been able to use the methods presented to develop engaging personas and scenarios in the design process, how the methods have influenced their view on the design process, and their understanding of the users. For the participants, it points to both a further development of a system and can be a starting point for an organisational development. And to me it, in addition, points to an understanding of the methods in action.



Process	Method	Content	Focus area
Cooperative Process	Workshop	Discussion of the number and details for the engaging persona	Defining the target group
Group process	Workshop	Creation of engaging personas with a starting point in the user studies	To create likeable characters and avoid stereotypes
Cooperative process	Workshop	Discussion of engaging persona	In the light of the user studies and stereotypes
Individual process	Workshop	Rewriting of the engaging personas	Engaging personas must provide engagement in order to question the site design
Individual process	Workshop	Creation of scenarios	Scenarios should provide ideas for the further development of LinkMedica and pinpoint problem areas on the site
Cooperative process	Workshop	With a starting point in the individually written scenarios a reflection on design ideas and perspectives for development of LinkMedica	Ideas for further development is discussed in a shared process
Individual process	Interviews	Reflections on the workshop and the impact on future design processes	What are the lessons learned? When and how can the engaging personas and scenarios be part of the design process? Are there hindrances?

Table 3: Overview of the phases in the two workshops

The workshops I facilitated did not use a predefined method, it focussed on systems design, had a rigorous structure and a blend of research roles was performed, but whether action research

takes place within the system design area or within organisational development, the implication of the research is that a change must take place. If I view the LinkMedica project in the light of change, an organisational change was not necessarily going to take place; from the beginning it was clear that there might be too many obstacles for change on an organisational level. Instead the change was both at an individual level, where each participant experienced a learning process and gained an 'aha'-experience, and at a departmental level where they together experienced the implications of a user-centred process.

The execution of the workshops emphasised the participants' own interpretations and needs. These are captured in the interviews where the participants reflected on the personas and scenarios they created as well as on how this experiment could influence future design processes. As a researcher I did not reflect on the actual design practice and the organisational obstacles. I did however reflect on the outcome of the experiment. I reflected on the personas and scenarios created in light of theories presented and the terms "engaging personas" and "narrative scenarios" as well as reflecting on how the discussions furthered design ideas.

### 5.6.1 THE WORKSHOPS

The workshops followed the five phases of action research developed by Susman and Evered (in (Baskerville 1999)).

1. Diagnosing – the diagnosing started with the first e-mail sent to me where D. formulates the wish to know the

user. It was later underpinned when I had analysed the initial interviews and found a lack of shared understanding of the users.

2. Action planning – it was soon decided that the action had to be in the form of a workshop. From the beginning we thought we could deal with both personas and scenarios in one day, but during the first workshop we realised that one was not enough and decided on a second. This decision was taken during lunch and everybody agreed. The actual programme for the workshops I planned alone.
3. Action taken – the accounts for the two workshops
4. Evaluating – the participants evaluated individually throughout the interviews. There has been no shared evaluation of the methods and the workshops.
5. Specifying learning – until now this has been an individual process. With this dissertation the learning will be specified. After the workshops I have had a request for the scenarios and they seem to be used. I have also written an journal article together with Jacob Anhøj (Anhøj and Nielsen 2004) that evaluates on the lessons learned of user knowledge. I can see a learning that goes in two directions: a learning that evolves around the specific methods and a learning that evolves around the user understanding.

## 5.7 TO ACT

With me conducting workshops and participating in them I suddenly became an actor playing a completely different role

from that of the interview sessions. Suddenly I was an active part of the result. I interpreted information, communicated it, and initiated the workshops and my actions were part of the outcome. This active position can be compared to that of the action researcher.

It has been argued that the hermeneutical approach has an essentially emancipative interest in awareness (Collin and K ppe 1995). The emancipative approach is even more significant in action research (Aagaard Nielsen 2001). If I view the project I participated in through the lens of emancipation, the participants gained an understanding of a user-centred approach to design and they reflected on their previous approach, they became aware of their previous systems development process, and came to wish to change it to a process with the user in focus. There were boundaries such as the obstruction set by the company and to change these was not part of the project.

The I-, we- and thou-relations are in constant shift when the researcher participates in action research. At first it is a we-relation, where the researcher and the participants meet in a concrete relationship in order to move the action forward towards a common goal - in my instance to improve a design. Later the researcher has to reflect upon practice, to understand what happened, and see patterns and motives in the action. In this phase the we-relation change and is split into an "I" that reflects and the participants as "Others".

My role changed when I entered the room in which the workshops took place from an observant researcher to an active participant. It changed to an engaging role that supported the team in creating engaging personas and scenarios. A role that is close to that of the action researcher. When closing the door after the last workshop, the role changed again to that of the traditional researcher - with the duty of analysing videos, conducting interviews, and reflecting on the process.

From an outside position, these changing roles seem fluid and unquestionable but when I entered the workshop the shifts felt complex. I was no longer the "I". I was part of the team, guiding the collaboration but at the same time I was an observer. I recorded the events; I tried to remember observations, but got caught in the actions. It was a double position between being in the we-position and being an "I". And this progressed to the interviews where I was the reflecting "I" who had gained knowledge from the data collection, but I was also in a We-relation during the interviews where we, the interviewee and I, together created communication and meaning.

## **5.8 TO TREAT THE MATERIAL**

In the following I will, with inspiration from [Olsen, 2002 #102], treat some of my consideration of the research design in the hope of making the processes, considerations, and decisions transparent.

The whole set-up of the projects originated in my own experiences from two different fields of practice: From my work

with film scriptwriting I have an understanding of how to describe a character in writing. When I started working with users and perception of users this understanding was brought to the field of interaction design. My research is not value-free I had from the beginning an idea that the field of film scriptwriting might be able to improve the portraits of users – the personas - and that the field of narratives might improve scenarios. The research explores these presumptions.

The knowledge I want to pursue stems mainly from an explorative research design but also from a research design that uses theory for knowledge acquisition. The aim is to get knowledge of previous perceptions of design processes and to see if the perceptions change when using concrete methods, but it is also the aim to improve the methods. This creates two distinctly different ways of looking and treating the data.

In the first instance, I found an explorative approach appropriate. I did not have a theory I wanted tested, I had no fixed number of informants, but rather wanted to get access to as many as possible (this goes for both interviews sessions as well as the workshops)<sup>7</sup>.

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<sup>7</sup> To work in a commercial setting as researcher creates demands where the researcher is not free to move independently. And as it was the case in my research I had no overview of key players from the beginning and conditions changed rapidly. The decision to make a group interview in Lund with as many of the Swedish partners as possible came out of necessity, I had a chance to meet them if I had them together, the schedules were inflexible. This was my luck as some of them soon after changed positions and would have been difficult to get access to.

The interview guides came to create some of the themes found, but the thematic units did also stem from other information I got during the interviews. The informal way of interviewing matched the set-up of the explorative design. The focus on perception instead of concrete working processes, did also frame the set-up. Most of the work on LinkMedica had already been done when I started my work and I could only get access to opinions and perceptions of users by interviews. I had no access to material that could have helped me. I view this as an advantage as I got access to the participants' lived experiences and had no material to check their experiences against.

The interview as tool for data collection was also a method to get access to the participants' perception of users. The same considerations cover the final interviews. LinkMedica is not to be changed and the only way I could gain access to the participants' perception of future design processes and their perception of the workshops was by interviewing.

The analysis of the workshops and the produced texts had another aim and flow. I had a framework I wanted to test and explore in action. The analysis constantly compared the discussions and texts to this framework.

### 5.8.1 THE INTERVIEWS

When analysing the interviews patterns appeared, but the way they appeared could be quite different.

The way I worked can be described as:

1. Coding – when treating the data the researcher looks for meaningful units that are coded and given a subtitle.
2. Categorising - each unit is later organised into categories or themes (Halkier 2001). The themes are looked at to see whether there are conflicts between patterns or contrasts. In order to “bind the material” (Dahler-Larsen 2002) individual units are rejected.
3. Meaning making – the themes are read individually and in their totality and meaning is derived.

Categories can be formed either from theory or from data. In the instances I have worked with the categories were derived from the data and not from theory, similar to the five steps suggested by Kvale (Kvale 1997) p. 192:

1. Each interview is read in its totality
2. The researcher decides the natural units as expressed by the interviewed person.
3. The theme that each unit expresses is communicated in natural and stylistically simple terms
4. The researcher questions the units from the objective of the inquiry
5. The themes are connected in descriptive statements

I have worked with the same method throughout all interviews: 1) each interview was transcribed in its totality without the use of marker for pauses or insecurity as I have taken the spoken words for granted and not looked at attitudes. 2) Each transcript was divided into thematic units. 3) Units with similarities were



treated in their totality. 4) The units provided a basis for an overall categorisation and interpretation.

### 5.8.2 THE WRITTEN MATERIAL

The model for constructing engaging personas and scenarios were used as a guideline for the analysis of the written material. The model provided me with elements that are used to create an engaging persona and the narrative elements a scenario consists of. When analysing the written material I looked for both character and narrative elements in order to decide the level of engagement and the level of narration. The written material was later compared with the discussions in order to see if the missing elements might turn up in the discussions.

### 5.8.3 THE VIDEOTAPED MATERIAL

I choose to videotape the sessions as it gave me the benefit of being able to see who spoke and during the writings of the personas I could see which participant did the writing and when the writing took place. The videos were transcribed and notes added when these significant actions occurred. In the transcription and interpretation I treated the videotapes no different than the audiotapes of the interviews. I did not look at body language or movement in space and time but mainly transcribed the spoken words.

The videos gave me another insight that has to do with my own role in the workshop. As I played a very active role in the plenary discussions and as I held the information about the users, the

video enabled me to look at my own role in a view that differed from my memory.

Video in research is often used to observe what happens in front of the camera, whether it is anthropology or research on patterns of communication (Rasmussen 1997). The researcher is an outsider that observes through the camera and interprets the data. The influence on the data by the presence of the camera is discussed. My aim was to use the video as documentation of what happened. I have not been an observer but was part of the happenings and had a role similar to the other participants. I believe that the video had no influence on the group discussions<sup>8</sup>. The video and I had an influence on the group, who made one of the persona descriptions, but I as a researcher do not judge the influence to be fundamental and the persona description would not have been different. The camera did not seem to influence the other group. In treating the material I focus on the discussions and very seldom on the actions. I have transcribed the material the same way as I did with the interviews and coded it in the same manner.

But the video acts as documentation and triggers my memory. By being forced to look at myself I had as a researcher an internal discussion of how I remembered the workshop and the selections the video showed me. Together memory and tapes formed the analytic material. With an audiotape is it much easier to enhance

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<sup>8</sup> We (I and B) forgot to change tape as our awareness and absorption in the workshop was complete.

the memory and suppress the material, as it does not force the look on oneself - the look on a stranger.

This way I most often looked at the video was as mere text but at moments that deals with my role or where it triggered my memory it played another role. If I use the terms *outside-in* and *inside-out* (Nielsen, Orngreen et al. 2002) to understand my approach, where the researcher alternates between an outside-in position where the researcher tries to identify with the material and the distanced position of the inside-out where an analytic approach is applied to the material, I have mainly been in the inside-out position. But the material has grabbed me in moments that dealt with my role or my appearance and which provided me with new understandings of the happenings and the memory I had of the happenings.

In the interpretation I used the hermeneutical method - coding, categorising, meaning making - as I did with the interviews. I looked for themes in the transcripts that could provide me with categorical patterns in order to guide the meaning making. The aim of the interpretation was to look for patterns in the negotiation that took place when designing the engaging personas and scenarios and to look at the transition from discussion to text to further discussions. In these analyses I used the videotapes as a source for information and compared the discussions with the written materials.

During the interpretation I used two different strategies for meaning making:

1. To let the material speak to me, both from its partial elements and from its totality.
2. When I looked at the argumentation for whom to target and the negotiation strategies I looked for themes and patterns in the material. In the material I saw a negotiation take place and it was the material that provided me with the categories of negotiation. I looked at each group session and found similar patterns in the comparisons.
3. To use a framework to look at the material.
4. When I looked at how the group understood the material during the presentation and at the written drafts of engaging personas and scenarios I used a theoretical framework to create meaning from the material.

## 5.9 JUDGING VALIDITY

Qualitative research can move on several paths but one principle seems to unite the research: transparency. Validity is not a search for a truth that can be verified but rather a perception of a justifiable knowledge that can be falsified. The researcher must be explicit and motivate every step in the research process as well as the scientific preconditions and assumptions (Olsen 2002) p. 149.

Validation can be seen as the discipline of argumentation. Kvale (Kvale 1997) operates with two ways of judging the validity of an analysis: as good workmanship and as response to the interpretation.

As good workmanship:

- To control
- To question the data
- To theorise

Response to the interpretation:

- To get response from interested partners by communicating the material - not only from the scientific community but also from the public as such.

It was not my aim to theorise but to look at a concrete project that might be able to point at ways the methods engaging personas and scenarios can be used. As my approach was explorative I came up with assumptions and guidelines for further studies. I had no studies to compare with and it was not part of my agenda to do so.

I will in the following consider each inquiry and will reflect on the validity of each study.

## **5.10 THE DATA**

### **5.10.1 ORGANISATIONAL INTERVIEWS**

During the time I have followed the project, people have changed roles, the design company is no longer involved in the project, key persons have left and others have arrived. Such are the circumstances researchers face when working with the industry but it has made the understanding of the process more difficult.

I began by interviewing key persons from both AstraZeneca and from the involved design company to get an understanding of the design process. I wanted to get information about the history of the process as it was very unclear to me what had happened when, who decided what, and who were involved.

The interviews were not planned in advance. The first interview with the Webmaster led me to identify key partners in the project, such as one of the initiators of doc-to-doc. net and the three participants from the R&D department in Sweden. During the interview with the R&D I got information about the project manager at the design company in Stockholm. I managed to set up an interview with him more than six month after I began the interview sessions.

During the initial talks it became clear that there was, or at least had been, a conflicting relationship between the Danish partners and the Swedish partners. I wanted to find out why, to understand the reasons for it, and at the same time get the involved persons different point-of-views on the conflict I sensed. It was a highly sensitive matter and none of the involved partners openly expressed the differences in opinion and the frustrations, but it was sensed in the interviews and the theme was followed in later interviews. As the interviews were conducted over a long period of time; some were interviewed in the middle of the process and expressed strong feelings; others looked at the frustrations with hindsight and showed understanding and could offer explanations.

As previously shown (Sharrock and Anderson 1994) designers talk about users without ever meeting one, and during the talk, the user is constructed as a figure. In the example with AstraZeneca, as with Sharrock, users are always present in the designer's mind in some form or other, they are unconsciously part of the design process as somebody the designers speak of without ever meeting one. I wanted to gain knowledge of how the involved partners perceived the users and how much this subject had been discussed during the process.

All interviews were conducted in a semi-structured form around an agenda, but they could develop in other directions if I found it interesting. Each interview lasted approximately an hour. The interviews were transcribed word by word. A Swede transcribed the interviews held in Swedish, as I lacked the necessary skills to understand the language when taped. I had no difficulties with language during interviews. Each interview was broken down into thematic units and these were compared across interviews.

My role changed during the interview period. In the beginning I was mainly interested in understanding the historical facts and the interviewed person's understanding of users. As I gained more and more insight I tested my understanding of the process and the conflicts. My role as an interviewer changed from a structuring and guiding role to an open and interpretative role. (Kvale 1997) p. 152.

### 5.10.1.1 MY ROLE IN THE ORGANISATIONAL INTERVIEW

During the interviews my main objective was to gain an overview of the process and the different partners involved. I soon came to

realise that the process had involved a lot of tension between the partners and the existence of conflicting interests. I pursued these conflicts during the interviews and came to possess knowledge of how each partner viewed the other partners that I had to suppress in the interview situations. My role was that of the outsider who tried get an understanding of a process and how it had been to be inside and participate in the process.

### 5.10.1.2 VALIDITY OF THE ORGANISATIONAL INTERVIEW

The interviews cannot be judged from a validity perspective. Each interview offered a unique viewpoint and looked at a unique situation. Each interviewee was unique both in the interviewee's perception but also as the interviewees came from different organisation and therefore had different agendas in their connection to LinkMedica, but despite these differences, when looking at the interviews in their totality there are similarities and a pattern has emerged. In the final interviews I had the opportunity to ask questions to the workshop participants not interviewed in the initial interviews. Through the various perceptions of the process I gained insight, which, at that time, underlined my interpretations of the first interviews. I have later shown the analysis to the e-business manager and he had no objections to the interpretations but found them very interesting.

As some interviews took place closer in time to the launch of LinkMedica the level of reflection differed. The closer to the launch the more emotive the statements were. I reflect upon this condition in the analysis.



## 5.10.2 THE PERSONA WORKSHOP

### 5.10.2.1 DATA COLLECTION

The material I analysed consisted of five different items: a powerpoint presentation, the videotaped discussions of all plenary session, videotapes of two of the three group sessions, the photos distributed to the groups<sup>9</sup>, and the written material.

All plenary sessions were video filmed. I had asked B. to be in charge of the video camera as she had already an established connection to the e-business group.

In order to understand the material it is important to stress that one group (Helle) out of the three creating engaging personas was not video filmed. Another issue deals with the writings. It was my aim that the participants should write and rewrite the persona descriptions, but I ended up writing the final editions, either because the initial writer was no longer part of the team or because the drafts were not good enough to be used in the later redesign processes.

The material used for the analysis was mainly from two media sources: video and texts. The videos were recorded during plenary sessions and two of the three groups sessions. During plenary sessions the video was put on a tripod at the end of the room and focussed on the whiteboard when slides changed. For

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<sup>9</sup> On the Internet I found the photos of ordinary people in ordinary settings. I got permission to use the photos for the workshop but have not been granted permission to use all of the photos for publication.

the rest of the time it was at wide-angle and observed the whole room and the participants. During group session one video was put on a tripod next to the table where the actions and discussions took place. The video camera was started by one of the two participants. I videotaped the other session with a handheld camera. This influenced the group work slightly as they directed questions to me and the participants felt my presence.

In the analysis I looked at how the participants developed the engaging personas and how they used the photos to support the writing process. The process of writings and rewritings was compared to the model for engaging personas and of how the plenary discussion shaped the later rewritings.

### 5.10.2.2 ROLES

During discussions each member of the group used their viewpoint to frame the arguments; the medical doctors focused on the medical practitioners, the e-business manager focused on business, the Webmaster focused on the Knowledge Centre, and I focussed on information from the reports. It was mainly the older (in age and connection to the project) members of the team that participated in the discussions.

My role was quite influential during the presentation and indirectly through the examples of personas I presented. In the discussions I also played an influential role as I guided the discussions, provoked discussions and summed up.

- I: What would happen if you don't think about all the relatives and the ones with concrete needs?

In this example, it can be seen how it was I who decided how many to target and it was I who ended the discussion by summing it up and it was I who provoked the debate to consider a male patient. The discussion was ended as it, to me, had reached a suitable number (three) of whom to target and when it included both a male and a female audience. The number was suitable for more reasons; it made it possible to divide the participants into three groups of two, and it seemed to incorporate most information from the field data. It can be difficult to engage in more personas, and from a pragmatic point of view one can remember and handle three personas.

It was also part of my role to divide the participants into three groups of two:

1. D. (male) and N. (male) decided to create the male patient – Carsten
2. A. (male) and B. (female) decided to create the female medical practitioner – Gitte
3. E. (male) and J. (female) decided to create the female patient and relative – Helle

### 5.10.2.3 VALIDITY OF THE WORKSHOPS

I will in this part judge the validity of both workshops as they shared conditions.

The main problem area for the workshops is the fact that there from the beginning was no money to implement the ideas developed during the workshops. This made the workshop more of an experiment that had to do with perception than an actual workshop for developing and influencing the participants'

perception of the workshop. The participants took it seriously, but would probably have taken it more serious if it had involved the development of scenarios for implementation.

Both the discussions and the written outcome of the workshop is analysed according to the framework I propose. In the analysis I find through the framework explanations for happenings and I view this as a way to judge my findings as reliable, reliable in the sense that the framework explains and makes sense for these unique workshops.

### 5.10.3 THE SCENARIO WORKSHOP

#### 5.10.3.1 DATA COLLECTION

All plenary sessions were video filmed. During plenary sessions the video was put on a tripod with a wide-angle that observed the whole room and the participants<sup>10</sup>.

The material I analysed consisted of two different items: the videotaped discussions of all plenary sessions and the written material. In the analysis I looked at how the participants discussed the scenarios and how they related to the described personas.

#### 5.10.3.2 ROLES

The role I played in the scenario workshop resembles the role I played in the personas workshop where I influenced discussions and initiated actions. However there was a less strict agenda as well. One of the participants had moved to Sweden and I let the

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<sup>10</sup> Unfortunately not all sessions were taped, as I had to be in charge of the video camera.

participants decide if the writing process should be individual or collective. They decided on individual writings.<sup>11</sup> This created a necessity for a shared draft that stemmed from the discussions. I volunteered to create this. The design of the workshop became less prepared and more influenced by the participants.

#### 5.10.4 THE FINAL INTERVIEWS

The interviews were conducted in a semi-structured form around an agenda, but they could develop in other directions if I found a direction interesting. Each interview lasted approximately an hour. The interviews were transcribed word for word.

In the final interviews, I interviewed the participants from the two workshops with the exception of B. I wanted to gain insight in the participants' perception of the methods and workshops and their perception of the perfect design process.

The interviews were conducted within the first month after the second workshop. All interviews took place in my office with the exception of the interview with N. who had broken an arm so I interviewed him in his home.

All interviews were conducted as semi-structured qualitative interviews. They were taped and transcribed in order for meaning condensation. Each interview was broken down into thematic units and these were compared across interviews.

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<sup>11</sup> At least one of the participants has a dislike against group work. This was expressed in the final interview.

#### 5.10.4.1 MY ROLE IN THE FINAL INTERVIEWS

During the final interviews my role suddenly change and especially one participant took a while to adjust to the new circumstances. D. expressed after the interview that he had been slightly nervous because he had felt he was to be tested in whether or not he had understood the methods. As the interview went along he adjusted to the situation and my new role and the nervousness disappeared.

As I had been part of the workshops I had created my own perception of what had happened and during the interviews I pursued this perception. This was particularly evident in the issue of going from writing the first scenario to the second where I had formed the opinion that this was difficult as the first persona lingered in the memory. As I have formed a close relationship to the participants they did not find it difficult to go against my interpretation and disagreed. They agreed that the final process was difficult but had other explanations too.

#### 5.10.4.2 VALIDITY OF THE FINAL INTERVIEW

Before the interviews I had created assumptions and interpretations about what had happened in the workshops and that the validity of the interviews can be difficult to judge. The question is how much this has influenced the interview sessions? Another issue is the feeling of being judges as expressed by D. where the surroundings had an impact on this feeling as well. As the interviews took place on my home ground the interviewee could feel insecure when being on unfamiliar ground. What goes against this judgement is my long-term relationship with the participants. When they found that I was my usual self they

relaxed. This goes for the participants accept of my interpretations that were not accepted. The participants are self confident, highly talkative, and quickly adapt to unfamiliar surroundings. This makes me judge the interviews as valid. Valid in the sense, that the interviews in total and separate create a picture of the change in perceptions from before to after the workshops.

## **5.11 SUMMARY**

I have in this chapter given an overview of the different inquiries I have undertaken and the different methods and considerations connected to each inquiry.

I have chosen to present the set ups and conditions of the inquiries as well as the judgement of validation before the actual analysis and findings. This choice is taken so the reader will be able to read and understand the analysis and findings in their totality without elements to disturb the reading process. But as the reader not yet has insight into the material and cannot value the arguments it does tend to make the arguments into statements. I hope to make up for this in later chapters.

As I have presented my approach is qualitative, but different whether I perform interviews or organise and participate in a workshop.

I have presented the inquiries and the close connection they have to my research questions; can engaging personas and narrative scenarios influence the perception of the design process at the

design group at AstraZeneca? Can the experiences from the workshops inform the methods of engaging personas and narrative scenarios?

Despite flaws in the set ups of the workshops and in my role my analysis can be judged valid.

I will now return to the actual case of LinkMedica and present the organisational interviews that covers processes and perceptions leading to the application LinkMedica.dk



# 6. THE DESIGN PROCESS - FROM THE STAKEHOLDERS' POINT OF VIEW

## 6.1 INTRODUCTION

To understand the history behind the launch of LinkMedica.dk, the design process, and the discussions amongst the involved partners, I interviewed as many team members as possible. The interviews were performed over a period of six months and were conducted at the convenience of stakeholders who could provide me with insight into the design process.

In the beginning, I only had contact with the Danish core group, but each interview provided me with data that set me on track for the next interview, thus enlarging my contacts both within the company and towards the external partners. Each stakeholder has his or hers limited version of the process and had experienced

it differently from other stakeholders and none of the respondents expressed a full overview.

## 6.2 THE INTERVIEWS

The first interview was conducted in December 2001 with the Webmaster and member of the design team at the Danish headquarter in Albertslund, and took place at their shared office. A medical doctor and member of the design team and a programmer were both present and gave comments. From the interviews I got information that it had been a Danish group of specialists that had been behind the initial development of the asthma-monitoring tool. I contacted the member and interviewed him in his home.

Simultaneous with or shortly after the Danish initiative, the Swedish Research & Development headquarters had initiated an investigation into how they could use the Internet for e-business. The report that followed the investigation inspired the idea of a global development of an asthma-monitoring tool. During the interview at the Danish headquarters I was introduced to H. from Research & Development and an interview was arranged. The arrangement provided me with an opportunity to interview all three major players (H., P. and S.) from Research & Development simultaneously. The interview took place in March 2002 in Lund.

The interview provided me with information that a Swedish design company had been involved. I pursued to get in contact with the project manager L. Despite several attempts to get in

contact with people from the Swedish webdesign company I did not succeed until August 2002. The interview with L. took place in Stockholm at an office of the web design company.

The time span had an impact on the statements. The interviews with actors from AstraZeneca Denmark and the Swedish Research & Development were conducted shortly after the migration from *astma-allergi.net* to *LinkMedica.dk*. The chaotic process was still fresh in the participants' memories and they found it difficult to reflect on the process and they expressed their frustrations in an almost bodily form. The interview with the project leader from the Swedish webdesign company took place more than half a year later. This enabled him to look at process from a distance and reflect on it. The distance also stems from his position in the design process, as he as a project manager was not involved in details but had control over the finances.

### **6.3 THE AIM OF THE INTERVIEWS**

The interviews provided me with an historic insight into the area I was about to enter, an understanding of the roles of the participants, and the perceptions of the users.

The initial aim of the interviews was:

- To get an overview of the involved partners and the scope of the project.
- To understand the history behind the migration from *Astma-allergi.net* to *LinkMedica.dk*.
- To understand the knowledge level and perceptions of the users.

The interview guide contained questions about:

- The history
- The versions, the partners, and the design process
- The interviewee's perception of the users
- The organisational role and daily work of the respondent
- The interviewee's experience with internet based projects
- The qualifications of the interviewees

## 6.4 ANALYSIS

As described earlier, I used the method of natural units and arranged the units in themes that were analysed for meaning. The themes arose regardless of the interview guide.

The themes were:

- The aim for the site
- The aim for the sender
- Branding
- Success criteria
- Process
- Relations between departments
- Cultural differences
- Forerunners
- Power relations in arguments
- Future developments
- Target groups
- Conception of use
- Organisational position
- Experience with Internet projects

Each theme was compared across interviews and an understanding arose from the comparisons. I focussed especially on contrasts in the comparisons, especially in the descriptions of process and scope. Some of the themes were only mentioned by one respondent and were therefore rejected. The themes are synthesised in eight areas. The areas are: target group, aim, organisational differences, cultural differences, differences between local and central interests, differences in understanding the design process, power relations in arguments, and differences in experience with the Internet. The interviews expressed the participants' personal view, but also their organisational view as they reflected on the site and the process from the view of the group they belong to.

In the synthesis of data I use quotes to illustrate the thematic contrasts and themes, and to inform the reader of the richness of the material. I have translated the excerpts from Danish and Swedish to English.

## 6.5 THEMES

As mentioned there have been some differences amongst the department where each wanted to maintain their own interests. These differences have not been expressed in unilateral alliances between the four involved partners<sup>12</sup> but each partner has wanted to state their own opinions and agendas. Argumentation for

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<sup>12</sup> The four partners: AstraZeneca DK, AstraZeneca UK, AstraZeneca R&D, the web company

convincing opponents came from formal power structures and informal arguments based on appraisal of their own knowledge in specific areas: use of Internet, marketing, knowledge of the market, etc.

It is obvious that there has been antagonism between the central part of the company and the two local ISMO's. As I was not able to interview the English branch I have not been able to cover all perceptions of the antagonisms.

There have been antagonisms between the webdesign company and the three departments of AstraZeneca.

The antagonisms can be described as:

- Differences between local and central interests
- Differences in experience with Internet as media
- Cultural differences in the perception of the relationship between the health care professional and the patient
- Differences in perception of a design process

In addition there are several areas that have been discussed but which have not been defined. They have not raised antagonisms and discussions but have created different expectations to the site. These are:

- The commercial aim of the site
- The target group of the site

### 6.5.1 OBJECTIVES

The interviews expressed a difference in interests for the different partners involved. The webdesign company explained it with a lack of objective for the project and that each department had been able to run their own national and/or organisational agenda.

- L: The core for AstraZeneca is to develop something joint, for all. They had been able to get further if they had sat down and had been much more convinced and united around a specific and joint objective. And then later that this is, exactly this is what we shall succeed with. And then you could say immediately: ok I'm in or I'm not in. It was too open and it meant that each could promote his line and it created unnecessary conflicts.

Success criteria were defined as how many health care professionals used the site and how many patients had created an asthma diary. These criteria are measurable but do not express a longterm strategy for the site or any expectations the company have to the site.

- I: Are there any goals, any objectives for the site, or any success criteria?
- H: No, not except our objectives, we have set up certainly, but they were more based on having a market and where we shall be on certain points in time and such objectives. We can't, as mentioned, measure the results in pounds and pence or dollars we can't do that. (...)
- H: Every country must create their own objectives concerning users. Our goal is to implement the site or the application in a certain number of markets. We can't influence how

English doctors and patients use it. It is up to the local companies to use the site as they wish

L: As this is a big group from different parts of a big organisation everybody had different goals to measure on different items. It had been easier to create it if they had had a joint objective. Even when you spoke to people somewhat into the project they described different objectives and different reasons to do it.

L: At the same time, I find that it still lacks the clear objective of what they actually want to do with this. But all these projects you need to make money on it somehow. But the reality is .... It is after all a commercial company.

## 6.5.2 PERCEPTIONS OF THE TARGET GROUP

D: (to A.) Do you remember if there was any user inquiry? Was it something with Mckinsey?

A: As far as I remember there has never been anything written, I believe there have been a lot of agendas. My target group is medical practitioners. D's target group is the users. And K's is the health care professionals. There are a lot of agendas on this. And the advertising agency's target group has probably been completely different. They wanted to make a community for the Asthma-Allergy Association.

D: Yeah they were really community oriented. (...)

A.: I think it is vague (to T.) T. Do you remember any discussion about target group in the early phase? Who was the original target group?

T: For astma-allergi.net?

A: Yeah, what ever? My claim is that this has not been defined clearly at any time and there are many target groups

T: Nothing beyond asthma-allergy patients.



The site has two main target groups: the health care professionals and the patients, but as expressed by P. it was the idea that everybody could benefit from it. There has not been any definition of the target groups beside the rather vague categories. When I asked the respondent to provide a concrete description of their perception of the target group they expressed huge differences in their perception. The perception is connected both to the respondent's own background and qualifications. Both L. and H. described the target group as persons of the same age as themselves. H. saw the target group as being male.

I: If you imagine, what is your perception of a patient who uses it? What kind of person is it, how old and ... do you have any such perceptions?

P: No I find it difficult to imagine

H: It is a male twenty to forty years

I: Yes

P: Yes

H: ... I think, but...

I: Is it a medical doctor or is it a patient?

H: No it is a patient. (...) Most of the patients have probably searched on asthma and found this function or probably a medical practitioner who has said, "let's try this". The reason I believe it is twenty to forty years is that it seems that they are the ones who look for information... and searches for functions like these on the Internet, but is only...

P: I would say the opposite

S: Yeah women...

H: Ok

P: It is women who...

S: It is those who. All surveys says it is women who looks for

P: For information on the Internet rather

S: For information about illnesses than men. But it is still a bit younger patients who, or you should rather say not younger men, there is a tendency that, younger persons tends to use the Internet more than the older to get information rather than other sources and they are used with computers

P: It demands

S: And a bit, and some tech interest as well of course, you must have a bit of tech interest.

D.: I don't know. I have a perception from Netdoktor.dk that it is women and a high percentage is parents of young kids. It is probably most women with a working life who have asthmatic children or has asthma or is relative to someone with asthma. And it is people who know Netdoktor and doctor online. It is women who knows the Internet and who can read the health-sites and can find the health-sites. It is particular users. Particular women who are interested in asthma allergy (...) People who use the net are not necessarily intellectuals or read loads of books. On the contrary, they might look elsewhere. So one should move further down in Lix<sup>13</sup> than in other contexts. This has been difficult to explain to the Swedes that you should move down in perception. The typical user is probably less oriented, text-oriented, literary, than others. That is probably another characteristic.

L: I think it is medical practitioners and patients. Then for the patients how many who are parents to children with asthma or relatives, that's difficult? It is difficult to see that.

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<sup>13</sup> Readability index based on average length of periods and percentage of long words

- I: Based on your perception, maybe you could describe a concrete person who uses, or whom you think is a user. Can you do that?
- L: A concrete person that I think is a user is probably someone. I don't think it matters whether it is male or female, but I think that it is a person around twenty-five - thirty years of age. It is a fairly educated person, more a civil servant. It seems they have easy access to the Internet from work. Why I believe this I don't know, but it is spontaneously it is a, an image I see in front of me. Yeah it is probably someone like
- I: Someone who is?
- L: Someone like myself.

There are considerable differences in the view on the target group; from young males, a technical interested woman, a well-educated person, and a non-academic person, to a woman with interest in health questions. The knowledge that is included in the descriptions is derived from general inquiries of Internet use, own experiences, the Webmaster etc. The implicit and differentiated picture of who it is that actually is going to use the site, makes discussions of concrete solutions and decisions based on a users point of view very difficult.

- L: (...) then there were a lot of discussions of how the local user profile is, in Denmark compared to England compared to other countries. Yes this has been discussed. A joint image is, it was probably, it was probably what was the reasons why they in England felt, or was forced to have a telephone interface for a normal phone instead of the Internet. You can see that this solution is aimed at precisely this group of people and then we will have problems on the market, the telephone interfaces so we can show that this is in fact a

solution for the elderly in the villages who has no access to the Internet and so on.

- I: But who in England? They have it for Internet as well?
- L: They have, they have the same solution as Denmark with Internet and telephone.
- I: So you imagine who should use a telephone and it was an elderly person?
- L: Yes the idea was elderly and or people with no access to or who can't afford computers at home. I find that, the group of this type of people is probably larger in England than for example in Denmark or in Sweden.

The perceptions of the health care professionals, with regard to the target group, have greater similarities. The respondents share knowledge of who a health care professional is and how he behaves.

- I: Who is a typical medical practitioner?
- D: It is a male who is more than fifty years of age and who uses the net very little compared to ordinary people and who is a bit scared, who is a bit sceptical to use this. There are two groups, there are those who use our monitoring part, they will probably be positive towards it and then there are those who in theory read on the site and they will probably be more sceptical.
  
- I: Who is the medical practitioner, the concrete medical practitioner?
- L: I think it is a medical practitioner who, just like the patient
- I: Twenty to ???
- L: Yeah the medical practitioner is probably a bit older than I am
- L: But then maybe max...
- I: Forty, fifty?

- L: Yeah maybe a bit older
- I: Is it a male or a female?
- L: Initially I believe male, but at the same time I think the female medical practitioners maybe they are better
- I: Why?
- L: We build on our, build to, it is probably a very preconceived opinion, but it is as if .. It demands some considerations and longterm planning for the patients and somehow, maybe a female medical practitioner has more empathy.
- I: It is a. Men like technology and women have more empathy?
- L: And an ordinary medical practitioner, I think, often the men are in front, maybe less scared to press a button a bit. Where the female medical practitioner and female patient in the long run are better users

There is a similarity in the assumptions the respondents make of the situation of use. The assumption is that the medical practitioner introduces the system to the patient and the system is used before the follow-up appointment.

- S: But the monitoring part of LinkMedica, you use it together with your medical practitioner and I don't think people will ever use it on a daily basis. But if you, as the goal for the Danes have been, that the patients must, must use LinkMedica, the monitoring part, two three weeks before they are to meet the medical practitioner. That is probably the scenario I see the patients do.

### 6.5.3 THE DIFFERENCES BETWEEN LOCAL AND CENTRAL INTERESTS

A clash of interests was expressed during several concrete incidents.

The local ISMOs have an interest in preserving full freedom over the material to be released on the site. The central part of AstraZeneca has an interest in a common branding with sites that look the same across countries as to further recognition of the brand AstraZeneca.

- D: It is especially which image, which brand the site should have. There is a fundamental understanding of that it must be a neutral site. We agree on that. It is not to be a LinkMedica AstraZeneca site. But some think that it should look the same in all countries. It is to be like a machine that rolls out in every country (...)
- D: Yes this is their success criterion. There are two Swedes in Lund. And it is as if, if this can be rolled out it is good. But I think they have found out it should be more dynamic (...) They are not stupid, but they have had a commercial way of thinking. It needs pacing and it must look alike. But it has changed a bit

As the Danish ISMO and the medical panel had launched *astma-allergi.net* before anybody thought of LinkMedica they felt they were overrun by the internationalisation. They had developed the idea and felt both that somebody overtook their idea and that their position as pioneers within asthma monitoring was under threat.

- K. Feels it is difficult to argue with the Swedes. He feels overlooked by them as they presented the Asthma Control Centre as theirs and presented Denmark as a pilot country while Denmark is actually the pioneer country of the Asthma Control Centre. This has happened recently in Paris. But he feels that there is huge attention now where the project can

launch results – unique results.” (Notes from interview with K.<sup>14</sup>)

For the Danish ISMO the differences in culture were so big that the common objective became a disincentive. It prevented the Danish group from adapting the content of the site to the specific level of information they considered their implicit target group would prefer.

A.: A very concrete example was the pregnant woman.

D: The first teaser I made when we had to migrate was for an article about how pregnant women with asthma probably are not harmed when taking asthma medicine. And I had found such a lovely picture of a pregnant woman. And then some in the concern, in the project group, who runs the project centrally – that’s what they do – who thought that a pregnant woman on an asthma site would be a wrong signal to send. Because people would believe it was a site for pregnant women. Even if it said with huge letters to the left: does asthma medicine harm pregnant women? I meant that people in Denmark could understand it, as they are so trained in Netdoktor and in reading. And this very strict and very square perception of pictures. I can’t stand it.

The webdesign company views the shared process as failed. The intension about a common brand through common navigation and common information on the site were never obtained due to lack of shared objectives and thus everybody ran their own course.

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<sup>14</sup> Unfortunately the tape recorder did not work during the interview with K. In this I quote notes written immediately after the interview.

## 6.5.4 THE DESIGN PROCESS

From the interviews it is noticeable that a common language for and a common understanding of the design process had not been established. The webdesign company used their own approach to the design process and the customers (AstraZeneca e-business locally and centrally) had difficulties understanding and relating to the terms and the process.

- L: As it is for a normal release, the process moves through claims specification. Based on that we bring out Diagram Schematics that is a paper-based picture of all the screens and we develop a sitemap, and a picture of all the codes for each screen, and the different alternatives there are. We move through all that and align it. Then it is handed to development, and then it is developed both front and back, until it is ready for test. Then it is shown again. Often people have been here and have seen certain parts, aligned parts regularly. But mainly it is like this. Get schematics and claims specification that you have agreed on. And the developers are part of it until it is tested.
  
- D: Then they came for two days and we discussed what additions to the English site we wanted. It was a long rigmarole: discussion groups, question panel, newsletter, articles from the association etc. At the English site I had found things that looked awkward. A. had a long rigmarole too. Then they did something called schematics. We have still not understood it. But that's the way they work. It's hard for us who are not trained. It was hard to know what we accepted when we got these schematics. We got them continuously: one on Q&A as they call it – the question panel, then we had to say yes or no. I didn't have a clue of



what to say yes or no to. So it might not be the most optimal way of working.

- H: They didn't have the same experience, they had difficulties understanding what we wanted to do. Initially we probably had a problem formulating it in a clear way so they could understand for them to build it, but ....

The structured process involves no development of a common understanding of the project, the project objectives, the target group, and development of a common language. The webdesign company expects the clients to enter with a common starting point. But as these clients were never able to establish an overview of the process or a common objective, the common understanding was never established.

It is not my aim to make a judgement of who is to blame for this lack of common understanding but it is a fact that the structured approach does not include tools to support communication.

### 6.5.5 PERCEPTIONS OF CORPORATE CULTURE AND ATTITUDES TO HEALTH

The Swedish group had the responsibility to carry out the common strategy for branding and get the project going on such terms that it could be a pioneer project to be duplicated by other countries. The group had to relate to both the two local ISMOs as well as to the webdesign company.

- I: Have there been differences in working with the Danish group and the English group?

H: Don't even ask...

(Laughter)

P: Shall we be honest?

I: Yes... (Laugh)

H: It is as different as chalk from cheese ...

The antagonisms in the relationships are explained with differences in how much the ISMOs engaged in the project. The Danish branch had support from the company management as well as staff to take care of the project. The UK branch had been selected to pioneer and was staffed with only a single person. To this was added differences in attitudes towards the relation between doctor and patient in the two countries.

The Danish department explains the antagonisms as differences in attitudes towards the doctor-patient relationship.

D: But in England you are a patient and you are under an authority, you're not an active player. If you're a user it is you who looks for information and takes care of your illness together with a consultant, who happens to be a medical practitioner. But in the English perception you are under an authority who has the full understanding of your illness and who knows what's best for you.

The webdesign company offer another explanation. In contrast to the company insiders L. was able to reflect on the differences and to him the differences in attitudes towards the system serves as a more fruitful explanation than differences in culture.

L: The biggest difference was possibly there are cultural differences. You can't blame anybody for those, but they're there. (...) The biggest difference I believe, or I find definitive

that they didn't register that everybody had their own demands. Denmark had already an application that worked and they had medical practitioners and patients inside and this way also a lead in the mindset.

The Danish group had wider experience with the Internet as a media for communication. The Webmaster had previously worked for [www.netdoktor.dk](http://www.netdoktor.dk), they had worked with the media for asthma information for a longer period and they had internally cooperated before the main company group started to work with e-business. This provided them with a strong common identity they could use against the other partners – both the company partners and the webdesign company.

- D: I find that they never understood the net in the concern. They are modern enough, and they are Swedes, and they are nice, but they are not as net-oriented. They are very conservative. (...)  
But this way, they think very square and are very nervous in the project group that is in Lund. They're very nervous something shall go wrong.

Only one person in the Swedish group had previous experiences from an Internet based project. This created a room for using experience as an argument in the discussions while company interests were used as counter argument from the Swedish group.

- H: I don't work with the Internet it is our suppliers. We try instead to say what we want  
P: You get more like a project-leader or such  
H: The technical parts you don't know much about those unfortunately

- P: You probably learn all the time when the process runs  
S: We trusted Razorfish a lot  
P: Especially in the beginning  
S: Especially in the beginning now we have trained us up to  
P: Yes and say how we want it instead of, and puts demands on them, and this you can't do and so on and so forth. They have had to take that discussion.

### 6.5.6 POWER IN ARGUMENTS

The lack of common objective and target group made it difficult to argue for solutions. How can one argue when there are no criteria for a persuasive argument? This provided a wide range of ways to win a discussion. The arguments the respondents mention comprise arguments as different as withdrawing from the project, wider experience with the Internet, the company has decisional power etc.

- L: Sometimes it is they who shout who get what they want.  
I: But what kind of arguments is used to get what you want?  
L: It is different ranging from this won't work on our market to we won't be part of the project anymore; to we have done these inquiries. So it is the whole spectrum.
- D: I used my experience from Netdoktoren and my background in communication studies. And both A. and I have a medical background. And we know how medical practitioner and patients think. More than people who are cand.merc. or cand.comm. do. (...)
- D: But it had an impact when you raised your voice and especially when we said we wouldn't migrate. It was at a time where we could withdraw the migration, technically. It worked. It worked when we got our IT-manager to shout. And

he backed us up all along, has been very solidarity. So there were more who shouted in Danish, which helped.

It is worth paying attention to the fact that even in the use of language conflicts are apparent. The Webmaster refers to the English as having envy or being happy for some items. After the interview 25-04 2003 the Webmaster described how he had been surprised when the English group had shared opinions with the Danish group.

D: And the English has asked for some of the things we have created. After they saw ours they were envious, or liked some of it. Why can't we have such a thing? It has been all kinds of small items they have seen and liked. And that convinced the people in the concern who have seen the things we have complained about and the things we wanted. That it has resulted in a better site.

The discussions were put to an end when "someone in the company" was happy with the workable solution or when they were considered "cool". The discussions never involved a user perspective but were judged from what the departments wanted.

## 6.6 SUMMARY

As it can be seen in the interviews the design process was characterised by huge frustrations, by lack of clarity in objectives and defining the target group, by alliances across departments, and by huge differences in culture.

As mentioned earlier, a number of conflicting interests can be pinpointed that can be expressed as oppositions:

- Difference between local and central interests
- Differences in perception of the doctor-patient relationship
- Differences in perception of the design process
- Differences in what is viewed as a reasoned argument
- Differences in experience with Internet as media

These oppositions created a basis for alternating alliances where the webdesign company was viewed sometimes as a player and sometimes as an opponent to the three organisational groups. The two ISMOs were opponents in the cultural perception of the relation between doctor and patient but they were allies against Global e-business when it came to self-management of the site. The webdesign company were in opposition to the three company groups when it came to the design process but were allies with the Global e-business when it came to global branding strategy.

The partners in the LinkMedica project lacked a joint perspective that could judge an argument as valid and, as it was expressed in the interviews, it was the loudest mouth that won. This was due to lack of common objectives and common understanding of whom to target.

The ISMO's did not understand the technicalities in the design process and lacked understanding of the items they where asked to judge. The web design company lacked an understanding of

the departments' ability to judge. And both parties had no language to understand and judge the design solutions with.

The frustrations from the process resulted in the request for a user inquiry that the Danish group sent to me. The four user inquiries are based solely on Danish conditions and aimed at providing the Danish group with a better understanding of the patient users and the health care professional users.

The Danish group stood united against the other groups involved in the projects and had internal discussion, but they did not discuss user perceptions either. It is the hope that the methods engaging personas and narrative scenarios can facilitate this. I will present the methods in the following chapters.





# 7. ENGAGING PERSONAS

## 7.1 PERSONAS

### 7.1.1 INTRODUCTION

As shown in the previous chapter, one of the problems in the development of LinkMedica was the lack of a clear definition of whom the users were and why they should use the system. Each partner had his or her own perception of the user and the discussions lacked valid argumentation. It is my claim that if the user had played an active role in discussions the designers would have had at least one claim to judge an argumentation from. The subsequent low use of the application came as a surprise for the participants. D. expressed this during the first workshop.

D: You can say that the original idea was, when we migrated to this site - these days a year ago - that: if you create a site aimed at medical doctors and patients, medical doctors and patients will use it.

Since I created the first set of user profiles in 1997, or model-users, as I later came to term them, my own work has focussed on the persona and it is my intention to develop the concept further. But before I do so, I will introduce the concept of the persona as it is presented in the still rather small sample of literature before I present the concept of the “engaging” persona.

### 7.1.2 THE FICTITIOUS USER

A persona is a description of a fictitious user. Marketing has used fictitious users for a longer period than HCI, but there is a difference how the term is used in the two areas; while marketing use a user archetype to describe an active approach to appeal to the target groups, systems design use the fictitious user to develop products that meets the users needs and goals (Glaze 1999). The fictitious user can function both as a vehicle to create empathy and identification, a storage for information, and as a method to create a focus on particular market shares.

The terms covering the process of working with fictitious users vary: Personas (Cooper 1999), User Archetypes (Mikkelson and Lee 2000), User models (Hasdogân 1996), Lifestyle Snapshots (Anderson 2000), User Models (McGraw and Harbison 1997), and model-user (Nielsen 1998). The perception of how to describe the user varies from simple definitions of users in classes of first time users or expert users to rich descriptions.

Since Alan Cooper wrote his bestseller “The Inmates are Running the Asylum” (Cooper 1999) the term persona has become the most widespread and it this term I will use. As the concept of

personas developed from the fields of practice there has not been many articles written about the theoretical background for the method. I will in the following focus on three teams of writers who have had an impact on the way personas are perceived and used today. The three teams are: from Cooper Corporation; A. Cooper, K. Goodwin and E. Brechin. From Microsoft; the two teams Mikkelson & Lee and Grudin & Pruitt. Even though Mikkelson and Lee term the fictitious user User Archetypes I will include the article in this review. P. Jordan has not focussed on personas but has in his writings contributed to the development as well. Others will be presented when appropriate, but these are the main writers that have contributed to the development of the term.

### 7.1.3 HISTORIC OVERVIEW

With "Goal-Directed design", and the introduction of the term Persona, Alan Cooper described a method to overcome the difficulties in communicating users' needs to designers and to get designers to understand users. In the bestseller "The Inmates are Running the Asylum"(Cooper 1999) he describes how the method incorporates descriptions of fictitious users and how to focus on the user in the design process.

"Goal Directed Design" introduced a way of looking at problems, guidelines for the design process and, what Cooper describes as, an efficient mental tool (Cooper 1999) p. 123. The central issue is the personas – the "hypothetical archetypes" (ibid. p. 124). Each persona is described as a unique character with specific details and descriptions and not as an average person. As Cooper argues

it is important to choose between the primary persona and the secondary personas, as it is better to design for one person and satisfy this person 100%, than create less satisfaction among a variety of users.

As more members of Cooper.com started writing about the method, the methods developed but this resulted in lack of coherence. As an example, both Cooper and Goodwin mentions goals, but there is a difference between the goals mentioned<sup>15</sup>.

The lack of theoretical framework makes one wonder about the nature of the method.

As Cooper's method became renowned and more people worked with the method, criticism started as well as development of the method. As the method is founded on experience rather than on a theoretical framework most criticism has come from a practical standpoint.

Mikkelson and Lee (Mikkelson and Lee 2000) criticised scenarios, as represented by Carroll, Karat & Bennet and Kaindl, for lacking clarity and consistency in the user descriptions. They proposed a development of User Archetypes. The aim of User Archetypes is first and foremost to communicate the essence of the users and to support the design process. The essence is amongst others captured by use of first person narration and with the use of a language the user would use.

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<sup>15</sup> Cooper mentions personal goals, corporate goals, and practical goals. Goodwin mentions life goals, experience goals, and end goals.

Other views have been added too. Cooper view the basis for the work with personas as partly market analysis partly communication. Holtzblatt (Holtzblatt 2002) adds a business view to the personas and advocates for including business goals achieved with the design and how far the organisation is willing to develop. This perspective comes natural for Holtzblatt as she, in the development of Contextual Design as method (Holtzblatt and Beyer 1996), incorporates organisational development. The systems she has focussed on implied organisational development while the systems Cooper works with does not.

Pruitt and Grudin (Pruitt and Grudin 2003) give a theoretical account of why Personas are an effective tool. They find the argument in our cognitive ability to use partial knowledge to draw inferences and make assumptions about the people surrounding us. This capability is brought into the design process.

Pruitt and Grudin criticise and develop personas on more levels. The criticism is directed toward Cooper while the development is inspired by Mikkelson & Lee.

They find that:

- Cooper underestimate the value of user involvement
- Personas should not stand alone but be used together with other usability methods
- Personas can communicate more than design decisions to designers and clients. They can communicate information from market analysis, usability tests, and prototypes to all participants in the project.

- Other data material should complement personas, both qualitative and quantitative material.

### 7.1.4 DEFINITIONS OF PERSONAS

It is not possible from the literature to come up with an unambiguous definition of a persona that exceeds that of “a persona is a fictitious user”. I will in the following present three distinctively different approaches to what a persona is. Each approach derives from how a persona should be described rather than a distinct definition.

From a goal-oriented point of view, a persona is a fictitious user defined by personal, practical, and corporate goals and by a relationship to the system to be designed; how he or she feels when using the system and what he or she wants to achieve using it. The descriptions of the persona focus on work related areas: workflow, goals, context, and the persona’s attitudes. The advantage of using a persona approach is to focus design and because the persona as a communication tool ends discussions (Cooper 1999), (Goodwin 2001), (Brechin 2002), (Goodwin 2002).

A description of the fictitious user focus on information about: computer skills, market size and influence, activities, and a description of a typical day or week in the user’s life. The description also covers the fictitious user’s fears and aspirations. Contrary to scenarios, personas enhance engagement and reality (Mikkelsen and Lee 2000), (Grudin and Pruitt 2002), (Pruitt and Grudin 2003).

Personas are a way to understand the people who the design is for, as something other than statistics, and it is a way to develop empathy for the users. A description should include characteristics derived from four pleasure areas such as Physio-characteristics, Socio-characteristics, Psycho characteristics, Ideo-characteristics. The characteristics are used to create a cluster for dividing people and it is a prioritisation for the persona description (Jordan 2000).

### 7.1.5 WHY PERSONAS?

In developing LinkMedica the designers had different perceptions of the users without ever meeting one, they never communicated their perceptions. A similar finding is reported by Sharrock and Anderson who describes how designers had an image of the users that were communicated amongst them without ever meeting one (Sharrock and Anderson 1994). It is reported that designers prefer to build their ideas of users on their own imagination and every day life experiences rather than build them on existing information about potential users (Hasdogan 1996) p. 26. The idea behind personas is that the method can aid the perception of users and instead of having individual images create a shared perception of the users that does not built on preconceived ideas but on field data.

The aim of the persona is to develop a scenario from the user's point of view, which creates a foundation for systems development. The claim is that designing for a single and specific user creates a focussed design process that still can target a broader

audience “designing for a single user is the most effective way to satisfy a broad population” (Cooper 1999) p. 126.

The advantage of fictitious user descriptions – personas – is the ability to encourage communication about the target groups and support arguments about features. They can, qua the imaginary quality, provide an empathy with the users where other abstract methods (e.g. User-classes) provide inconsistency in the conception of the users amongst the design team. (Mikkelson and Lee 2000). Personas can create a long-term engagement with the user, as seen in participatory design. The engagement creates empathy, understanding, and awareness of socio-political aspects and life qualities such as values, worries and goals. (Grudin and Pruitt 2002). The discussion of whether real users are preferred to personas is not raised by the main authors, but Jordan emphasises (Jordan 2002) that if real users cannot participate, either because it is not convenient or because of finances, the empathy of personas helps designers focus on users’ wants and needs. The reason why personas can work as a tool is our cognitive ability to use partial knowledge to draw inferences and make assumptions about the people surrounding us. This capability is via the persona brought into the design process. (Pruitt and Grudin 2003)

The persona can function as a vehicle for engagement (Pruitt and Grudin 2003) and it can support a holistic understanding of the user (Jordan 2000). Personas support the design process by communicating the essence of the users through writing techniques e.g. use of first person narration and a language the user would use (Mikkelson and Lee 2000). It can be a storage for information



where memory is enhanced and data organised by the power of narrative (Grudin and Pruitt 2002). It can be a vehicle to create a focus on particular market shares by focussing on a chosen part of the market rather than the market as a whole. And the persona can focus business goals achieved by the design and the organisation's willingness to develop (Holtzblatt 2002).

Viewed as communication, the persona hands the project manager a tool to end discussions about which solutions are most suitable, as discussions are founded on specific users rather than on general cases (Cooper 1999).

### 7.1.6 HOW TO CREATE PERSONAS

There is no unambiguous definition of personas but there is one thing that unites some authors. Both Cooper and Grudin & Pruitt emphasise that a description of users should include user-goals.

The descriptions shall focus on work related areas; workflow and goals, context and the persona's attitudes – these areas are critical for the design. Secondary one or two personal details can be added (Goodwin 2001).

The goals are split into four categories:

- Personal goals. These are simple, universal and personal.  
Personal goals are:
  - Life goals - major goals for life, these are rarely important for design.
  - Experience goals - what the user want to feel when using the product e.g. to have fun and not

feel stupid. End goals - what the user wants to achieve from the product.

- Corporate goals e.g. enhance earnings, increase market share, and/or beat competitors.
- Practical goals. A bridge between company goals and personal goals e.g. avoid meetings and handle clients' demands.<sup>16</sup>

Cooper emphasises that to use personas is a move away from having the system in focus. To consider system goals is referred to as a "false goal". (Cooper 1999) p. 156-158.

Mikkelson and Lee suggest a more humanistic approach. They find the focus on goals to be constrained to the tasks of the user and at the same time constrain the possibilities in design. The goals do not capture the users essence. The user archetype incorporates a description of the user, information about computer skills, market size and influence, activities and a description of a typical day or week in the users life. They add the users fears and aspirations. The users are divided into user-classes focussing on user knowledge, system skills, and work area. From the user-classes User Archetypes are extracted and described (Mikkelson and Lee 2000).

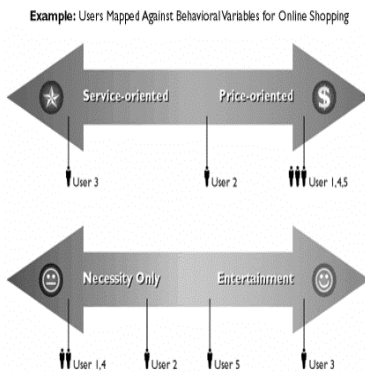
Pruitt & Grudin merge Coopers "goals" with Mikkelson & Lee's fears and aspirations. The description should include demographic information, description of a typical day in the life of the

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<sup>16</sup> This description of goals include the goals suggested by (Goodwin 2001), (Goodwin 2002), (Brechin 2002).

user, lifestyle and leisure activities, job activities and roles, and finally computer skills and attitudes to technology. These data should be presented in a “foundation document” that links field data to the user descriptions.

As mentioned before some of the criticism of the Goal-directed method focused on lack of field data. In “the Inmates are Running the Asylum” (Cooper 1999) field data is not mentioned, but Goodwin (Goodwin 2002) describes how the description of the



**III. 5: Illustration from Goodwin 2002.**

© Cooper Software, Inc.

individual Persona is founded on ethnographic data. From the data a matrix of the users' patterns of actions is formed. The division focus on what the users do, what frustrates them, and what gives them satisfaction. The knowledge is used to insert each user into a matrix with variables which patterns provide the decision about primary and secondary users<sup>17</sup>.

The basis for creating User Archetypes is data from marketing and data with a focus on user knowledge and user needs. The

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<sup>17</sup> The number of personas differentiates. Cooper finds that you can only target one and he operates with primary and secondary personas (Cooper 1999). Others advocate for negative personas that the site is not aimed at (Head 2003).

process of creating user archetypes is a move from field data to archetype description. (Mikkelson and Lee 2000). Grudin and Pruitt agree with Mikkelson and Lee in their description on what to focus on in the description of the persona, but they do not describe the process of going from field data to personas.

### 7.1.7 THE ROLE OF THE READER

The persona has two functions. During creation it forces the writer(s) to consider the relationship between field data and description and it forces the writer to make decisions about who the persona is, and how many should be described. The second function is that the persona is a means to communicate the user to involved partners and groups in the design process. To function as a tool to communicate details of the user and to use the descriptions in the design process, the description must be so vivid that the reader is interested and engaged in the user. The description must be so specific that the reader is able to use his or her own knowledge to image the user and is able to remember the user when the description is put aside.

Descriptions of personas are written in more ways from very brief descriptions to very long description that includes more aspects of the personas life. The persona has always got a name and an age and many descriptions include a photo. Lists seem to be a very popular format to use in the descriptions of the user (Mikkelson and Lee 2000) (Jordan 2000). Unfortunately the breakdown of each persona into lists and quotes do not support the ability that stories has for long-term storing in the reader's memory (Bruner 1990). The photo connected to each persona aids

the memory, but the format of lists makes it difficult to get an understanding of and remember the information connected to each persona.

Examples of personas:

Angela's, a 31 year old PR consultant who is based in Los Angeles, but who has customers throughout the entire West Coast. Angela often has to travel during the week.

Angela's Goals:

Always be on time for client meeting

Travel without hassle

Don't feel stupid

Ill. 6: From [www.cooper.com](http://www.cooper.com) 2000 ©  
Cooper Software, Inc.



Ill. 7: From Pruitt and Grudin 2003. ©  
Microsoft

### 7.1.8 OBSTACLES

I have worked with personas before, both professionally and in different workshops, but I feel that I need to dig deeper into the subject, as I find it very hard to get people, who are used to working with figures and numbers, to 'go along' with that kind of thinking.

**III. 8: Application for personas workshop.**

**Henriette S. Kristensen 7-8 2003**

One of the main obstacles in introducing personas in the design process is that the method is unfamiliar to the organisation, as this quote shows. The quote refers to differences in ways of thinking. Other obstacles come from the organisation as the method is not yet part of any recognised design method and the step from

personas to code is not described. This makes it difficult to get the necessary support from the organisation (Grudin and Pruitt 2002)

Yet another obstacle is concerned with the method itself, where usability specialists and designers lack a functional description of the method. In the literature it is quite difficult to get a full overview of the method. Questions such as how many personas should be developed, how to develop personas from field data and what a description shall include, are not answered.

It's Saturday morning and George finally has a few hours to do some of the things that he knows is waiting for him. Ideally, of course, he'd be down on the golf course, or in the clubhouse, with the lucky ones. But things need his attention. He has a choice of chores: he could always wash the cars (they need it every time it rains!), or tidy the garage, or sort out the barbecue for next weekend (but that can wait) or he could mow the lawn.

The line between persona and scenario is not clear, as this illustration shows. And it is not clear how a written description can engage the reader.

It is these problem areas I will address with the engaging persona and hopefully it will provide a functional description of the method.

**Ill. 9: Ann Light, persona for lawn mover, Personas Workshop 9-10  
Oct. 2003**

### 7.1.9 CRITIQUE

The different articles and the books have the problem in common that it is very difficult to find the theoretical arguments for the different takes on the described methods. The authors share a lack of foundation in their arguments of why they emphasise specific areas in the descriptions. The exception is Jordan who takes a foundation in Lionel Tigers four divisions of pleasure (Jordan 2002) p. 8, but he does not explain where these divisions originate from and why they are useful. Personas are developed from practice and it is difficult to criticise good experience but it

is also difficult to understand why the experience is good if there is no connection to any theory or description of context.

An example is the information needed in creating User Archetypes that includes the users fears and aspirations. This is different from the areas Cooper includes but it is difficult to understand why these areas are important. Unfortunately the focus on fear and aspiration is not grounded in theory or practice.

The process of moving from field data to personas is very difficult and seems to involve more intuition than is described in the articles. Even though both Goodwin and Mikkelsen & Lee describe the method they use to segment users, it does not come out as directly approachable or transparent. In the illustration from Goodwin (p. 134) it is difficult to see where the variables arrive from, how many you need, and how the dichotomies are grounded e.g. the dichotomy of necessity and entertainment.

As I stated in the introduction when I read the different descriptions I started to wonder how a reader could engage in the written personas.

It is difficult to understand how the description of the user based on just a list can create a holistic picture of the user and how it can engage the designer who reads the persona description.

Some report that their user descriptions lacked creditability and depth (Blomquist and Mattias 2002) and that it can be difficult to describe in an engaging way (Mäkelä and Mattelmäki 2002).



None of the authors consider the ability to engage through writing and this is not an ability everybody possesses.

In the following I will briefly analyse two examples of user descriptions from the literature and show some of the problems.

The description of Angela and the Wayfinder incorporates both a persona and a scenario description:

"Angela's, a 31 year old PR consultant who is based in Los Angeles, but who has customers throughout the entire West Coast. Angela often has to travel during the week.

Angela's Goals:

Always be on time for client meeting

Travel without hassle

Don't feel stupid

Angela's Scenario: Angela is on her way to Seattle and has a 30 minute layover in an unfamiliar airport. She really wants to grab a cup of coffee before she heads to her connecting flight.

After Angela disembarks, the airport map and service details are downloaded to her PDA via a wireless local network, using Bluetooth. Angela quickly finds her favorite coffee shop in the list, and sees it is only a few minutes walk away.

The Wayfinder shows Angela exactly how to find the coffee shop, with handy landmarks indicated on her map.

Angela follows the directions the Wayfinder gives her, and successfully finds the coffee shop. Soon she's enjoying a double-tall, fat-free Mocha Latte Grande, with sprinkles.

Now Angela needs to find her way to the gate. She uses the Wayfinder to look up the gate for her connecting flight, and then follows the directions it gives her.

Angela arrives at her gate with plenty of time to spare.”

III. 10: From [www.cooper.com](http://www.cooper.com) 2000. © Cooper Software, Inc.

As a person Angela is described from her personal and practical goals but a closer look at Angela reveals that she is described solely from her working life and has goals that relate only to her work. Information that can characterise her beyond that scope is not offered. Angela is a relatively anonymous person and it is difficult in the scenario to understand why she acts as she does. The description provides Angela with no personality and she could be anyone, or rather no one. The thin character description leaves out Angela’s ability to read a map and her attitude towards technology. How she will manage to be guided by a palm pilot in a chaotic context with a bag in her other hand? What keeps her on the right track? The information we get seems insufficient to trust that the scenario really solves her problems. It lacks coherence and Angela is, what I will later term as, a “flat character”.

The last example is from John Carroll (Carroll 2000) who works with scenarios but does not describe the process of creating fictitious users. This is an example of how an unplanned process of developing the user description creates a user that is more a function of and an excuse for the system design than a vivid user description.

“Harry is interested in bridge failures; as a child, he saw a small bridge collapse when its footings were undermined after a heavy rainfall. He opens the case study of the Tacoma Narrows Bridge and requests to see the film of its collapse. He is stunned to see the bridge first sway, then ripple, and ultimately lurch apart. He quickly

replays the film, and then opens the associated course module on harmonic motion. He browses the material (without doing the exercises), saves the film clip in his workbook with a speech annotation, and then enters a natural language query to find pointers to other physical manifestations of harmonic motion. He moves on to a case study involving flutes and piccolos.”

### III. 11: (Carroll 1999) p. 3

This scenario for an educational project describes Harry and the tasks he perform. It gives a brief introduction to Harry as a person who is interested in bridge failures because he saw a bridge collapse when he was a child. This explains why Harry chooses to open a case study of a bridge and it explains why he chooses to open up the case study of flutes and piccolos as both deals with vibrations.

There is no description of where the action takes place, where Harry is situated, what motivates Harry’s choices and who Harry is as a person. Harry is a person I feel difficult to engage with. From my point of view he seems a little weird, as though he gets a lot of pleasure out of watching bridges collapse.

In the example with Harry there is a motivation for his first action – opening a case study of the Tacoma Bridge and seeing a video of the bridge collapse. His next action - he browses the material – has no motivation. It seems plausible that he could have done whatever else. His third action is to save the video clip. Again, there is no motivation why he acts as he does. A thorough description of Harry as a person could have helped the design team to understand the motivation behind Harry’s actions this way create design innovation.

It is difficult to understand the distinction between being a persona and a person. Cooper offers explanations from what constitutes humans, even though his view of what constitutes humans is limited to goals, fear of feeling stupid, and having fun (Cooper 1999) p. 150 . A holistic description of a fictitious human being, that enables a reader to engage and which sustains identification with the user throughout the design phase, must look at more than goals. A persona is not a human being in a psychological or bodily sense; a persona is a fictitious character in a story - a character with the ability to engage. But how can a description engage? This I will try to look into in the next part of this chapter.

## 7.2 FROM PERSONAS TO ENGAGING PERSONAS

I will in the following distinguish between the user who is the person that is observed in the field study and the character that is a fictitious person in a story

“Personas are a method for enhancing engagement *and* reality”(Grudin and Pruitt 2002) p. 146. To use personas, as a method for systems design, is to get the designer to understand the system from the user’s point of view. The designer must, so to speak, enter the life of the user. He must understand the user’s needs and how the needs create demands of the system. In order to do so the designer must understand the user’s motivation for action.

INT. - THELMA'S KITCHEN - MORNING

THELMA is a housewife. It's morning and she is slamming coffee cups from the breakfast table into the kitchen sink, which is full of dirty breakfast dishes and some stuff left from last night's dinner which had to "soak".

She is still in her nightgown. The TV is ON in the b.g. From the kitchen, we can see an incomplete wallpapering project going on in the dining room, an obvious "do-it-yourself" attempt by Thelma.

**Ill. 12: Beginning of the film  
script: *Thelma and Louise*.  
(Khoury 1990)**

This example shows how it is possible to give the reader information about character traits, social and marital status, and approximate age without ever specifically mentioning any of it. As the description progresses it becomes very easy for the reader to engage in the character and put the character in other situations.

The framework I develop emanates from a theoretical understanding of the term "engaging character" as well as an understanding of character building and writing. I will

look at how we in the reading process engage in a character, when we as readers comprehend a written description of a human as complete, and what elements a character description shall include.

The function of the persona is to be an agent in a scenario. It is the scenario that provides the designers with ideas of functionality, but before the functionality can be explored and the actions of the persona can be described, the persona must be developed and described. I will look at the two methods separately even though they are interdependent.

### 7.2.1 INSPIRATION FROM FILM TECHNIQUES

The framework for engaging personas and scenarios is inspired by film scriptwriting. The film script and the description of an engaging persona and the scenario has many commonalities:

- They are predictions of something that is to be created in a media different from the paper they are presented on
- They are told as stories
- They are created around a main character and the character's actions
- The main character has a goal
- The reader must believe that the character's actions stems from the character trait, background, situation, and goal
- Actions are described in the third person

The development and description of the persona has conditions in common with the character as it is described and presented in an ordinary film-script. The film-script differs from the literary story first and foremost because the film-script is written in a universal format where descriptions are followed by dialogue in a strict format for writing. This eases the transformation from text to picture (Frensham 1996).

The scenario in systems development has no unique format and the recommendations for presentation differ. Some suggest to use first person narration to describe the persona as well as a language that the user uses (Mikkelson and Lee 2000) others use a story format from theories of schemata (Potts, 1995).

There are differences in how the content is treated in film-scripts and in literary stories. In a film script it is not possible to have long descriptive parts, there is almost always a plot, inner monologues are difficult to handle, and shift in a narrator angle never occurs. Such restrictions are not present in the literary story.

The character perspective has commonalities as the narrator becomes “a figural narrative situation” (Nünning 2001) p.220, where the narrator is withdrawn and hidden in an almost invisible position. The invisible narrator is seen in the script example in the previous chapter where the description of Thelma is not seen from any specific perspective, but a neutral author comments the scene by describing details that says something about Thelma.

The dramaturgy of both the film scripts and scenarios has a narrative form with a story developing towards a goal and a solution (Dancyger and Rush 1995).

The aim of the film script is to get the reader to create an inner picture of such value that there is a similarity between the script and the final film. The aim of the scenario is to express and explore design ideas and give the reader a sense of the system described, the actions the user might take and how the user understands and makes sense of the system. The expectations to the description are a similarity between the scenario and the final system.

The persona in the scenario has a function similar to the function of the character in the film script; it is through the description of the character we understand the character's actions and motivation for action and it is the character's actions that move the story forward.

As mentioned the film script has established rules to support the transformation from text to screen. An expression like "she is happy" cannot be written as the happiness must be described via the visual expression "she smiles". This way the reader of the script understands the transformation of the visual data to the screen. But the writer must know more than is expressed in the written information. In this example, that the smile is the expression for happiness and not irony (Horton 1999) p. 40. In a similar fashion the reader of the scenario is forced to imagine, from the description of the persona's actions and the system's reactions, who the persona is as a person and what motivations lies behind the persona's actions. This forces the writer of the scenario to have a broader knowledge of the design field than that which is expressed in the written scenario.

This definition of a screenplay relates both to the experience of the viewer and to the narration.

*"The story of a character who is emotionally engaging and who, at the beginning of the screenplay, is confronted with a problem which creates an inescapable need to reach a specific goal. The attempt to do so inevitably generates*



*almost overwhelming obstacles which are finally overcome by the transformation and growth of the character."*

(Frensham 1996) p. 5 (my emphasis)

The emphasised terms that relate to the narration are: "character", "problem", "inescapable need", "specific goal", "inevitably", "almost overwhelming obstacles", "transformation and growth". While "emotionally engaging" refers to the experience of the viewer. The term beginning incorporates the character description and the problem as well as the need to reach a goal. The middle incorporates obstacles, while the end incorporates character change and development thus describing the narrative development.

It is my aim to develop a similar definition that can include both the engaging persona and the scenario as a narrative story.

### 7.2.2 LEVELS OF ENGAGEMENT

To create an engaging persona is to provide the reader with a vivid description of a user, so vivid that the reader can identify with the user throughout the design process.

The framework or guideline I propose for creating engaging personas originates from two literary sources: theoretical/analytic sources and creative/tangible sources. In the first part I will look at the term "engaging". What is it to engage a reader? This part focuses on the reception of the text, how the reader can engage in the character and what is craved of the description of the character in order to get the reader to engage.

In the second part I will look at the production of the text. I will introduce the term “the rounded character”, look at how a rounded character is produced, and what traits a rounded character should include.

I use “Engaging Characters” (Smith 1995) to investigate the term engagement. Smith studies the spectator’s emotional response to the character in a film. In using her levels of engagement in fictitious characters and in defining the levels of engagement in a fictitious character I take the liberty to transform the viewer to a reader during the reading. Smith argues: “our ‘entry into’ narrative structures is mediated by character” (ibid p. 18). This is not only valid for films but for all narratives.

The term “identification” covers several processes and Smith proposes to replace the term with a system of engagement that posits three basic levels of engagement: recognition, alignment and allegiance (ibid p.5). The levels of engagement are provided on a basis of evaluation of the traits the character possesses.

- Recognition is the information that enables the reader to construct the character as an individual and human agent.
- Alignment is the process whereby the reader is placed in relation to the character’s actions, knowledge and emotions.
- Allegiance is not only the moral evaluation the reader produces of the character, but also the moral evaluation the text allows the reader to produce. Allegiance depends

on access to the characters state of mind and the reader's ability to understand the context wherein the action takes place.

The levels of engagement are sympathetic rather than empathic. Sympathy is first and foremost the ability to recognise - a recognition that originates from both the presented material and knowledge that goes beyond this. The more material presented the less the readers have to draw on their own experiences.

The concepts accounting for empathic phenomena are affective mimicry and emotional simulation. Through the emotional simulation the reader understands the character's emotions by trying out different emotions that fit the situation. Affective imitation is an involuntary response to a situation that imitates the character's reaction. It is not necessary to share another person's values, beliefs, and goals in order to feel empathy. Both empathy and sympathy are necessary for the reader to engage. They can disturb each other or they can enhance the understanding of the character's situation in the story.

What is not presented to the reader in the description of the persona the reader must create him-self from inferences and person schemata. These elements are negotiated and added to the story, e.g. in the emotional simulation an understanding of the user's emotions in a given situation is negotiated and added to the story. When I understand the character Harry (see p. 135) as a person who lurks around bridges in the hope of seeing them

collapse it is not part of the story but something I as a reader add in order to understand him.

To enable engagement in the character, the description of emotions as well as alignment and allegiance is craved from the material. From the reader's point of view the description of the persona has certain demands, but as the engaging persona is to be part of a scenario, the narration creates demands of the character description too.

In order for the designer as reader to engage in the persona, the text must give access to:

- Information that enables persona construction
- Information about the emotional status of the persona
- Information about context that enables an understanding of the character

The reader needs access to certain information in order to understand, evaluate and engage in the character, but there are plenty of stories where the reader does not have access to the above-mentioned information. In this type of story it is the actions that bring the stories forward and the characters are seen as props for the actions. This is recognisable in the plot-driven scenario as well (Nielsen 2002). In this type of scenario it is the system that brings the story forward. To develop systems that originate in the user's needs begins with scenarios where it is the user and not the system that moves the story forward.

### 7.2.3 FLAT CHARACTER OR ROUNDED CHARACTER

Not all stories crave an engagement in the character instead it is suspense and action that occupies the reader. To the reader or viewer of fiction the two kinds of stories are well known: the plot-driven and the character-driven story. The plot-driven story is seen in most action films where the hero has very few character-traits and the story moves from one action to the next. The character is defined as a flat character. In the character-driven story the character is described with several character traits and it is the development of the character that moves the story forward. The character is defined as a rounded character.

In the example with Angela and the way-finder (p.129) it is both a persona and a scenario that is described. Angela is described in a limited way that only deals with her performance as a worker - from the viewpoint of her personal and practical goals. There is no consideration for characterisations that go beyond her working life. It is difficult to pinpoint a single character trait of Angela except that she does not want to feel stupid, but this trait is not used in the scenario. The description leaves little room for Angela to develop and little room for the designer to imagine what can go wrong in her finding the coffee shop. The rather limited character description leaves out Angela's ability to read a map, her attitude towards technology. The context is described very scarcely and has no influence on her actions. I, as reader, use my knowledge of airports and wonder how she will manage to be guided by a palm pilot in a chaotic context with a bag in her other hand. The information seems insufficient to trust that the scenario

solves Angela's problems. Angela is a flat character and the scenario lacks coherence.

The difference between the characters in the character-driven and the plot-driven story is the number of character-traits. In the plot-driven – or a-psychological – story the character has a limited number of character traits and the traits function as catalyst for actions, as functions of the plot. When a character trait is mentioned the character acts immediately on it (Todorov in (Chatman 1990)). This makes the character highly predictable and creates a flat character in a plot-driven story (Forester in (Chatman 1990)).

This can be seen in the scenario for Harry here his interest in bridge collapsing is used to explain his motivation for the next action.

In the character driven – or psychological – story the character has multiple character traits and a number of voices that interact with and against each other. It is the character that creates the story development. The character's action is unpredictable and the character is characterised as a rounded character. The character can be defined as: "a paradigm of traits; "trait" in the sense of relatively stable or abiding personal quality" (Chatman 1990) p. 126.

Kira is 18 years, a dreamer, intelligent and of wide reading. She tends to daydream and drift away. She does a lot of fun stuff with her friends but her great passion is chocolate cakes. She bakes and eats a lot but it is not visible on her long and lean body.

Kira's scenario:  
(...) She turns the pc on and logs in on today's tasks. The first screen shows how many CDs she must fetch - six with Pauline, eight with Audio-Caviar, twelve with Jeanette and one with an artist she has never heard of before - it is probably some Macedonian artist. She prints the list and brings it with her to the storage room when she gets the CDs. It takes a while for her to find the new artist and she has to look at the name a number of times as it is a bit strange and keeps forgetting what it is.

**Ill. 13: Persona and scenario for e-business (Nielsen, Olsen et al. 2002)**

In this example Kira's character traits are being both a day-dreamer and very controlled, implied in the mentioning of her being able to bake cakes. Her daydreaming explains her inability to remember and mis-lay things. The description of the system had to compensate for her daydreaming.

The rounded character observes the world governed by the following perspectives (Nünning 2001):

- Knowledge and beliefs
- Intentions
- Psychological traits
- Attitudes
- Ideological attitude
- Internalised values and norms
- Physiognomy (Egri 1960)

These perspectives can be summed into psychology, sociology and physiognomy (Egri 1960) and used as a guideline when describing the character.



### 7.2.3.1 CONSTRUCTION OF THE ROUNDED CHARACTER

The previous chapters have not differentiated between analysis and creation of fictive stories. In this chapter I will focus on the creation of character-driven stories.

A description of a human being<sup>18</sup> must include physiognomic dimensions as well as sociological and psychological dimensions. Each of these has an impact on the character's behaviours and actions. The descriptions of physiognomy, sociology and psychology create the understanding of the motivation. The dimensions encompass both past and present, both the self and the relations to others.

“If we understand that these three dimensions can provide the reason for every phase of human conduct, it will be easy for us to write about any character and trace his motivation to its source.”

(Egri 1960) p. 35

Horton uses the concept of the carnival, as presented by Bakhtin, to describe the rounded character (Horton 1999) (p. 27). The character has a cacophony of voices, created with knowledge of the character's notion of consciousness and self-consciousness. The carnivalesque understanding of the rounded character has several implications for the creation of the character:

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<sup>18</sup> “The Art of Dramatic Writing” (Egri 1960) is still one of the most cited writings of film scriptwriting. Egri uses dialectics to comprehend the writing and reading process.

- The character as a state of becoming – the character develops in the story
- The cacophonous character (several voices interacting at different times.) – character has two or more character traits that interact
- The character as social discourse belonging to a culture and interacting with the culture and its many voices – the character belongs to a specific time and specific culture.

There is a distinction between the individual character traits and the unique character traits. The individual character traits belong to the individual as member of a culture in a specific time, with a common language, and set of rules. Both society and age of time influence the created character: “Knowing the place and time makes knowing the character much easier.” (Horton 1999) p. 38.

The character possesses both personal (inner) and inter-personal (social, public, and professional) elements. The unique character traits create the difference between the individuals, as no two people are identical. It is the diversity in experiences that creates the character. All characters have inner needs and goals as well as interpersonal wishes and professional ambitions. These help characterise them and creates the character’s own demands, restrictions and privileges.

The term cacophony is expressed in a guideline for writers as 1+1+1 (Rukov 2003). 1+1 covers two oppositional character traits while the last 1 is a peculiarity. This practical and creative way of expressing the cacophony enables a focus on a dynamic character

with potential for development. With the oppositional traits the development is from the beginning embedded in the character.

The rounded character description is characterised by.

- Several character traits
- Psychology, physiognomy and a social background
- Inner needs and goals, interpersonal wishes, professional ambitions
- Context

The work with rounded and engaging characters puts demands on the data we get from the field studies. Observations of work processes and segmentation of users as skilled versus non-skilled users does not provide the writer with the necessary information to describe the character traits and psychology of the persona.

### 7.2.4 FIELD DATA AND THE ENGAGING PERSONA

When we encounter a stranger we have a tendency to see the person as a stereotype. We do not see the person as possessing a unique constellation of characteristics, but add the person to a previously formed category (Macrae and Bodehausen 2001). The stereotype is built on knowledge of previous meetings with others, and ordered into categories that form the basis for the stereotype. One definition of stereotypes is that they are “socially constructed representations of categories of people”(Hinton 2000).

To describe the user as an engaging persona brings a focus on the process of engaging the user in the design process. It enables the

design team to engage in the user and to focus the design on the user. But the descriptions can conflict with the preconceived perceptions the designers have. As it was described earlier the participants in the development of LinkMedica all had the perception of the user but it did not include the data of relation to illness described in the user inquiries.

The stereotypes function as mental pictures for the developers but being stereotypes they prevent an allegiance and alignment with the characters. The descriptions thereby influence the value of the scenarios as means to investigate and describe a possible future solution.

“ Stereotypes differ from clichés in that the former reduce an entire class (e.g. fat people, depressed women, or post office workers), and let the reader assume the rest. In contrast, a cliché is a hackneyed phrase. A stereotype is not identical to the real thing. Stereotypes seem to work best when characters are not created to be deep, but only to be a mental picture”. (Edelstein 1999) p. 13

To convince the designers, to move them away from the stereotype, and to get them to engage in the persona the descriptions must be based on knowledge of actual users, on how they perceive the world, how they act, and where they act.

Usually the field data for personas has focussed on behaviours and demographics (Goodwin 2002) or goals and tasks in work related environments (Carroll 2000). To collect field data for the

engaging personas demands an awareness of other kinds of information such as; background, psychology, emotionally status, and character traits.

The distinction between the rounded character and the flat character as well as the characterisation of the engaging persona can be a guideline for the demands to the field data. As the rounded character incorporates personality, emotions, and actions these elements should stem from the field data. And during research information about the user's surroundings, character traits, emotional status, and background, as well as common demographics, actions, goals, and tasks should be observed.

Ethnographic material is, within the area of HCI, collected, interpreted, and communicated but the act of communicating the data to a design team is often overlooked. The foundation document (Pruitt and Grudin 2003) is an example of a recommendation for what should be included in a material that can support the personas, but the choice of material does not reflect the process of perceiving the material.

The creative process of writing engaging personas is grounded both in the writer's previous experiences and in the field data. To introduce field data to designers is an act of communication that involves both a selection of the data to present and the form in which it is to be presented. During the presentation the presenter must be aware of how the data is received and interpreted. With an awareness of the tendency we as human beings have to

categorise persons and by adding information that works against these - information that aids the cacophonous character traits - it might prevent the designers from creating stereotypes.

The tendency to create stereotypes is hard to fight. For the LinkMedica project the descriptions of the different users was aided by the designers' previous knowledge of users and they felt that they knew the four patient user categories. As it shall be shown in the next chapter it did not prevent them from making stereotypes.

### **7.3 SUMMARY**

The concept of personas is derived from practice and has been developed since the term was first introduced. With the engaging persona I offer a development of the concept that takes a point of departure in both theory and practice, but theory and practice within the area of film scriptwriting.

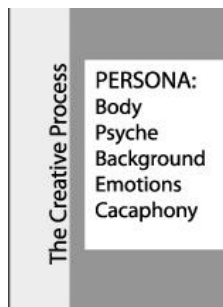
Film scriptwriting has similarities with personas and scenarios and can offer a theoretical as well as a practical approach to the process of creating personas. With the term of engagement I consider the process of reading and perceiving the persona. The rounded character offers an understanding of the character in connection with the story. Together the understanding of when a character is engaging and the rounded character creates five areas to be considered in the development of the persona.

In contrast to Harry (see p. 135) the engaging persona is a static construction with an embedded possibility for change and development when placed in a scenario. The engaging persona

has needs that originate from both the individual characteristics and from the design area. Contrary to the persona, the engaging persona has no goal as such but the goals arise with the needs and from the situations and do not appear until in the context of the scenario.

The field data creates a foundation for knowledge that is used in the development of the engaging persona. To the designer the engaging persona carries information that enables the designer both as writer and as reader to engage in the user and, from the story-structure, to explore the design area.

There does not exist a one to one relation between data and persona but as the persona is fictitious and based on many users, there will be parts that are fictitious while other parts are closely related to the data. But, as it is with film scriptwriting, there is a relationship between reality and fiction, for the engaging persona



**Model 0: First part of the model for engaging personas and narrative scenarios**

this relationship is closer than it is in fiction. The five areas of the personas will influence the data looked for in user inquiries, as it will the interpretation of the data.

It is my aim to develop a model for the engaging persona and scenario and as it can be seen in this initial part of the model, the engaging persona has five characteristics:

- The engaging persona is described with a bodily expression and a posture, a gender, and an age.

- The engaging persona has a psyche described as the present state of mind, persistent self-perception, character traits, temper, abilities, and attitudes.
- The engaging persona has a background as well as cultural and social relations. Described as present knowledge, job and family relations, and persistent beliefs, education, and internalised values, and norms.
- The engaging persona has present emotions, intentions and attitudes including ambitions and frustrations, wishes and dreams.
- The engaging persona has character traits in opposition as well as peculiarities.

In the next chapter, I will look at how the model for the engaging persona works in practice and how personas were developed in a concrete design process.



# 8. WORKSHOP ON ENGAGING PERSONAS

## 8.1 INTRODUCTION

Friday the 6<sup>th</sup> of December 2002 the first of two workshops took place at the Danish AstraZeneca headquarters. It lasted from nine am in the morning to three pm. It was the date for the annual Christmas lunch and this created a rather animated atmosphere especially felt during breaks.

The initial plan was to have one workshop that incorporated both creation of engaging personas and scenarios. During the workshop it became clear that it was just not possible in one day to create both engaging personas and scenarios. It was decided to have a second workshop soon after the first. This did not go as planned as there came to be three month gap between the workshops.

Working with a company creates a necessity to accept changes: people changes positions, departments change names, and delivers get sacked. It was my aim to gather as many of the stakeholders in the project as possible. Since the launch of LinkMedica the Swedish design company had been forced to downplay their role and despite their wish to participate it no longer seemed appropriate. I also wanted to invite the remaining partner from the Swedish head quarters but unfortunately she was not able to participate.

In this chapter I will present the ideas behind the persona workshop, the participants, and the outcome in relation to the model for engaging personas.

## 8.2 PARTICIPANTS

When a budget is accepted it is the e-business department that influence the concrete development of LinkMedica and as the e-business department employs a small number of people it was possible for everybody to participate in the workshops.



Ill. 14: Power point of the agenda

The participants were:

- The Webmaster of LinkMedica
- Medical advisor (former Product manager)
- The E-business manager

- The Marketing responsible
- A trainee
- I had asked a PhD student from Department of Organization and Industrial Sociology, CBS, to be responsible for the video recorder. She looks at changes in the relations between health care providers, patients and the medical industry and uses AstraZeneca as a case study. As the number was uneven I asked her to participate in the group work.
- Myself as action researcher and organiser of the workshop

### **8.3 WORKSHOP AIM**

In view of the initial e-mail I had received a year previous it was still the wish from the e-business department that the workshop should help focus on whom LinkMedica should target and to get an understanding of why the flagship of LinkMedica – the Asthma Control Centre - is not widely used. It was the hope that the workshop could help foresee and overcome obstacles for the use and thereby detect improvements to incorporate in later versions.

The overall aim for the workshops was to create design solutions that could get more medical practitioners and asthmatic patients to use the Asthma Control Centre.

Despite the apparent agreement about the problem there seemed to be no agreement about how to solve the problem. I offered the methods of engaging personas and narrative scenarios with the hope that they could solve the problems.

## 8.4 THE PROCESS



Ill. 15: The participants' positions in the room

The e-business department face, both as individuals and as a group, the problem that the Asthma Control Centre is not used. As it was found in the organisational interviews there is no common objectives and no common understanding of the problems. There is no common agreement of when an argument is valid and each looks at the problem with a point of view from their background: the MD views the problem from a medical point of view and creates solutions from within his or her theoretical framework: it is the algorithms that should be altered. For the interface designer it is the design that needs to be optimised. They observe and understand the problem from each their knowledge-in-practice (Schön 2001).

As a group they need both a common theoretical viewpoint and a common language to speak about the problems. If each had been on his own he could have created trials for definitions that could be placed on the situation, but as each participant has a language to understand the situation from his field of practice and exercises his own knowledge-in-practice this is not possible.

When the participants enter the group the individual understanding is undermined and a need for a common language to understand the problems is created, a common viewpoint, and it will become possible to place a common theory on the situation.

To take a user-centered viewpoint – engaging personas and narrative scenarios – is to create a common point of departure that might help create a common theoretical apparatus thus enabling a common understanding of the situation. As this particular theory and point of view will differ from each of the participant's individual theoretical background it can hopefully question the knowledge they possess as individuals and create a room for reflection-in-action that will get them to make experiments and get them to embrace the system of consequences that each decision of change will create.

The workshop consisted of six modes:

1. An oral presentation of the outcome of the four user-studies
2. A discussion of whom LinkMedica shall address
3. Writings of personas in groups of two
4. Discussion of the written personas
5. The rewritings of the personas that took place between the two workshops
6. Discussion of the situations the personas will act in, directed towards the second workshop

I will in this chapter not look at mode six as I view it as the starting point of the scenario workshop. It will be included in chapter 9.

I briefly presented the method but the designers did not get a thorough introduction to persona creation. They understood the idea and with an open-mind started to create personas.

## 8.5 PRESENTATION

The presentation consisted of the results from the four user-studies and a brief introduction to the methods for creating engaging personas and scenarios.

The presentation of the result focused on the three main categories: relatives, patients and medical doctors. In the category relatives the phrases of “emotional mother” and “controlling mother” were introduced. In the category patients the inside-out and outside-in perspective were introduced, as were the terms “the controller” and “the neglecter”. For the medical doctors the general use of the Internet and their view on LinkMedica was introduced.

The presentation ended with my suggestion for four engaging personas that I had derived from the user inquiries:

- A male medical practitioner age 50-59 who has no experience with the Asthma Control Centre but would like to use it
- A female asthmatic in acute need of knowledge. Age between 20-40. She is a “controller”

- A male asthmatic that uses the Asthma control centre. Age between 20-40. He is a “neglecter”
- A female relative to a child with asthma, she is in an acute need of information. Age 20-40.

The four personas covered the differences between users found in the four user inquiries.

The discussions during the presentation were mainly directed towards unclear information in the presentation. But as these discussions developed, ideas for improvement were tested and the participants kept having a reflective dialogue with the material (Schön 2001) as a way to make sense of the problem faced. They moved between trying to solve a problem and creating solutions for the problem. As new problems occurred, new solutions came up. They raised a frame experiment and were open to the answers they got from the situation – the situations back-talk (ibid p. 227). At this point in time the participants did not have an overall picture of the problems and solutions might solve one problem but would inevitably raise others. But it was necessary for them to move through this phase until they had the necessary shared theoretical framework that could help them embrace the systems of change.

- D: Well this is interesting, because I think that the strategy from the beginning when they did astmaallergi.net was the reverse. That they made this very exiting site, all the promotion went for the site and that we made a mini netdoctor. And then there was the diary, it was also exciting but...
- I: And now it is the other way round? I don't know why maybe because there is more money for AstraZeneca in this?
- E: It is something about positioning oneself somewhere where there isn't any others.
- N: Didn't we believe that we could get patients and medical practitioners to talk together?

In my perception of the engaging persona, design ideas should develop when the designers are able to engage in the persona and ideas should not emerge before the persona is developed to an extent where the designer is able to understand the motivation behind the persona's actions.

- E: It is quite interesting if the medical practitioner's they are the ones we more often will cooperate with, if they go directly to the registration page without having to cross the front page
- A: Or if the log-in box is on the front page
- J: Yeah if we consider the difficulties they have just finding the log-in box
- D: But the solution must be to provide they medical practitioners with a log-in when we enlist them
- J: There are many solutions
- I: Before we go further into the solutions ...

This excerpt shows how I close discussions and try to get the designers to listen instead of creating solutions.



## 8.6 WHOM TO TARGET

- D: You can say that the original idea when we migrated to this site a year ago these days it was that if you made a site aimed at medical practitioners and patients, then medical practitioners and patients would use it. There was never any strategy for which information, target group and segmentation. All those fancy words. There have never been thoughts about it. They thought if we make a site that technically is aimed at both medical practitioners and patients then they will use it.
- I: But the world just isn't like that.
- D: This is the way it was. It is a technical solution they forced through and then people would use it.

It seems evident that from the beginning both medical practitioners and patients were considered as part of the target group. Medical practitioners - because of the commercial interest - and patients - because without patients there would be no system. The discussions in the workshop of whom to target held two distinctively different arguments: arguments that originated in the four user studies and arguments that originated in commercial interests.

The suggestion of a male persona was not accepted and in a compressed form the arguments followed these steps of logic:

1. We need to consider medical practitioners
2. Medical practitioners are split into two groups: the ones who have tried and then given up and the ones who would like to try.

3. The latter is the most interesting group as they are the biggest group and it is difficult to convince somebody who gave up on the system.
4. The one who would like to try can either be a man or a woman. If we target the medical practitioner as women it will inevitably help them to realise that most users are women, as a female medical practitioner has a greater understanding of the potential user being female.

A: You could be cheeky and at the medical practitioner (points to the white board) write female because I would think that if we got the female medical practitioners onboard that would automatically lead to more female patients. I'm sure. I think that some of the medical practitioners prejudices that's because they are males themselves.

This argument seems to relate more to some sort of logic based on the participants' own presumptions rather than on the user studies.

The first patient to be considered was a female as the gender made it possible to act both as a patient and a relative. Choosing a woman for the patient category suddenly gave the whole site a turn towards a female perspective. As such it would leave out the male characteristics; like want for information that raise their interest and that more men than women use the Asthma Control Centre as it is today. The suggestion was to create a male persona too.

The discussion ended by focussing on three personas:

- A male who uses the Asthma Control Centre
- A female who uses the Asthma Control Centre. She is a relative too
- A female medical practitioner

The term controller and neglecter were added to the two patients. The male was a neglecter while the female was both a controller and an emotional mother.

It was not evident which parts of the system the focus should consider: should it consider the Asthma Control Centre as well as the Knowledge centre? During the discussions of target groups the Knowledge Centre became less focussed on.

A: I don't think you throw them out. If we make a good control centre and something solid .... Really we should take what we have got now and change the way it's worked with. I don't think we throw the others out, but as I see it, there is a need to upgrade; it is the accessibility for the ones who use the control centre, that's where we should get more in. The others they'll find it anyway. They'll find it via the search engines I'm not so worried about them.

I: You don't want to include them?

A: I won't use energy to design LinkMedica for their needs I think that will come automatically. It is not because I want to exclude them, I just think it will come automatically.

It is the Asthma Control Centre that has commercial value and it is with the Centre that AstraZeneca has a market lead. For the e-business group this seems not to have been made explicit before.

## 8.7 TO CREATE PERSONAS

The presentation of the user inquiries and whom to target lasted more than two hours and after a break the group was divided into three groups that each got a persona to focus on and describe.

In the following I will focus on the creative process of the two groups, video filmed, as the two groups used distinctively different techniques to create the personas.

The first group: A. - male medical advisor - and B. – the female PhD student from IOA- created Gitte, a female medical practitioner. They discussed freely and used information partly from the field studies and partly from their own experiences with health care professionals. This group took notes during discussions and wrote the description of the Gitte persona at the end of the session.

The second group: the male Webmaster, and the responsible for marketing (also male) – created Carsten. They used information from the field studies and from their own experiences with male friends whom they found had similar traits to the persona they were about to create. But they did also mirror themselves in the persona they created. They used the hand-outs of the presentation as a tool to keep on track both for how to create a persona and as a way to make sure that all information on the male patient was included. They wrote the description of Carsten during the discussions and formulated the description collaboratively.

### 8.7.1 TO NEGOTIATE

The two groups used quite different negotiation strategies. For the group who created Gitte the main information in the descriptions came from the participants' own life experiences even though two user studies had been presented to the participants. When the participants negotiated the characteristics of the persona Gitte: her age, job, life interests, and attitude towards technology there seemed to be a constant shift between:

- A logical negotiation
- A negotiation that stemmed from the participants' own background and experience with health care providers
- A negotiation that originated from the story structure.

The group who created Carsten used similar strategies but seemed to add a wider variety of negotiation strategies. During the process they used:

- A negotiation where the result was derived from using logic
- A negotiation that stemmed from the participants' own background and experience with friends similar to the persona they created
- A testing of the persona's attitude towards the system as it is today
- A negotiation that originates from the presentation both of field data and of the illustrations of personas.
- A negotiation that originated from the story structure.

## 8.7.2 A LOGICAL NEGOTIATION

For the first group the logical negotiation was mainly expressed in the negotiation of Gitte's age. As it takes quite some time to finish the medical studies and become a medical practitioner her age was agreed to be to approximately 40 years.

- B: (...)I think I would think of someone who is in her mid 30'es.  
They will be mid 30s or late 30s?
- A: They're at least late 30's before they get their own practice,  
before they get a place they are probably
- B: 38 years?
- A: 40 years, to be on the sure side then she's 40 years – ain't she?
- B: 40 years, they need a couple of kids too
- A: Then she'll have two kids
- B: I believe that too
- A: Two kids. She got them when she was in the start of the 30es because she waited until she finished her education, then they are ... Let's say they are eight and ten.

The second group used the logical negotiation too.

- D: What's his name?
- N: What's his name?
- D: I thought of Carsten
- N: Carsten?
- D: I find that I get a good deal of enquiries from users whose name is Carsten
- N: It's okay to call him Carsten
- D: Or Nikolaj
- N: No he's not from that generation with the names Nikolaj and Oliver
- D: No he's older, isn't he. He's a couple of years older

N: Yeah so he can be named Carsten

D: We'll call him Carsten!

The logical negotiation creates a frame where negotiations are settled quite rapidly, there is almost nothing to discuss, as it is outside circumstances that create the solution.

### 8.7.3 A NEGOTIATION FROM THE PARTICIPANTS' OWN BACKGROUND

Another negotiation takes in a repertoire from the participants' own life. The credibility of the persona is constantly held against the knowledge the participants have from either their own experiences or experiences that seem to connect to an overall feature they are in the process of creating.

In the negotiation of the work of Gitte's husband one of the participants referred to a medical practitioner she knows: "H: Maybe an engineer. I know somebody who is married to an engineer"

Or when they had to decide where Gitte lives, it was a recent experience with a place that framed a solution: "J: I can see her live in Hirtshals. I was there the day before yesterday."

The second group often referred to people they know or to an experience they had had with somebody with similar traits. They would create an attitude and then argue that it would be correct, as they know somebody with a similar attitude.

E: Our central line player he was never ill either. But he did take inhales every time he should play or at training (...) it was terrible I really think he needed medicine.

Or it could be the other way round, they compared with somebody they know and then a new trait or information was added to the list.

D: Oh f... it is like seeing Lars, him from Corbit, you know Thomas' colleague. An IT guy with spiky hair and all. He plays football you know.

N: I have one I went to college with. He plays basketball. I see him. He works selling software.

D: Okay

N: And he has a long mailing list.

D: Well he has one too, this guy.

The use of material from the participants' own background is both necessary and can provide a pitfall where the participants' own experiences overrule the field data (Nielsen 2003), but it seems necessary for the participants to use their own cultural experiences, as the field data will never provide enough material to cover an entire description of a persona.

#### 8.7.4 A STORY STRUCTURE NEGOTIATION

The story structure influenced a huge amount of the information. In the beginning of the session the group had negotiated Gitte to possess the character traits of wanting control and be very concerned for her job, this trait became significant for later information. A. suggested that Gitte should increase her surgery hours from 10 minutes to 15 minutes. B. did not buy the



argument until she could see it fitted the character traits they had given Gitte from the beginning such as wanting control.

- B: Then it is because it is a "cover your ass" thing. Because she's afraid she doesn't do things well enough, because she doubts her own competences. So she needs more time, she must have more tools, she must have more control because she fears to fail, as she doesn't possess the same security as the others do.

When the participants developed Gitte as a character they gave her a very active life. During the writing process, they realised that her husband could not be career-oriented, as this feature would make Gitte's life very difficult. They had to give him, what they considered, a less strenuous life as a grammar school teacher. The story structure they had decided on did not fit with earlier information and they had two choices, either to change the information they were about to create; give Gitte a less strenuous life or to change earlier information about her husband's job. As can be seen in this excerpt their decision was the latter.

- A: No, you must be insane. She must also get home and cook, get the kids, and take care of the husband, and he works overtime somewhere. I think her husband is a grammar school teacher.
- B: Yeah, she is conscious about her career, she doesn't participate in everything, and didn't use extra time on her studies. And he took the parental leave with the kids.
- A: Yeah, he could have a MA in something and then work at a college in the town where they live?
- B: Yeah one of the natural sciences

A: Do you think so?

B: Yeah, it's plausible.

The second group seemed to create small stories that were tested to fit into the larger picture of whom Carsten is as a person.

They had earlier on created Carsten as an impatient person therefore he needs to perform a type of sport that fits his temper.

N: I don't think he's the type that enters a fitness centre

D: No he's far too impatient.

Often they created little stories connected to behaviours earlier created that developed Carsten as a person. In this example they have earlier on established that Carsten does not want to admit his illness, this develops further when he goes trekking in Nepal.

D: And he travels a lot, you know unconventional places

N: Yeah, yeah

D: As a backpacker

N: Yeah he's not one for two weeks in Ibiza

D: Where has he been last?

N: Nepal

D: Trekking? How about his asthma then?

N: (Laughs) yeah I can just imagine it, he doesn't get medicine.

D: Let's give him an asthma attack in Nepal, but then he blamed the altitude

N: That explains something about him

D: (Writes): Then he had an asthma attack on the trip, but explained it with altitude sickness

N: (Laughs) yeah we have really got a lot of information about him, about Carsten (reaches for the photos) I want to see him now.

The story structure is strong and it influenced the persona construction as well as the ability to judge the construction as believable. It can with the use of ones own cultural experiences overrule field data.

### 8.7.5 A TESTING OF THE PERSONA'S ATTITUDE TOWARDS THE SYSTEM AS IT IS TODAY

Quite a substantial part of the creation was committed to testing Carsten's attitude towards the system as it is today. One by one the interaction areas was looked at and Carsten's attitude was developed against how he reacts to the system.

N: And how is his? How does he view the Knowledge Centre and the Forum and all that?

D: He reacts on the headlines but doesn't use it otherwise.

This becomes a very thorough and linear way to develop the engaging persona.

### 8.7.6 A NEGOTIATION THAT ORIGINATES FROM THE PRESENTATION

Mainly in the beginning it seemed necessary for this group to look at the printed handouts. It took the form of a checklist that guaranteed that all information about male patients was covered and that they had created the persona the right way.

N: Maybe he is responsible to market some sort of product or let me have a look (he looks in the handouts). For example Mette she works as a lawyer at a Ministry, so its okay to write that. So he works for .... What kind of firm does he work for? What products do they make?

### 8.7.7 THE PROCESS OF WRITING

The two different negotiation strategies seemed to be expressed directly in the written material because the second group wrote while talking they painted a richer picture of Carsten. A picture also influenced by the negotiation, as it seems as if the development of the character through little stories generates a richer picture. Compared to the first group, the second group got far more details into the written material from their discussions.

The story structure has a strong value in the negotiations. Together with negotiation that originates in the participants' own experiences field data can be overruled, forgotten and loose status in an argument.

### 8.7.8 THE PHOTOS

The photos made it clear how vivid inner pictures of the engaging personas the participants had created. Each group was handed a limited number of photos of men and women in different ages and with variations in looks. Because of the small sample of photos or because their inner pictures were so detailed none of the groups felt they found exactly the right picture.

The first group had a wide pick as most of the photos were of women at approximately the same age as the persona Gitte. They used a process of elimination for each photo and compared it to their inner picture.

A: She's too young. I imagined her as a fair-haired.

B: Ok. But is it one of those two.

Their discussion was fairly short and ended by a commonly adjustment of the photo to their inner picture.

A: I can easily imagine her. With the expensive jewellery and a bit smarter haircut, I'll grant you that. But with the right haircut and a bit of discrete jewellery, then ....

The group who created Carsten chose a picture by connecting the age and the traits they had developed for their persona against the photos. They had further limitations, as there were very few photos of men around the age group of Carsten. In the end they found someone who could be Carsten. As part of the decisional process they tested the photo against a story developed from ideas the setting in the photo gave them:

D: Yeah and he's on ski holidays as well. He's on holiday with that crowd. I bet he's one of those types who've been a ski guide.

N: Yeah

D: And then he ditched his education for two years

N: He has been a ski-bum in La Tigne

D: Then he realised there's no future in it, it wasn't something that will keep

N: No it didn't add to the bottom line.

They used a process of elimination too to find a matching photo.

The photo had both negative and positive implications. The sample was very small and none of the groups felt that they could find exactly the right match for the persona. To the positive implications the photos were of real people in real situations so

the participants seemed to be able to read the photos quite easily. They compared the photos with types they know, like "Søren Ryge" as a type who is fond of out door activity. The photos are more easily remembered than the written text and become carriers of information for the process of developing scenarios.

In the next part I will, for the two groups video filmed, look at the transition from discussion to text and see which information survived the transition and which did not and what implications this had for the understanding of the personas. I will also compare the written descriptions of Carsten, Helle and Gitte with the model for the engaging persona.

## 8.8 GITTE

Gitte age 40. General Practitioner.



Mother to two kids, age five and seven. Married to an academic. Lives in a larger provincial town.

Works in a shared practice. Only female, has recently acquired the practice - has been in the practice a year. Have many female patients and children's' families. Is well organised and thorough in her work. Has expanded her surgery hours from ten to 15 minutes of professional and practical reasons. Leaves everyday at four p.m. Draws on her own experiences in her work, but never brings the work to the home.

Attends a choir once a week and jogs in a sports club regularly. Is member of a book club. Has a conservative/minimalist attitude towards technology and professional tools in general.

Her attitude towards the medical industry is related to this: her looks exclusively for something professional with a practical outcome and prefers - "how to do" courses.

She is smart, lean and takes care to be dressed in well-designed clothes, exquisite jewellery, and newly cut hair.”

III. 13: B&A first draft

### 8.8.1 THE TRANSITION FROM DISCUSSION TO TEXT

In a comparison between the written description of Gitte and the discussion the finer details seem to get lost in the text. The written description is very raw almost like a bulleted list. Each topic discussed is represented but as this excerpt shows it is difficult to sense these nuances of Gitte in the written description.

A: It means she's more, I don't know if you could call it thorough, but there's more time for small talk in her surgery.

B: It that because she is? Is it a cover your ass thing? Because she's afraid she's not good enough, because she's insecure on her competences. She needs more time, she needs more tools, and she needs more control because she's afraid she'll step off, as she hasn't the same confidence as the others.

A: I don't see that as obvious.

During the discussions the group paints a picture of Gitte with a vulnerability that is not expressed in the text. The same goes for her attitude towards technology. In the text she has a conservative/minimalist attitude towards technology but in the discussions she is not conservative but likes well-tested applications that can provide something for her. This excerpt shows a much more positive attitude towards technology as expressed in the written text.

A: She is only interested in technology for what it can do for her. She's not interested in technology for its own sake. And fancy colours and that sort never impress her. To her the technology is a

B: Tool.

The listing of Gitte's traits provides the reader with a more negative picture of a controlling character than it seems to be intended from the writers' point of view.

Information that can enhance the picture seems to be missing. It is mainly information that can create a positive image that is lost in the transition from discussion to text.

Gitte ends up being controlling in many ways, in her life, her attitude towards her job and technology, and in her choice of clothes.

## 8.8.2 THE MODEL FOR ENGAGING PERSONAS

In a comparison between the five areas that the engaging persona should incorporate and the Gitte persona it becomes evident that the description of Gitte covers her body; she is described as lean, her psyche; she is described as controlled but it lacks the description of why she likes to control. The motivation for her eagerness to control was provided during the discussion, where she was described as being insecure because she is not as experienced as her colleagues.

In the description Gitte has no background. It is as if she exists only in the reading moment, and there is no way to understand where she came from.



It is difficult to understand Gitte in an emotional manner, she has no emotional state and it becomes difficult to understand how she will react emotionally in a given situation.

Again details from the discussion are lost in the text. The only situation that might be provided with an emotional understanding is her attitude towards technology where the discussion described her attitude towards fancy colours on web sites. In a situation where Gitte gets aesthetic value instead of practical value it is easy to predict her annoyance.

As mentioned earlier Gitte is described with only one character trait, as being someone who likes control. This makes her a flat character.

Gitte misses several features from the engaging persona. The fact was commented during the plenary discussions, where several participants felt that she lacked something.

During the discussion A. and B. explained their view on Gitte. To them she was a motherly type that controlled because she took care. They also came up with the idea that she had travelled a lot and been working for Medicines sans Frontiere. This provided Gitte with a background but her persona still lacks emotions and still has only one character trait.

The recommendations for the rewriting were to incorporate in the description that Gitte is highly active and that she has travelled a lot. She has a professional engagement in her job. She acts humane towards her patients. The photo of Gitte should be trimmed so it only showed her head and not the t-shirt.

### 8.8.3 SECOND DRAFT

In the second draft, Gitte is described with a lot more details. She is still described as a person who likes to get her act together, but a small flaw shines through: she tends to find women hysterical. This is explained with her being abroad and having experienced the terrible conditions of poor people. It opens up for a view into Gitte's emotional behaviour and softens the otherwise single tracked character trait. It still shines though that she from the beginning only had one character trait and the oppositional character trait lacks. She has now rounded edges but cannot be characterised as a rounded character as she lacks the oppositional character trait.

The way in which Gitte is portrayed can create problems for the later structure of the scenario. Gitte is described more as a stereotype than as a cacophonous character with her single character trait: she wants to be in control because she is afraid of not being adequate. To that is added a peculiarity - she sings in a choir, but Gitte lacks an oppositional character trait. This makes her a flat character with highly predictable actions. Not only is it difficult to engage in a flat character but the predictable behaviour can also make it difficult to question the information in the scenario.

## 8.9 CARSTEN

Male user of the asthma diary



Carsten is 29 years and Cand. Merc. He works with marketing and mobile phones sales. He likes to surf for information on the Internet and uses the Internet more than he reads books. Long mailing list, from work he sends funny mails to his friends with information and jokes. Has had asthma since childhood, but does not worry about his illness. He takes his medicine when in need but prefers to treat when he has asthma attacks.

Carsten uses the asthma control center because it is great fun and the system as such fascinates him. Enters his values every Monday in the dairy, saves his measures on his mobile phone and enters the every week. Uses the Knowledge center to a very small extent, read articles only if the headlines on the front page are underlined. Finds the texts on the results in the dairy too dramatic. Does at times worry about the replies but takes no heed of it.

Carsten plays football. His mates only know he has got asthma if they see him take the medicine. It is embarrassing and a sign of weakness to have asthma.

He is single and lives in a rented apartment in Copenhagen and bikes to work. He often has an overdraft on his credit card. Misses a girlfriend but appreciate his freedom as single too. He has an annoying little sister who looks up to him. Listens to and buys a lot of music. Has ADSL at home, uses a web bank and does not worry about security on the web. Is a party smoker, knows it is not healthy but does it anyway.

Is slim, does not work out as he lacks patience. In his spare time he is together with a gang of friends from his university days and the job. Is a backpacker and a ski-bum. Last went trekking in Nepal. Got an asthmatic attack, but blamed it on altitude sickness.

**III. 14: D&N first draft**

### 8.9.1 THE TRANSITION FROM DISCUSSION TO TEXT

Even though the description of Carsten is fairly short it provides a lot of details and the group seemed to include all elements from the discussions into the description. The strategy the group used, to write while talking, seemed to incorporate more from the discussion into the written text.

What was not included in the text is the link from the participants' use of friends and colleagues that fit the picture of Carsten. This leaves the reader with information that is hard to understand the relevance of, e.g. why does the reader have to know that Carsten has an annoying younger sister that looks up to him? It is not clear in the discussion and it is not clear in the text, but it seems likely that D. had an explicit person in mind when he mentioned it.

D: (...) I bet he has an annoying little sister, you know a younger one that looks up to him

N: He could have that.

### 8.9.2 THE MODEL FOR ENGAGING PERSONAS

In the comparison between the five areas that the engaging persona should incorporate and the Carsten persona it is found that the description covers Carsten's body; he is described as lean.

We get background information about his illness; he has had asthma since childhood, and his family relations; he has a younger sister that looks up to him. This can indicate a difference in years and no other siblings. He has had a girlfriend. But the description lacks information about the more cultural aspects of his background. His psyche is described through his relation to his illness; he hides his weakness, he smokes even though he knows he should not, he finds the messages in the diary overtly dramatic but they do at times bother him. The picture is painted of a character that might not be multidimensional but has dimensions. A person who tries to hide the truth not only from others but also from himself.

Carsten is described as having more than one character trait as being both superficial and faithful to his friends and he is impatient.

Some of the information however lacks connection to these traits: why does he prefer trekking to Ibiza? Why is he interested in music? Why does he use the Asthma Control Centre?

The plenary discussion focussed on Carsten's age. The participants found him too young almost teenage like in his behaviour, and they wanted him to act his age. B. had met someone like Carsten in her field studies and N., who is approximately the same age as Carsten, mirrored himself in the description.

In the discussion of Carsten the question about his use of the Asthma Control Centre was focussed on and it was decided that

the single motivation that could get Carsten to use the Asthma Control Centre was to incorporate a strong competitive trait in him. If the Asthma Control Centre could help him improve his performance in sports and while trekking, he would use it. This led to the question of whether or not it would be possible to reach someone like Carsten. It was not a unanimous decision that it would be possible to reach him, but more a silent agreement that he could be reached but not easily.

### 8.9.3 SECOND DRAFT

In the second draft the information was organised differently and this has an impact. Suddenly there is a connection between Carsten's overdraft and purchases. We get more information about his relation to his family and his relation to his illness is described in greater detail.

The competitive trait is added. It feels added, as it does not run through his attitude towards sports or travels. It is added to his running but not in his football. It still seems that he plays football because he enjoys the comradeship not because he enjoys the competition. The result is that it rings unlikely that someone like Carsten would ever use the Asthma Control Centre.

## 8.10 HELLE

Female patients with asthma

I do not have permission to publish the photo of Helle

Helle is 35 years. Married to Peter and has a little child one and a half years of age. The couple hope to have more children.

Helle has had asthma since she was a teenager. She has not had a need for control of her asthma, as her family are asthmatics too. Helle feels she knows the illness well. After she has her family she experienced respiratory problems she couldn't control, this made her feel a bigger need for control.

Helle lives in a terrace house with Peter. The living room has wall-to-wall carpeting and a laminated kitchen.

Helle is in regular employment at Tax and Customs. Her husband has a job with working hours that varies. Helle uses the Internet at work but also privately. (Slow connection at home).

Helle's work reflects her attitudes, as her attitudes are rather hard-nosed, this is reflected in her private life as well.

She is rather annoying and is secluded and has few friends.

She would like her husband to interfere more in family matters. She uses her husband's stories in her daily life as she finds his work better than her own.

Helle has dark hair, slightly overweight, and does follow the latest trends. Helle is romantic and has a temper, especially when it concerns the family.

III. 15: L&J first draft

### 8.10.1 THE MODEL FOR ENGAGING PERSONAS

Helle was the most difficult persona to get a grip on and she was rewritten several times. She was modelled over information

about the asthma patients who try to control their illness. This came to have an impact on how she was described.

As the group that created Helle was not video filmed I will, in the analysis, look only at the different drafts.

### 8.10.2 FIRST DRAFT

It was from the beginning possible to recognise Helle as a human being, she had a bodily expression; she is described as slightly overweight and the photo added expands the understanding of her.

In the description of Helle we get information about, her psyche; she is rather annoying and keeps to her-self, and her emotions; she has a temper. We do get slight information about her asthma; that she has had it since her teens, but nothing else. The overall impression of Helle is of a person that is not likeable; the information about her wall-to-wall carpeting in connection to her asthma gives a negative impression, as does the laminated kitchen. She is not following the latest trends neither in interior nor in clothes.

Looking at the way the different versions of personas gives the reader access to the actions, thoughts and feelings of Helle – alignment - it becomes clear that even though there is access to Helle’s feelings and emotions most information is negative and not explained from anything that can create an understanding of these emotions. The word “controller” can leave a negative impression and it seems like it has spurred the group to create a negative person.



The text attempts to guide our sympathies - allegiance - for Helle in a negative way Her work at Tax and Customs reflects her attitudes to life in general, but why and how is not described. The same accounts for the motivation behind this attitude.

It is the urge to “control” that becomes Helle’s character trait, but she also seems to want something more as she uses the husband’s stories in her daily life because she feels his work is more important than hers. It does not become clear why. The photo the group decided on shows a shy but friendly woman and softens Helle up. Unfortunately this photo cannot be published and later the group decided on a photo of a colleague. It shows a more outward woman and gives more positive aspects to Helle.

### 8.10.3 SECOND, THIRD AND FOURTH DRAFT

Helle came to be the key person the site should be aimed at. During plenary discussions it was decided to rewrite her and give her the features of being motherly and caring.

This was incorporated in the second draft but still did not help to create an overall positive impression of Helle.

In the third draft it became even worse, her features were explained but the explanation left an even worse impression of Helle.

“Helle is quite motherly and caring, but can at times be rather annoying. She is for instance nosy and importunate towards others, this is probably the reason why she has so few girlfriends.”

Her tendency to be annoying is because she is curious and importunate. Curious could be explained with lack of social skills but to add importunate to it creates a truly tactless person. “Her life is full of routines and rituals” could be explained in her fear of losing control because she has experienced a heavy asthma attack, but there is no explanation in the text and it is more or less connected to her hard-nosed attitude.

In the last draft another feature were added: she needs security. It explains her eagerness to control but does not alter the image to a more positive impression.

Helle did never become a positive person in the written descriptions, but what had mattered was the plenary discussion. As it is seen in the scenario, Helle is described as a very positive and caring person despite the written persona description.

## **8.11 THE PERCEPTION OF PERSONAS IN THE DISCUSSION**

As I was considered the expert in personas it was I who pointed to the problematic areas in the personas and I who claimed that the personas were stereotypes. The discussion shows that the participants developed on the written personas and the group who had created them could answer questions about the personas with great with absolute certainty.

- I: And they must live for quite some time and it means that you have to identify with them. You have to somehow like

them. You can see that you have got a lot of information, but there is something I lack. And that is: what is it that makes me like Helle. When is Helle really nice?

E: Yes that was what we were going to, yes, as you said. What is it that made her husband marry her ages ago? You might have to go back ten years or three years, but there must have been something attractive about her. (...)

J: We agreed that it is because she is very maternally and she is very, family is first.

E: Security very

J: And she is very controlling and he liked that. He liked that she be on top of things at home.

I: The same goes for Gitte

E: There is a lot I think

I: When is she really nice

B: If I should say that then she really nice, she is a person who has a history somehow because she is super active. Has really been very active and has travelled a lot, I think. Maybe she has even been out in connection to her study. In Africa, or something like that.

A: I would love to be her patient because she has changes her hours from 15 minutes instead of 10. I find that a very positive trait.

B: And that she likes to use her own experience in connection to

A: She is human towards her patients

I: And they are much more difficult to handle because you need to get deep into their life. And this gets very difficult if they get too unpleasant. And if you shall be able to identify with them you need to somehow like them.

D: But I do like a person who has overdraft on his credit card, that's really cute, I did that when I was in the beginning of my twenties.

In the discussions, the participants used their own background knowledge to argue for the choices taken.

- B: It is because i know a lot of young medical, females, who soon will become medical practitioners. And they look like that.

Most of the discussions were around Carsten as it was difficult to understand when he would use the Asthma Control Centre. The group tried to convince themselves that it was possible to get him to use the system but at the end not quite convinced.

- A: He would love to measure peak flow and compare and see  
B: And compare and see if his is at the upper edge of normal or if it is lower  
E: But does that correspond with that he lives in, as far as I read it, it wasn't anything positive to have the illness when he is together with someone else. That he is conscious of that the illness is something negative.

The participants discussed and asked questions to the personas but my influence on the rewritings was huge. I possessed the knowledge of how a "proper" engaging persona should be presented and criticised the written personas from that viewpoint. In the reflective interviews in chapter 13 the terms "stereotype" and "likeable character" are mentioned several times. This might be due to the influence I had on the discussions.

## 8.12 SUMMARY

Analysis of the written material makes it clear that the transition from discussion to writings is difficult and the descriptions show

a huge difference in how much and how detailed the personas are described.

The writing process creates a barrier where information gets lost. Creative writing is an ability not possessed by everyone. Guidelines might help but it cannot provide enough help to overcome the obstacles in communicating information as stories. What seem to be missed in the transition from discussion to text are the details that differentiate the engaging persona from the persona: the difference between the rounded character and the predictable flat character.

To label patients and relatives as “controllers” seem to have furthered negative connotations that led to a negative description of the engaging persona. The relationship between the communications of the field data, the labelling, and the engaging persona needs to be further investigated.

If I compare the information I gathered in the user inquiries with the five areas for the engaging persona almost all areas lack. I did focus on the users emotional relationship to the illness but there was nothing that could help the designers to infer character trait, background, and emotions from the material. This might explain why they used their own experiences and background as much as they did. On top of that the data was presented as statistics and facts and lacked the vivid, rich and colourful experiences and observations I had had in the meeting with the users. A power-point presentation might not be the best way to communicate the

data and I could have used other methods to communicate information e.g. photos or sound bites.

The creation of personas could be considered a success as the loss of information was compensated by the personas being discussed and perceived in a collective process and the participants got a common ownership of the personas. They engaged in the personas and understood their motivations for actions. In the discussion the participants used their own experiences to support the creative process but as they were brought in an open process there was a constant adjustment to others' experiences and to the different inquiries.

Due to the discussions the group got a common language and a common understanding of the problems. Differences in perception were raised and even though they used their own background and experiences to argue for some decisions they also, as it will be shown in the next chapter, got a common understanding of the personas and as it will be seen in their reflections a common understanding of the design process.

# 9. BETWEEN PERSONAS AND SCENARIOS – ESTABLISHING SITUATIONS

## 9.1 INTRODUCTION

The goal at the end of the first workshop was to define situations for when the persona will act with the system, for example the situation for Helle when her medical practitioner has advised her to begin to use the system. These situations build a bridge between the personas and the scenarios. Likewise, this chapter builds a bridge between the chapters about personas and the chapters about scenarios.

This chapter explores the initial step for the scenarios: the definitions of situations for the persona acting with the system. The situation is what begins the actions in the scenario and is as such the point of departure for the exploration of the design area

from the persona's point of view and the situations are therefore connected to the persona's needs.

The chapter will present what it takes to get from personas to scenarios and with this the model is developed further. The development of the model will be a guide for analysing the discussions of the situations in the design group.

## 9.2 NEEDS AND SITUATIONS

“At their simplest, all narratives are the movement from a beginning point to a finishing-point.” (Cobley 2001) p. 9, but to begin the narrative the character needs something that can start the movement of events in causality. The design area, in this case asthma monitoring, defines the space in which the character can act and the drama evolves from an incident related to the area, but in contrast to fictional writing, we are not to create drama but to explore the dramatic situation - the persona acting with the system. To do so we need a starting point that can lead to a row of incidents wherein we can explore the system's design.

In the goal-oriented approach to personas, the goals are part of the persona and are defined from the beginning of the persona development process (Chapter 7).

As the engaging persona is developed from multiple character traits, the goals are not linked to the persona but arise from the persona's needs and from the situation wherein the persona is placed. The situation sets the narrative going and the situation creates the goal. In the example of Gitte a situation is established where she has a meeting with an asthmatic patient during a visit.



For Gitte this situation includes a setting, an oppositional character and a system – the Asthma Control Centre. From here the plot of the scenario starts and Gitte’s goals are defined, she must introduce the system to the patient. The goal is now part of the scenario.

When character traits are considered in connection to the design area and the situation they create user needs. The needs originate from the understanding of the engaging persona but cannot be separated from the situations of use. E.g. in the case of Helle, she is in a situation where she wants to use the Asthma Control Centre and her want originates from a need to control her illness. In the case of Carsten it is from the need to compete. These needs can be fulfilled in a variety of ways. In this specific case the design area of the Asthma Control Centre grounds the needs and they become, in the later process of the scenario, the beginning of the dramatic situation. At the same time the need provides an understanding of the motivation<sup>19</sup> for action. Helle has a need to control her asthma, when she later uses the system it is this need, together with her character traits, that motivates her use.

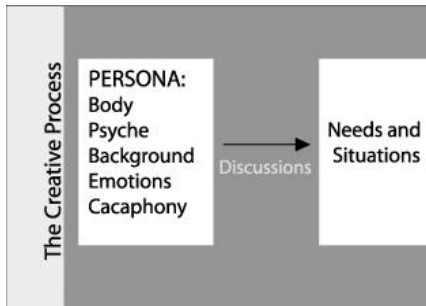
The take on users’ needs differ from an HCI approach where the understanding of the user and what the user wants to achieve is inseparable. User needs is defined as: “understanding the characteristics and capabilities of the users, what they are trying to achieve, how they achieve it currently, and whether they

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<sup>19</sup> I understand motivation as the explanation for action “if we wish to understand the action of any individual, we must look at the motivation which compels him to action” (Egri 1960) p.34.

would achieve their goals more effectively if they were supported differently” (Preece, Rogers et al. 2002) p. 172<sup>20</sup>. In this definition needs are defined as characteristics and capabilities of the user as well as what the user wants to achieve. The engaging persona includes the characteristics and capabilities of the user, whereas the element of what the user wants to achieve is separated from the understanding. Needs in my term is connected to the persona and understood in connection to the situation.

### 9.3 SUMMARY



**Model 1: Second part of the model for engaging personas and narrative scenarios**

The needs and situations are derived from the description of the persona and considered in accordance with the design area. The need can either arise from the situation or from the description of the persona. The situation can either arise from the need or from the description of the persona.

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<sup>20</sup> I will not go into a further discussion of user needs as the term seems not to be well defined

# 10. WORKSHOP DISCUSSIONS ON SITUATIONS

## 10.1 INTRODUCTION

This chapter focuses on three areas: How the discussions of situations in the design group took a point of departure in the earlier persona creation. How the discussions of needs are interrelated with an understanding of motivations for action and situations of use. Finally how these concepts broadened the understanding of the personas and the ability to target them.

The discussions of situations took place at end of the first workshop.

## 10.2 THE DISCUSSIONS



III. 16: Overview of the room

In the workshops the point of departure was termed situations. The goal was to define the situations in which the three personas were likely to use the Asthma Control Centre. The situations were discussed and decided jointly in a group session with me at the whiteboard writing down the proposals for situations. The discussions were free flowing and took many turns. The discussions were so lively that the person responsible for the recording did not observe that the tape ran out in the beginning of the discussion of the situations for Gitte. I will therefore only analyse this discussion briefly.

The discussions of the three personas evolved around their needs and situations and furthered an understanding of the characters through discussions of incidents and construction of stories.

I will, in the analysis, focus on the discussions around the situations and on how field data, the personas, and the story-structure initiated solutions and furthered an understanding of personas and situations.

## 10.3 HELLE



**Ill. 17: Due to lack of permission to publish the initial photo this photo of Helle was selected by the design group before the second workshop.**

Among the three personas it was Helle who by far was the most complex character to get a hold on and the group spent most time discussing her. Not only has she two functions both as a relative and a patient, but also the fact that she was the first patient to be discussed, created a more thorough focus on her. Time was also spent on

discussing the relation between the medical practitioner and the patient in general and evolved into discussions about the relation from Helle's point of view.

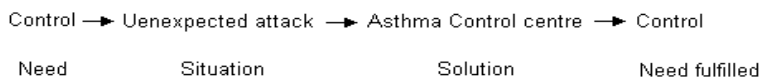
### 10.3.1 NEEDS AND SITUATIONS

As it can be seen in the model for personas, the needs and situations develop from the definition of the persona and from the design area. Before the essential situations for Helle's use of the system could be established it was necessary to discuss her needs and the situations in which her needs arise. Together these serve as a springboard for the dramatic situations.

The discussions of needs and situations had two characteristics. It was either the bare need that established a situation or it was the situation that established a need. In this example it is the need that establishes a situation:

E: Yes this means that she wants a concrete solution. It means she can get a lot of information from Gitte, but she wants a concrete solution that can get her back in control.

In the persona description it was established that Helle has a need for control. This need was discussed in relationship to the situation where she has an unexpected attack and she will need to feel in control again. The Asthma Control Centre can help her gain control over her illness.



The situation of being pregnant establishes a need for information.

J: She can also search. She can become one that searches for more information because she wants to start a family



During the discussions adjectives got added to the description of Helle e.g. one who put pressure on medical practitioners, security-seeker, and 'conservative'. The adjectives derived partly from the persona description but they were also derived from the less concrete information about her life. An example is the wall-to-wall carpeting that became an explanation for both her not reading her e-mails and for her putting pressure on the medical

practitioner to come up with explanations. Another was her job at the tax authorities that explained her being 'conservative'.

E: Then she is in control again

A: Yes she works for the tax authorities so she is 'conservative'.

I: You cannot say that many are 'conservative' today. Not many do as their medical practitioner says.

E: I don't think that if you ask her she will say she is 'conservative'. Because she has spoken to one at work even though she prefers systems.

D: It is something about the knowledge she has herself, she wants it confirmed or denied. It is this way of thinking 'conservatively'.

In this example the understanding of Helle as a 'conservative' person changed from understanding her as narrow-minded to a more positive view on her as a person who does not trust her own judgments of information and seeks security by talking to others.

The needs, the design area, and the situations were connected and inseparable in the discussions as it is seen in the model. As well as establishing the situations in which Helle would use the system, the discussions also lead to a new perception of Helle with more character traits and furthered an understanding of her behaviour and motivation.

### 10.3.2 SITUATIONS AND STORIES

The situations discussed focussed on three main areas: Helle as relative (pregnant and mother to a child who gets diagnosed with asthma), introduction of the system, and use-situations in the

home. Each situation was discussed through vignettes that broadened the understanding of the situation and provided an understanding of Helle's thoughts and reactions to the situation e.g. a large part of the discussion was spent understanding how Helle would think about asthma when she was pregnant: would she feel the unborn child as part of her body? Or would she consider it as a something separate from her body? And what differentiated the relation to asthma and behaviour towards the system in these two instances? By understanding Helle the participants engaged in her, identified with her and created a common understanding of how the difference between being pregnant with asthma and having a child with asthma creates different reactions towards an alert message from the system.

E: It is just that as soon as the baby is born then she has nothing to relate to. Then she can judge the red alert well that is me, I can feel I am ok, but it is red. She can't do that when it is the baby, because when it says red she will view it differently and say: suddenly it's red and I haven't paid attention to my baby not breathing properly. Or what is happening and then investigate it.

The discussions of situations inevitably lead to an unfolding of little stories that evolved around the situation.

A: (...) She could be the type that if the medical practitioner says something that she somehow disagrees with she will go to the zone therapist afterwards and get a second opinion. Wouldn't she?

Here the situation for going to the medical practitioner leads to Helle going to a zone therapist afterwards to get a second opinion



and for the design team to a new understanding of how she hold 'conservative' views.

D: It is something about the knowledge she has herself, she wants it confirmed or denied. It is this way of thinking \*conservatively'.

E: Yeah

D: That if the medical practitioner says something different from what she knew before

I: If the medical practitioner says to take asthma medicine every day

D: And she has read something different. Then she will ask the medical practitioner: yeah but I have read something different. And the medical practitioner will say: but that is not true. And then she will do as the medical practitioner says. That's the way I see it.

A: If it was in harmony with her previous experiences. She could be the type that if the medical practitioner says something that she somehow disagrees with then she will go to the zone therapist afterwards and get a second opinion. Wouldn't she?

D: Yeah

It is as if a little script with dialogue unfolds:

<b>Int.</b>	<b>Medical practice</b>	<b>Day</b>
-------------	-------------------------	------------

The medical practitioner:

Medicate every day

Helle:

But I have read something different

The medical practitioner:

But that is not true

Helle does as she is told. Later she goes to a zone therapist to get a second opinion.

The story created a room for understanding Helle both in the aspect of her actions but also in the aspect of the mental state of mind of being 'conservative' – how far will she go when she is told to do something.

### 10.3.3 VERIFYING THE SITUATIONS AND DISCUSSIONS

Several concepts were used to verify the ideas for Helle's behaviour. The individual participants' own knowledge was in this excerpt used to verify how Helle relates to the information she gets from the practitioner.

- E: Then she goes into another field if we are to classify them, because there are some, The Asthma-Allergy Association classifies them too. There are some that trust the white-coated solutions of some sorts. And then there are those who in the same situations will buy mumbo-jumbo medicine. And then there are those who won't touch anything established. She could be at the borderline. Her logic, because she knows asthma from the family, tells her that medical treatment will work. Here it just shows a situation where it doesn't work. But if she gets a reasonable explanation from the medical practitioners that it will work, then she will swap to the white coats and say: then I'll do it.
- I: She will see the logic in it
- A: Then she will do it.

The four categories provided an understanding of Helle's actions where the category "controller" provided the understanding of her behaviour and became a tool to verify her actions.

A: I think she puts pressure on the medical practitioner to get an explanation, to tell her the cause behind. If I can find the cause then I can remove my ... I think she will put pressure on it. But I also think that if the medical practitioner says you should take this then she will do it.

B: Yeah

E: Then she is in control again

At other parts of the discussion it was field studies that verified the data.

I: There were some numbers of how many used the different (areas on the site). The majority was pure information seekers, but they are a secondary target group, but you shouldn't forget them, because the site will be watered down and it can be that if she is in this new situation will she enter via the Asthma Control Centre? Or will she enter via the main page?

During the discussions the group needed to verify their ideas this partly gave a common understanding amongst the members and partly a feeling that they were on the right track and not making things up.

### 10.3.4 SHIFTING VIEW-POINTS

In the discussion there was a shift between three perspectives on the system: Helle's perspective, the medical practitioner's perspective that included looking at the system through the eyes of Gitte, and looking at the system from a general patient perspective.

The general discussion went from a discussion of a non-concrete patient and the use of the term “you” to a focus on Helle and it became this focus on Helle that settled the discussion.

- I: Where does one get knowledge from? Is it from playing with the system or does one get an understanding of why the system reacts as it does? You can say that the knowledge about why the system reacts as it does is lacking. Where they see a system thing. It is because I made a little error in the key in. Or I shouldn't have entered this value.
- A: But I don't think Helle is doing that. I assume she thinks that a red alert, how does it feel to me. And when it is green, then she can have been poorly or felt dizzy, and then she thinks about that: how odd that I have a green message when I feel poorly. And if she gets a red and feels fine, then.

The shift in viewpoint created an understanding of how difficult it is to separate the medical practitioner users from the patient users and how much the system is dependant on both types of users.

### 10.3.5 DESCRIBING NEEDS AND SITUATIONS

Through the discussions of situations for scenarios the perception of Helle broadened compared to the written description and a new understanding of Helle arose. This was expressed through a row of adjectives that added to the understanding of her as a character. Most of these were compatible with the adjectives from the written description and a few were new, but both broadened the perception of Helle.

She now has a need for security, she trusts authority, she shops for health offers, she is motherly, she does not read e-mails, and she is attune with her body.

The understanding seems to provide the second character trait lacking in the written description: she is at the same time 'conservative' with a need for security and a shopper amongst the health offers who is attune with her body.

Helle as a character has developed through the discussion from a stereotype into a rounded character with the ability to engage. And it was evident that the group members tried to understand Helle, her needs, and her motivations for actions.

Not only did Helle develop as a character but the discussions also seemed to provide a common understanding of her as a character, an understanding that went beyond what was actually said. Often half finished sentences created a room for a shared understanding that was developed far beyond the information the written description contained.

### 10.3.6 THE AGREED SITUATIONS

1. As a new user. She has arrived at home and is about to do her first key in.
2. Experienced user that gets a red alert. She has done a lot of key ins but it is the first time she gets a red alert.
3. Her child gets asthma
4. New situation - lacks knowledge, maybe she is pregnant and considers how her pregnancy influences her illness.

She uses the Asthma Control Centre – and is no longer attune with her body.

5. Other situations: Reads about new medicine and is curious. The family wants a pet.

## 10.4 CARSTEN



Ill. 18: Carsten

The concept of Carsten was developed from the information about patients that neglect their illness. The design group formed the opinion that Carsten would be motivated to use the site because of his eagerness to compete.

### 10.4.1 NEEDS

The field studies showed that the ‘neglecting user’ does not really want to use the site and as Carsten belonged to this category it became very difficult for the group to understand what needs Carsten had in connection to the site.

- A: He goes on the net and looks for health information
- D: Yeah
- A: He goes to his medical practitioner with a bundle of health information
- D: No I don't believe he would do that. I don't believe he prints it out
- A: He has moved it to his Palm
- E: Wishful thinking
- I: What has he been looking for on the net?

B: Then it should be something he has read in an article in 'Politiken' [a newspaper] about something

E: He does not read papers

A: Illustreret Tidende

B: Well, yes, but he has read something about a sports star that has asthma

A: Yes

N: Yes

A: Yes he has read it in "I form" or "Euroman"

B: Definitely or some top athlete who since his childhood has suffered from asthma but still runs

The excerpt of discussion shows how difficult it was for the group to establish the need Carsten has for information. The motivation for him to read is described as low and the group found it difficult to relate to when Carsten has a need for information, how he will find it and how it will attract his interest. The problems arise from the description of his character traits.<sup>21</sup>

The field data shows that the medical practitioners view the ideal patient as a young male. This fact was used when it came to an understanding of how the medical practitioner would recommend the site to Carsten. This was easily established and there seemed to be no obstacles imagined in Carsten's process of getting started using the site

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<sup>21</sup> Later in the process this discussion became the foundation for a decision not to make scenarios for Carsten, as he was considered very difficult to target.

Unlike the discussion that evolved around Helle and her situations with her medical practitioner the discussions around Carsten and his medical practitioner did not relate to Gitte. There seemed to be an accepted view that Carsten has a male medical practitioner. Early on, his practitioner was established as a male and later referred to as “he”.

B: He probably has a male medical practitioner who identifies with this young guy who is quite cool and does the things he never did.

The discussions that evolved around Carsten focuses on how difficult it will be to get him to use the site. He has one distinct need: to be able to handle his illness in extreme situations. Even though it was clear, that it could be difficult, maybe impossible, to get Carsten to use the site the consequence that he might not be part of the target group was not taken at that point in time.

I: But again it has to do with making it a concrete and very scary experience before he will look for information

A: And he is the neglecting type

The consequence that he might never use the site was almost understood; it was pointed at, but ignored. The needs Carsten has for using the site are objectively there but his character traits as a persona creates obstacles for the use. This understanding of him made it very difficult to find situations that could sustain a use.



### 10.4.2 SITUATIONS

To establish situations for use it was vital to find the motivation for use and the agreed situations are closely connected to Carsten experience of being scared of getting an asthma attack when on holidays. This makes him contact his medical practitioner and get him to understand that LinkMedica can help him when he does sports or is on holidays. This is what can motivate him to start but during discussions it became clear, that he is a short-term user. He needs constant reminders from his body or from his medical practitioner to keep on using the system.

D: Then he must renew his prescription if he is going away for 3 month and then he might only have 14 days to key in and then he does it for a week

J: Well yes maybe

D: And then he might be busy the last week

A: But this shows that he will be very difficult to get started again. There must be a specific reason for him to use it.

### 10.4.3 STORIES

Stories played a minor role in the development of situations and in the two incidents where they evolved, they tended to be so far off that I had to call order.

D: Yeah actually he is scared, but he will never say it. Can you give me an advice, I have experienced this and how much medicine do you think I should take to cope when I do sports or extreme something.

B: Extreme sport

A: He wants the medical practitioners to remove it

J: And then the medical practitioners says we have a perfect site where you can read all about asthma and extreme sports

I: No

B: You are a person for Intranets and the like

E: How old are you?

A: The Indianet and Himalayas

I: I feel it is the Christmas lunch talking

#### 10.4.4 THE AGREED SITUATIONS

Carsten has experienced an attack while on holiday and got scared. Before he visits his medical practitioner he has been on the Internet and looked up mountain climbing and asthma, he is therefore prepared for the visit. The medical practitioner recommends that he use the Asthma Control Centre and together they book a later visit where his monitoring is viewed.

1. Carsten starts after a minimal introduction and being handed a flyer. Keys in for a month and then stops.
2. Starts again, reacts at attacks or if he is going to travel or when his prescription should be renewed

The discussions of Carsten show how important it is for the participants to be able to find the motivation behind the use. Establishing situations cannot be viewed as a simple step in the procedure, but is tightly connected to the character traits developed for the persona. The discussions of situations of use for Carsten was difficult as it became clear how difficult it will be to get him to use the site and especially to go on using the site. He will never be a faithful user. Even though both medical

practitioners and AstraZeneca dream of targeting him, they might not be able to include him in the target group at all.

As it will be seen in the next chapter this discussion provided the next step – scenarios – but did not include the Carsten persona.

## 10.5 GITTE



**Ill. 19: The edited  
photo of Gitte**

The persona ‘Gitte’ was the one that the participants spent the least time discussing because her situation seemed straightforward and they used the persona and field data as a basis to discuss her.

### 10.5.1 NEEDS AND MOTIVATION

For Gitte, the need she has for using the system was established as a need to save time during the visits and a need to give the best offers of treatment. This need motivated her use of the system primarily as a need to save time and secondarily as a need to offer the best treatment. The need is seen in connection to what it takes to get her started as a user in this instance, it is her desire as wanting highly professional educational offers that is important when considering why she will use the system.

- B: I think, that what we found was that she is very consequent when she chooses in relation to the professional benefits she can get from her courses. Then it should be in relation to a very professional input about asthma, as you say. That it

should be in connection to it, not something in itself, but in connection to her getting knowledge about something else.

A: I think that what turns her on is the professional input where LinkMedica is something secondary

B: But if she is convinced, if she really is convinced that this is the right way to treat by following (unclear word) and this can be the tool for her to reach her goals

A: Then she sees it through

Gitte's use of the system is connected to finding her motivation for the use. This problem has a clear connection to the difficulties AstraZeneca has experienced in their previous work. A lot of medical practitioners have been on courses but only a minority had taken up using the system afterwards. The key problem for AstraZeneca is to get medical practitioners to use the system. The discussions of what benefits Gitte would get from using the system does not seem to originate in Gitte as a character but rather in the participants' own understanding of the benefits. It has been based on a sales objective that the medical practitioners could save time during the visits, but it has never been proven or is not understood in this discussion from Gitte's point of view.

### 10.5.2 STORIES

No stories evolved around the situations for Gitte. The development of situations evolved around discussions. Gitte's use seems to be subject more to discussions of how the participants want her to use the site rather than with a point of departure in Gitte as a persona. As it will be shown in the next chapter this had consequences for the development of scenarios for her.

### 10.5.3 THE AGREED SITUATION

1. Gitte is introduced to LinkMedica
2. Gitte introduces a patient to LinkMedica. The patient seeks help because of an acute aggravation.
3. An asthma patient that uses LinkMedica calls to have a prescription renewed

### 10.6 MY ROLE

In contrast to the previous sessions where my role had been that of the knowing distributing knowledge as well as guiding the sessions I, in this session, had a more downplayed role. I guided the sessions but did no longer possess knowledge of the personas as I had not participated in the creation of them and did not have the thorough knowledge of the personas that the group discussions had provided.

I was still in charge of summing up the situations and, as I was in front of the white-board, became an authority that guided the session and decided what to write down from the discussions.

### 10.7 SUMMARY

The focus on situations serves as a starting point for the scenario. The situations are decided upon with a point of departure in the persona's needs in accordance with the given design area.

For the design group, the discussions functioned not only as definitions of the situations in which the persona would use the system, but also as a basis for a broader understanding of the personas and in the instance of Helle the discussion created the

missing character trait. In the discussion of situations a row of little stories were created and these furthered both an understanding of the persona and of which situations to focus on.

During the discussions it became important to find the persona's motivation for use and the description of the engaging persona had been developed to an extent that enabled an understanding of that motivation.

When the group discussed which situations should be the starting point for the scenarios they could not understand the situations without a frame of reference to both the needs of the persona and the motivation for action that stems from the character descriptions. As it was shown in the case of Helle, the concept of situation, needs, and motivation lead to a development of a new character trait that the written description lacked.

It seems evident that the thorough description and understanding of the engaging personas created the source from which the motivation can be found and from which the needs, considered in accordance to the specific design area, can be seen to originate from.

# 11. NARRATIVE SCENARIOS

## 11.1 INTRODUCTION

The move from creating engaging personas to scenarios reflects the move from a static character description to an active character in a story where I view scenarios from a narrative perspective.

I will in this chapter present the term scenario and how it is perceived and used within systems design. After this exploration of the term, I will present my take on the term with a focus on narration and how this apprehension of scenarios is connected to the engaging persona. I will explore how this perspective can help clarify the content of scenarios not as a mean to reject existing scenario methods but to improve them. This leads to the final development of the model for the engaging persona and narrative scenario.

Lastly I will analyse the second workshop with AstraZeneca. Here I will use the model as an analytic tool, I will look at the process of developing scenarios, and finally how this influenced the perception of the design process at the e-business group.

## 11.2 SCENARIOS IN HCI

### 11.2.1 FROM STRATEGIC PLANNING TO HCI

The term scenario is widely used in connection to a systems design process. The term is shared across a range of methods; from the drawings in Use Cases to acting out design ideas. Scenarios are used for systems design with focus on change in work and workflow, for development of websites, and as web tools with focus on consumers and e-commerce. Most scenarios are based on users tasks, on the users goals, or on the users and their context. The communicated format can be either in writing, videos, drawings or acted out.

The view on scenarios as prediction or investigation of future systems originates from strategic planning and this will provide a guide to separate and understand the differences in the perspective and the use of scenarios.

In the introduction to the term I focus only on written scenarios that involve some kind of narrative, used for systems- or web design and based on users' tasks, user goals or users and their context.

In the 1960'es Pierre Wack introduced scenarios for strategic planning at Shell (Heijden 1996) and his work has influenced the use and construction of scenarios in HCI (Carroll 2000).

The goal of the scenarios in strategic planning is:

- To change the mental models of the decision-makers



- To be able to take an off set in the decision makers existing mental models
- To use scenarios as predictions that can create an understanding of the insecure elements connected to the future
- Through new perspectives to create new viewpoints

Wack makes a distinction between two types of scenarios: external scenarios and internal scenarios.

External scenarios are consistent and challenging descriptions of possible futures. They are created as a collective action and emanate from shared mental models of the external world. The intention is to represent possible future developments and outputs.

Internal scenarios are personal and represent expectations to one's own possible future. They are not as complete as external scenarios, but are consistent internally. The internal scenario is a causal row of arguments that combines an action with a goal (Heijden 1996) p. 5.

Scenarios are not the same as predictions. With predictions the assumption is that it is possible and useful to predict the future. In planning, the scenarios are seen as processes and the assumption is that there are no right answers and the future is not to predict, but can be discussed. Scenarios make discussions possible and make it possible for the decision makers to take

strategic decisions and to work with and discuss risks (Heijden 1996) p.103.

### 11.2.2 SCENARIOS IN HCI

There seems to be no single definition of the term scenario in HCI. Many have discussed the term (Karat and Karat 1992), but an unambiguous definition does not exist.

Scenarios are "descriptions of natural, constructed or imagined contexts for user-product interactions." (Suri and Marsh 2000) (p. 153) where the descriptions have the form of fictitious stories about specific characters, events, products and settings. Or they are "a description of a set of tasks, a work context, and a set of task the user perform or wants to perform. A scenario sketches future technologies" (Nardi 1992) p. 13. Rosson & Carroll describe scenarios as stories about people and their activities (Rosson and Carroll 2002) p.17.

The term scenario is used in the Scenario-Based Engineering Process, that combines business process reengineering with systems development (McGraw and Harbison 1997) and to describe more abstract illustrations of systems, e.g. Use Cases. In Unified Modelling Language programming scenarios are the basis for defining the classes used in program design, hence, when programmers have written a scenario, it is used directly to look at actions (Rosenberg 1999) p. 16. This provides a more system-oriented focus where the actions can evolve around both a user and a system but without descriptions of the context of use (Constantine and Lockwood 2000). These descriptions lack the details and structure of the story "... details are reduced and

“variables” or class names replace more literal descriptions.” (Constantine and Lockwood 2000) p. 7. They are more complete and cover the whole system whereas the investigative scenarios focus on exploring the design area and the possible side effects of the design (Carroll 2002).

The use of the term to describe both abstract systems and explorations of design furthered a distinction between scenarios and stories. Erickson (Erickson 1995) claims that scenarios are more abstract than stories, as scenarios leave out the details of the story, the motivations and the personality. Clausen (Clausen 2000) makes a distinction between stories and scenarios where the scenario implicates a context and its role is to influence the context. The story supports the system designer’s dialogue with other design groups about the design.

This distinction makes sense only from the point of view of the abstract notational understanding of scenarios. In most perceptions the scenario has the ability to function as a support for communication too.

“Scenarios compel attention to the use that will be made of the design product. They can describe these situations at many levels of detail, for many different purposes, and from many different perspectives, helping to coordinate various aspects of design projects and opening up the design process to all its stakeholders”  
(Carroll 2000) p. 15.

There is a difference between the way researchers and practitioners use scenarios. Researchers use scenarios to make abstract models understandable, to get partial elements accepted, and to support consistency.

Practitioners use the scenario with a greater variety. To break complex projects down into manageable work tasks, as a link between different phases of development and to support design solutions (Jarke 1999). They are often used as spontaneous and informal methods to consider users needs during the design process (Hasdogan 1997).

### 11.2.3 BENEFITS AND PITFALLS

The benefit of the scenario is that it is specific and uses a language that is easily understood and accessible for both users and designers. This is a contrast to other models that requires knowledge and expertise in order to be understood (Sutcliffe 2003). The scenario enables a design process focused on *use* (Jarke 1999), (Kyng 1992) and explains vividly why a *system is necessary* (Jarke 1999). The scenario enables an understanding of the experiences that most likely results in a successful accomplishment of the *user's goals* (Bliss 2000) and it offers a *task-oriented* decomposition (Jarke 1999).

This overview suggests a shared understanding of the scenario method as a mean to provoke discussions and generate ideas in a specific language easily shared by users and designers. It enables experiences to be shared and anchor the empirical data in a specific form.

The downside of scenarios is that they can confirm beliefs and create obsession with details and they can create a false reassurance, as it is hard to know when the design area is covered. The downside is also a lack of clarity in evidence of field data and a lack in focus on the user.

The benefits of the scenario are:

- The scenario enables specific knowledge (Sutcliffe 2003) and supports reflection in action (Bødker and Christiansen 1997) (Carroll 1999)
- They support communication and shared understanding between the members of the design team and between users and designers (Erickson 1995), (Bødker and Christiansen 1997) They can help design knowledge to accumulate across problem instances when categorised and abstracted (Carroll 2000).
- They support idea generation (Bødker and Christiansen 1997) (Bødker 1999), including abandoning of design ideas (Sutcliffe 2003) and are easily revised and written for many purposes and at many levels (Carroll 2000).
- They constitute a theoretical anchoring of an empirical “chaos” (Bødker and Christiansen 1997).

The downsides of scenarios are:

- Scenarios can create a false reassurance that all aspects are covered by a small number of scenarios and can supply minimal evidence that confirms a belief (Sutcliffe 2003).

- As scenarios are detailed they can bias people away from the big picture and create obsession with unnecessary details (Sutcliffe 2003)
- The scenario methods lack clarity in defining the user: it does not capture the essence of the user as representation is covered by attributes such as age, job and title (Mikkelsen and Lee 2000) and might not faithfully represent user's tasks and contexts or the user of interest (Nardi 1995). The method lacks focus on the user and does not create engagement (Nielsen 2003).
- The scenario design tradition lacks evidence of how data is gathered and on which basis the scenarios are formed (Grudin and Pruitt 2002)

Cooper (Cooper 1999) links personas and scenarios. He describes the scenario as where the investigation of tasks takes place. "A scenario is a concise description of a user using a software-based product to achieve a goal." (Ibid p. 179) where the goals stem from the persona description.

Even though it seems natural that there should be a link between personas and scenarios they have often been viewed as separated methods. Criticism of and focus on the downside of scenarios is often provided by writers with focus on personas and the persona method.

#### 11.2.4 INTERNAL OR EXTERNAL SCENARIOS - TO EXPLORE OR TO ILLUSTRATE

As mentioned the strength of the scenario is its ability to make design ideas concrete and keep focus on context, on use, and on user. As well as its ability to investigate problems related to both current and future conditions.

The scenario can be used for different purposes: to illustrate a system, to evaluate, to design/redesign, and to test theories. These purposes all refer to the interaction between a user and a system, but what the scenario represents depends on the aim of the scenario (Campbell 1992). Campbell looks at scenarios with a tool-perspective. Another perspective is to categories scenarios from a time perspective, looking at whether they illustrate events and task in the past, present or future or as Suri & Marsh put it: sometimes the term refers to events and circumstances in the past, sometimes to current user tasks, sometimes to exploration of possible futures (Suri and Marsh 2000) p. 3.

As the use of the term scenarios covers both different approaches both in systems development and in HCI as well as a variety of uses I find it useful to approach the term with the distinctions between internal and external scenarios and the distinction between predictions and investigative scenarios, as suggested by Wack. These distinctions are used primarily to delimit my focus amongst the many perspectives on scenarios.

The scenarios in HCI can be external or internal and it can be investigative or predictive.

- External scenarios are shared descriptions of the external world. They have focus on workflow, context and user goals. Or they can focus on the user's motivations and inner thoughts. It is a procedural description of the actions that leads the user to the goal. They can describe both systems and theories (Reisner 1992).

The external scenarios can be tools to support communication about users and use between members of the design group (Pruitt and Grudin 2003). They enable dissemination of knowledge about users and use and supports the design group to engage in and identify with the users, the use and the context of use (Young and Barnard 1992).

Furthermore they can be a mean to involve users, where the specific descriptions of settings and situations serve the communication between users, designers and usability consultants (Bødker 1999)

- Internal scenarios are the individual non-verbal or verbal perception of the user and the design area. Either as an construction of the user (Sharrock and Anderson 1994) or as scenarios that the designers build spontaneously and unconsciously (Hasdogan 1997).

The distinction between predictions and scenarios can be seen as equivalent to the distinction in HCI between scenarios used to illustrate design decisions and the use of scenarios to investigate design ideas.



- Scenarios as a creative tool to investigate design ideas include both external and internal characteristics. As the scenario is easily revised but still concrete, open-ended, and fragmentary it includes both spontaneous and non-verbal traits as well as shared procedural descriptions. The scenarios explore use and users in different settings and situations. The explorative approach supports imagination and the creative process.

The scenarios can be of use in a comparison of different ways to achieve the same goal e.g. the use of extreme characters in extreme situations to create a diary (Djajadiningrat 2000). Or to evaluate and choose between different design suggestions (Potts 1995), (Bliss 2000). Scenarios can be created with both a positive and a negative outcome to explore design solutions (Bødker 1999), (Jarke 1999). It can cover not only ordinary use but explores extreme use and use situations e.g. problem scenarios or scenarios for people with special needs (Hasdogan 1996)

- Scenarios as illustrations when the future system has been decided upon. The scenario is a complete specification and illustration of the decision.

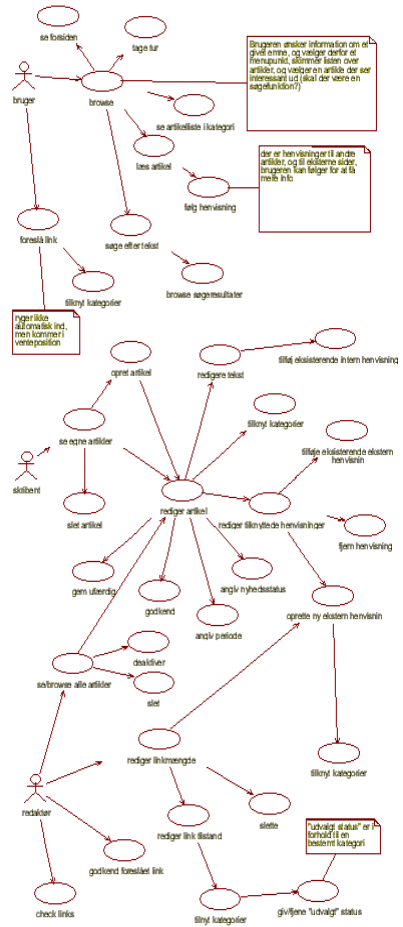
The aim of the solution scenario is to provide an explicit and concrete vision of how technology can support human activities (Nardi 1992) - as a vision, a solution or an illustration (Bødker 1999), (Kyng 1992), (Reisner 1992). It can take the form of a prototype of a system where the aim of the scenario is to analyse the demands of the system and to describe the tasks it should be able to

handle. The systems-developer writes the scenario and describes the system in still more detail. The scenario is a tool to envision and discuss demands to the system e.g. the functionality of each button can be described as a little story of how the button is used and its functionality. The scenario as illustration can also be a requirement specification as a description of what the final system should look like. The aim of the scenario is to describe the tasks the system shall perform and the demands of the system.

The scenarios I focus on are external scenarios used as creative tools to explore design ideas.

“Scenario 1: ‘Maria’ - Road Warrior

After a tiring long haul flight Maria passes through the arrivals hall of an airport in a Far Eastern country. She is travelling light, hand baggage only. (...) Her computing system for this trip is reduced to one highly personalised communications device, her ‘P-Com’ that she wears on her wrist. A particular feature of this trip is that the country that Maria is visiting has since the previous year embarked on an ambitious ambient intelligence infrastructure programme. Thus her visa for the trip was self-arranged and she is able to stroll through immigration without stopping because her P-Comm is dealing with the ID checks as she walks.”



III. 20: An example of explorations of ideas (Ducatel and Bogdanowicz 2001) and of the initial steps of a complete illustration of a content management system (Mus&Mænd 1999)

The relationship between the engaging persona and the scenario is close. The persona is a creative tool that does not function

without one or more scenarios that investigates use in context. The engaging persona is seen as a character, which implies a connection to a story. Without the story the persona is a static description of a user without context and without a relation to the design area. It is in the scenario writing process that the design area is explored from the persona's viewpoint.

This approach on scenarios as a creative tool, is close to that of Jarke's (Jarke 1999), where the scenario describe possible events, stimulates thoughts about events and assumptions related to the events, as well as actions, possibilities and risks. The scenarios are structured like stories; with a main character that is motivated to use a system in a specific situation, with a specific intention, and goal. It explores design ideas and is a tool to support communication.

### 11.2.5 SCENARIO ELEMENTS

HCI researchers and practitioners agree that a scenario is a story about the use of a system, but how the scenario becomes a story and what elements it should include have not yet reached consensus.

There are little concrete descriptions of the scenario creating process. Most agree on a leap from field studies to a break down of these, but the process of breaking down differs and how the scenario should be produced from the field studies seems not to be incorporated in the descriptions. The leap from analysis of the field data to the actual scenario is invisible and the process of writing seems to be perceived as a natural human activity.

The steps described by Rosson and Carroll sums the steps up nicely: 1) Define the design area - vision, rationale, assumptions, and stakeholders. 2) Collect data - workplace observations, recordings, interviews, and artefacts. The field studies include observations directed towards the scenario building process – looking for agents, goals, actions, events, obstacles, contingencies and outcomes (Carroll 2000) p. 257. 3) Analyse data - stakeholder, task and artefact analyses, general themes. 4) Create scenarios - problem scenarios that illustrate and put into context the task and themes discovered in the field studies. 5) Claims analysis: find and incorporate feature of practice that have key implications for use (Rosson and Carroll 2002) p. 24.

There seems to be a smooth transition from field studies in the design area to the scenario.

A look at the various definitions and the views illustrate that some features are always present while others vary.

There seems to be a common agreement that the description involves some kind of main character (actor/agent) described with a role (Carroll 2000), (Potts 1995) , (Cooper 2003), personal characteristics, motivation, life style (Suri and Marsh 2000), desires, and expectations (Bliss 2000). The main character is in a physical world setting (Potts 1995), (Cooper 2003), (Bliss 2000) that situates the activity, the system, and the artefacts. The main character is in a situation described from the activity system and the artefacts (Bødker and Christiansen 1997). The main character has a goal (Carroll 2000) or a task (Suri and Marsh 2000). A story unfolds that include actions and obstacles (Carroll 2000) created by tension between the system and the user (Potts 1995), (Cooper

2003). The actions can be seen from both the individual user's point-of-view and from the an organisational point-of-view (Bødker and Christiansen 1997). The story ends with an outcome where the goal is reached or maybe not reached.

The guiding concept in the writing process is for some authors' schemata theory, as it is understood in cognitive psychology (Schank, Polkinghorne), while others rely on the structuralist approach on narrative (Greimas, Propp).

Lee Cooper uses the model (Cooper 2003) from Schank's and Abelson's schemata theory to develop scenarios. The model describes how narrative components contribute in organising the human understanding of everyday situations. The organisation of narrative component is conveyed to scenario structuring, described in the following steps:

1. Accumulation of data to catalogues over findings
2. The observed action is split into episodes
3. The episodes are interconnected in a overall plan or "scheme"
4. Details about character traits as well as comments and explications where the designers draws on his/hers own experience are added.

Carroll (Carroll 1999) points out that the scenario includes the traditional elements of a story: setting, agents or actors, goals or objectives and sub goals with a reference to Propp. He then refers

to Potts who also points to story schemata as something that can help us produce salient scenarios (Carroll 1999).

There is a distinction between an understanding of narratives from a cognitive and mental perspective and an understanding that is based on a structuralistic approach. Using story schemata implies that the structure of significance in the text reflects the structure of meaning making. But there is a difference between the written arrangement and the intra-subjective perception of the story. The former is the bare text but the latter includes the reader's story schemata – the knowledge already possessed of the domain (Branigan 1992)<sup>22</sup>.

“According to the model-statement linguistic expressions cannot directly represent mental structures that is constituted by the user of language. The case is rather that such a linguistic meaning causes construction of a mental model.”

(Borchmann 2002) p. 106. (My translation)<sup>23</sup>

Rather than looking at how we mentally organise everyday experiences I will look at how the scenario as a story can

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<sup>22</sup> The distinction between the intra-subjective perception (the fabula) and the actual arrangement of the written text (the sjuzet) will be dealt with later in this chapter.

<sup>23</sup> “Ifølge modelredegørelsen kan sproglige udtryk ikke stå direkte for mentale strukturer der konstrueres af sprogbrugeren. Det forholder sig snarere sådan at sproglig betydning foranlediger konstruktionen af en mental model.”

incorporate the user as a character and how this can provide a tool for the scenario creation. The descriptions are made with a basis in field studies and a focus on user and use and the scenario is built around an engaging persona with a focus on the data on the users.

It is crucial to point out that there is a distinction between the scenario as a tool where upon you add data from field studies into a story form and the exploitation of the story form in a creative process. In the first instance the scenario expresses ideas the writer already had before writing the scenario. It is, so to speak, a container that uses the narrative as an aid for memory. In the last instance the story-form supports the creativity and through exploration of the narrative design ideas emerge.

The variation in elements points both to disagreement in the content of scenarios but also to incongruity in the status of the writing process. Is the scenario a document, which contains your ideas? Or is it the writing/creating process that enables ideas and explores the design field?

If the role of scenarios are, as Christensen and Bødker formulate it; to “capture ideas and present them in an open-ended way, as well as checklists for systematic reflection” (Bødker and Christiansen 1997) p. 224, we need to be able to identify the elements of content and we need to investigate the narrative writing process in order to pinpoint the differences between writing a story and perceiving one – between writing a scenario and analysing one.



Diaper (Diaper 2002) criticise Carroll's approach on three levels: A missing awareness of a premature commitment to design decisions, no description of the psychology of reading, and the fact that different people will envision the same scenario in different ways. The awareness of functionality is missing in the scenarios - either because of lack of expertise of the design area or lack of creativity.

Diapers solution is to suggest task analysis as a both theoretical and practical basis for the flaws in the method. Diaper (and Carroll) has a predictive view on scenarios and views the final scenario as a complete description of the system. I agree with Diaper in his criticism but as I see the scenario from viewpoint where explorative scenarios help discussions focus on the user, I will look at both the writing process and the reading process with a theoretical and practical basis in the narrative. It is not my intension to use the scenario as a complete description of a system, but to raise discussions, create awareness of the designers' assumptions about use and user, and to facilitate design ideas.

The creative part of scenario writing is crucial; it is during the writing process that the field data evokes design ideas. The writing can take place in a shared setting and as an act of communication. I will in the remainder of the chapter look at what constitutes a narrative and how the writing process can function as catalyst for using field data to create design ideas. I hope to develop the framework further, to let the engaging personas play an active role in the scenario in order to create a

more complete framework for both the engaging persona and for scenario creation.

### 11.3 THE NARRATIVE SCENARIO

The term "narrative" has several references: it includes the human way of organising experience, the process of telling, and the plot structure of a text (Larsen 2002). The process of scenario writing demands all perceptions of the term narrative; in order to create a scenario you need to understand what constitutes a narrative. In order to read the narrative you need to be able to recognise the structure and create a relatively unambiguous meaning. To discuss the scenario you must be able to analyse the parts, to interpret the situation of use, and the situation for the user.

The study of narrative – narratology - can be divided into two areas:

- The study of narrative logic, e.g. the formal structures that unites all narratives. The Structuralists (from Propp to Greimas) represents these studies.
- The study of the specific text and its specific cultural functions, on the one hand a store for memory and on the other hand a way to conceive meaning. (Larsen 2002)

In this study of the story there will be a distinction between narrative seen as:

- Understanding/meaning-making
- Creating/communicating
- Interpreting/analysing

### 11.3.1 THE NARRATIVE

There is an ongoing discussion of what a narrative is but an agreement that it includes time - it is a way for humans to organise time. But is a narrative the barest organization of time? "She took her bicycle" (Abbott 2002). Or does it include causality? "She took her bike and was hit by a bus" (Cobley 2001). I will not participate in the discussion but will take a pragmatic standpoint from a scenario point of view. In the scenarios the narrative must include causality as the focus is on the relationship between how the user's action creates system reaction and how system action provokes user reaction.

There is a distinction between narrative and story, or what the Structuralists refer to as a distinction between *sjuzet* and *fabula* or between plot and discourse. The narrative is the organisation of events while the story includes prior events or events the reader must assume or guess.

**"Narrative** A movement from a start point to an end point, with digression which involves the showing or telling of story events. Narrative a *re*-presentation of events and, chiefly, *re*-presents space and time." (Cobley 2001)P. 237

**"Story** all the events which are to be depicted in a narrative and which are connected by the means of a plot."(Cobley 2001) p. 243

I will in the following define and use the terms *sjuzet* and *fabula*.

### 11.3.2 UNDERSTANDING

When we experience incidents, we try to understand and create a meaning from the incidents. This meaning can either have the construction of a story with sequences organised in a narrative and linear structure or as meaning organised in a logical structure (Bruner 1990).

When we read a story or watch a movie a similar process begins. We are handed story elements that makes us create a story. Some information we do not receive as story elements they are to be inferred from our expectations, knowledge of the area and cultural background. E.g. a man enters an elevator on 27<sup>th</sup> floor; next he is in the streets. We infer the elevator took him down and he walked out the building. If the setting is a spaceship we infer he is beamed into the streets.

Or if we do not have any experiences of neither elevator nor spaceships we forget about the story in order to try all possibilities for getting a man from a steel cubicle to a street.

The story differs from the argument, the description and the overview by having a chronology with a distinct temporal logic. The temporal logic do not only refer to the external time – the time it takes to read or see (sjuzet time) but also to internal time – the time of the story (fabula time) (Chatman 1978).

The story also differs by including the principle of causality. When two events are presented in connection we look for causal, temporal or spatial connections, what we create is the fabula. The

fabula includes the action as a chronological chain of causes and effects, taking place in a given time and place.

### 11.3.3 FABULA, SJUZET, STYLE

#### 11.3.3.1 FABULA

The creation of the fabula is an intersubjective process constructed by the reader from presumptions and inference. An example is the case of the asthmatic patients who tried to infer causal relations between their asthmatic attacks and what caused the attacks e.g. pollution or pollen.

We build the fabula on the basis of:

1. The prototypical schemata: identifiable characters, events and places.
2. The template schemata: the organization of the canonical story (e.g. the presentation establishes time and place, the story moves to an end, there is a goal and a solution)
3. The procedural schemata: a search for appropriate motivations, causal relations, relations in time and space (Bordwell 1997) p. 49.

An example:

The woman takes the knife

The man hits the woman

We infer a causal connection between the two elements of action and we assume that the two actions will spur further action.

The fabula becomes different if the elements are the same but, in the sjuzet, are presented in reverse order.

The man hits the woman

The woman takes the knife

The intersubjective fabula building is supported by the external presentation of the sjuzet and the style. The fabula created by the individual reader differs according to the reader's procedural schemata and the reader's cultural understanding of the event.

### 11.3.3.2 SJUZET

The sjuzet is what you hear and see. It is the actual arrangement and the practical presentation of information and devices on which the fabula can be build (Chatman 1990).

In the example above the sjuzet contains the two sentences: A woman takes a knife. A man hits a woman. - A total of 10 words.

In any narrative the sjuzet controls the amount and relevance of information. The sjuzet relates to the fabula by three principles:

1. Narrative logic – an action infers to be a consequence of another action, of character traits or some general law. The sjuzet can facilitate the process by encouraging the creation of linear and causal inferences.
2. Time – narrative time has several aspects:
  - I. Order, the sjuzet helps us to construct the events of the fabula in a certain order.

- II. Duration: the sjuzet facilitates the events in the fabula to happen in any time span – from minutes to eons.
  - III. Frequency, the sjuzet can imply that the events of the fabula happens a number of times (as in the movie “Run Lola Run” where the same story is repeated three times with three different endings).
3. Space, the events in the fabula must be presented with spatial references. The sjuzet can through information about the surroundings facilitate creation of fabula space.

And the narrative logic, the frequency, and the space can either support or block fabula building (Bordwell 1997) p. 51.

#### 11.3.3.3 STYLE

Style is the way the information is presented. Bordwell includes style in accordance with sjuzet as part of the fabula building in film. The distinction between style and sjuzet is useful in scenario creation where the features of the media will influence the fabula e.g. the writing style or the use of props will influence the fabula building.

<p>Knud is 64 years. He retired early four years ago after a long working life as a carpenter. He has been married to Tove for 41 years and they have three children and 5 grandchildren. When Knud retired they sold the house and moved permanently to the old wooden boat they previously had spent most of their spare time on. During winter Knud and Tove heads south to warmer climes and during summer they are based in the harbour in Helsingør. Here Knud spent a lot of time at the library planning next winter's trip. Knud is the calm and patient type with humour. He is well liked of most. He has several very good friends – old colleagues, who during summer visits the boat and get a beer. Knud is fond of spending time with the grandchildren whom he takes on sail trips and learn how to splice rope.</p>	<p>Ruth is 63 years, early retired. Former Canteen assistant at a huge canteen at HK Copenhagen. Has an opinion on everything, impulsive, speaks before she thinks. Meets her old colleagues Still, they are her girlfriends. Plays badminton and is active in the party committee of the badminton club. Three grandchildren visit them four weeks every summer on the houseboat. At a course last fall she learned to make her own homepage. She uses it to tell about her family.</p>
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III. 21: Workshop on engaging personas and scenarios. DJE 19-8 2003

The difference in writing styles in these examples highlights the differences between the two engaging personas. The writing describes Knud as a thorough and thoughtful person and the writing style underlines the description. The staccato voice in the description of Ruth underscores her having impulsive traits.



### 11.3.4 CONTENT

The fabula contains a narrative logic organised by the sjuzet and includes elements that seem to be present in most stories. These elements vary and the media influences the elements – you will not find a theatre drama without a setting, while this can happen in written or oral stories. Or a film without an agent with human features, be it an animal or a machine. A scenario is a special kind of media and some of the elements are crucial for the kind of drama a scenario is.

#### 11.3.4.1 DRAMA

Basically, a story includes setting, goal, plot, and solution (Fields 1984) It evolves in a dramaturgy of beginning, middle and end (Aristotle 0350 B.C.E). For the scenario the dramatic elements are:

- The beginning presents the user and what the engaging persona wants to achieve.
- The middle describes what the user does – both the navigation and the information that is offered. It describes the engaging persona’s motivation for pursuing the goal.
- The end describes whether the engaging persona succeeds with his or her inquiries.

#### 11.3.4.2 CHARACTER

Two components are essential to every story: the events and the character involved in the events (Abbott 2002). Abbott calls the character “entities” as it does not have to have human characteristics, therefore he does not find the term ‘character’ appropriate. I prefer the term character and agent to “entities”. Agent when there are no human characteristics.

In scenarios it is important to distinguish between the user and the system. As I will show later, the system can be the main agent in the scenario thereby blocking a user's viewpoint. The term character can help keep the user in focus (see Chapter 12).

### 11.3.4.3 SETTING

Setting is another common ingredient in stories. The setting is optional “ she took her bike and was run over by a bus” does not include a setting, but to a scenario the setting is inevitable. It is the setting that pinpoints where the use takes place, the surroundings that may influence the use, the time of day, and other elements of context that might influence the use.

### 11.3.4.4 EVENTS

Events are essential to narratives. A narrative is made up of both constituent events, that are necessary for the story and supplementary events, that does not seem essential but adds flavour and enrich the story (Abbott 2002) p. 21.

A scenario needs events to function.

“Harry is interested in bridge failures; as a child, he saw a small bridge collapse when its footings were undermined after a heavy rainfall. He opens the case study of the Tacoma Narrows Bridge and requests to see the film of its collapse.”

III. 22: Carroll 1999 p. 3

The scenario includes two events: open the case study, requests to see the film. It is these events that give hints to the discussion and the later programming of the system.

### 11.3.4.5 CONFLICT AND GOALS

Conflict is one of the means to drive the story forward. To Egri it is the most important force in the story (Egri 1960). The conflict driven story is characterised by a premise that includes character, conflict and resolution (Egri 1960) p. 29. It is the premise that creates a goal for the character. Consider this premise “Ruthless ambitions leads to its own destruction” (Macbeth). Ambition creates the goal for Macbeth, the conflict is getting to the throne or not. Had Macbeth not killed King Duncan, the conflict of getting to the throne would not have arisen. Macbeth is met with obstacles and in the end the obstacles overcome his ambition and he is destroyed. The conflict and the obstacles function as catalysts, as driving forces for the story.

The scenario is very different - the character has needs that create goals and it is the goal that drives the story forth and not the conflict. Carroll mentions that during the field studies one should look for obstacles (Carroll 2000) p. 257. The obstacles become part of the events that can prevent the user from reaching the goal. Obstacles are not only obstacles from the system but also from the surroundings. In the example with Harry he has a goal that is outside the part of the story we are introduced to. The interest in bridge failure is not a goal, it is a motivation, but there must be something that got Harry in the situation he is in? If he is an engineer out of work that needs training in oscillation, the need for training in oscillation creates the goal to learn. To pursue that goal he uses the tool. Obstacles could then be lack of experience with the media or lack of time.

### 11.3.4.6 CLOSURE, RESOLUTION

When a narrative resolves a conflict it achieves closure (Abbott 2002) p. 52. Closure can be both for a single event and for the whole story. Resolution is one way of obtaining closure. When we read a story we want to have closure, to get answers to questions and to experience the end. We have a desire for the end. As Brooks puts it: “narrative desire is ultimately, inexorably, desire *for the end*” (Brooks 1984) p. 52.

When we write narrative scenarios we do not know the end, but we have a desire to find the end through the creative process. During discussions and writing endings will be created. An open-ended scenario can be an agenda for dialogue; e.g. will Harry succeed in learning about oscillation? How can the system help him succeed?

Scenario reading differs from scenario writing. As a natural cause of the reading process closure and resolution is craved. If it is not provided the reader will make it up (Abbott 2002) – in the scenario example the reader depicts Harry in a setting: is he in a classroom? Or: in his home? The scenario does not provide the information and in order to obtain closure, the reader will make the setting up.

### 11.3.4.7 COHERENCE

Coherence and continuity persuades us that the story is true. If it hangs together it is true (Abbott 2002) p. 42.

Coherence is extremely important for scenarios. It is very difficult to judge whether a scenario is true or not and coherence is the mean by which we judge. Coherence is not only valid for the story as such but also for the character, the setting and the

actions. In the above-mentioned scenario the reader can choose to believe that Harry is a true character. Continuity works when the reader learns why Harry opens up the case study of Tacoma Narrow Bridge – having seen a bridge collapse as a child motivates him, but is this information sufficient to get the reader to believe in him as a character? In this case the coherence depends on both the information and the cultural knowledge the reader possesses. If the reader does not know anyone like Harry he might not be believable, but if he or she does know persons like Harry the story will be coherent.

### 11.3.4.8 VOICE

The voice - whom do we hear - can be either a first person narrator or a 3<sup>rd</sup> person narrator. The first person narrator “I took a bicycle” is limited to the view of the person while the third person narrator “she took a bicycle” has possibilities to include comment that the person cannot know of – “she took a bicycle, but what she didn’t know was, that the evil person had put a GPS on it to track her traces”.

Some suggest use of a first person narrator (Mikkelson and Lee 2000). Even though this provides information about the language used by the narrator the downsides are bigger. The possibilities of adding “all mighty” comments in the scenario should not be ruled out, as they can function as containers of information that are not accessible for the engaging persona. If dealing with scenarios for more personas it can be very difficult to distinguish one character from the other with the use of I. A third downside is that it takes a very skilled writer to imitate and create a consistent language.

The following persona example shows use of different narrators:

<p>First person narrator It's Saturday morning and I finally have a few hours to do some of the things that I know are waiting for me. Ideally, of course, I'd be down on the golf course, or in the clubhouse, with the lucky ones. But things need my attention. I have a choice of chores: I can always wash the cars (they need it every time it rains!), I can tidy the garage, sort out the barbecue for next weekend (but that can wait) or I can mow the lawn. Yup, my lawn looks less like a green, than a paddock at the moment.</p>	<p>Third person narrator It's Saturday morning and George finally has a few hours to do some of the things that he knows is waiting for him. Ideally, of course, he'd be down on the golf course, or in the clubhouse, with the lucky ones. But things need his attention. He has a choice of chores: he could always wash the cars (they need it every time it rains!), or tidy the garage, or sort out the barbecue for next weekend (but that can wait) or he could mow the lawn. The lawn, he thinks, looks less like a green, than a paddock at the moment.</p>
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III. 23: Ann Light, *Persona workshop*, Oct 2003

11.3.4.9 CAUSATION

Causation is part of narrative itself. The events in the scenario for Harry implies causation, we do not get information of what Harry meets when he opens the case study, but we infer that the film is one of the choices he is faced with. By the way events are distributed in an orderly consecutive fashion it gives an impression of a sequence of cause and effect. We have the impression that opening the case study leads to the choosing of the film (Abbott 2002) p. 37.

11.3.4.10 PLOT

Plot is inevitable in a story; it is the linking of events in the plot that keeps the story moving (Cobley 2001). As mentioned in

Chapter 7, stories can be divided into two types: The plot-centred story and the character-driven story. In theory concerned with fiction it is easier to find descriptions of the plot-driven stories than of the character-driven stories. From Aristotle to the Structuralists there is a common notion that the character is nothing more than a function of the plot (Chatman 1978).

In the character-centred story the character is seen as a personage rather than somebody who is the product of the plot and just participating in the story development. Instead it is the character development which creates the story development (Horton 1999) p. 15 and the development that spins the plot (Egri 1960) p.34. To understand the characters motivation for action it is necessary to have background information about the character. Actions can either stem from changes in the characters environment or from the character's own inner contradictions thereby creating a development in the character.

“It is in our nature to change. A character stands revealed through conflict; conflict begins with a decision; a decision is made because of the premises of your play. The character's decision necessarily sets in motion another decision, from his adversary.”

(Egri 1960) p.60, 61.

Both plot-driven and character-driven stories include action, what separates them is the depth of the character portray.

As mentioned in Chapter 7, if the perceiver shall engage in the character, the scenario must include a strong central character with goals and desires that needs fulfilment during the story thus resembling the character-driven story.

Looking at Harry, it becomes clear that Harry has few traits and when one trait is mentioned - his devotion for collapsing bridges - he immediately reacts on it. Thereby resembling the plot-driven story. Harry as a character is not easy to understand, as the description does not draw on a shared cultural understanding and common knowledge. Not many can empathise with somebody who saw a bridge collapse as a child.

### **11.4 CREATION**

The narrative and explorative scenario writing differs from film scriptwriting in so far as the story outline is not determined before that actual writing process begins. Film scriptwriting starts with the writing of a treatment<sup>24</sup> that incorporates the three-act structure (Field 1984). Before the treatment can be written a lot of decisions are already made. The narrative scenario explores the creative situation and can be compared to the notion Tolstoy had when writing Anna Karenina:

“(...) he found that, after Vronsky and Anna had finally made love and Vronsky had returned to his lodging, he

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<sup>24</sup> A treatment is an 8-10 page story outline, that tells the whole story in a short form without dialogue.



Tolstoy, discovered to his amazement that Vronsky was prepared to commit suicide.”

(Abbott 2002) p. 18

It is the acquaintance that Tolstoy has with the Vronsky character and the narrative that in it-self provides the action. In this instance, it reflects the circumstances and the traits of the character, but when the story act as a motor for creativity it can both provide descriptions and solutions and also let the writer be carried away.

As the creative process can carry the writer away it becomes necessary for the writer to look for consistency and closure in both the description of the persona and the scenario. In other words the writer needs to look upon the scenario from a reader's point of view, to try to understand the fabula as an outside reader might understand it.

## **11.5 SUMMARY**

In the reading of various writings about the scenario method I found that there is a lack of consistency in the understanding of what the scenarios are used for. Are they predictions or are they explorations?

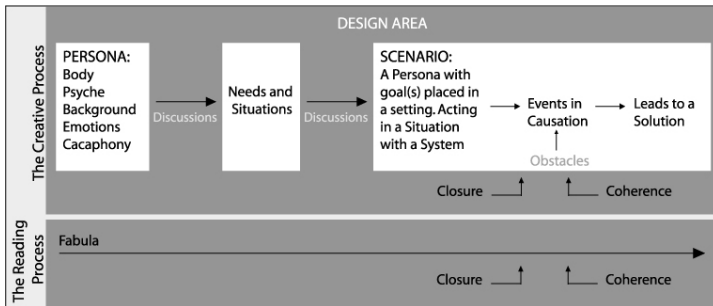
The described methods lacked awareness of the difference between the perception of a scenario and the writing of one.

In the take on scenarios that I propose, I see a natural development from a static description of the engaging persona to a dynamic description of the engaging persona in a story-driven scenario - the narrative scenario. The narrative scenario contains

both a dramatic development and story elements in an order of causality and the scenario explores the design area through a creative process of writing and discussions.

Special attention is paid to closure and coherence as this serves to create a unified and whole narrative and serves as support for the reading of the scenario. In the understanding of the reading process it is important to pay attention to the implied understandings that the individual readers use for interpretation and creation of the fabula.

In an attempt to cover most areas of the engaging personas and scenarios in the design process I have created a framework for the process.



**Model 3: The final version of the model for engaging personas and narrative scenarios**

For the engaging persona the five mentioned characteristics (body etc.) should be considered. Looking at these in view of the design area and in the view of the situation that the persona is placed in creates one or more needs for the engaging persona. When these are considered in accordance to systems design each need is the background for one or more goals. The goal is what

starts the story and sets the beginning for the scenario. The actions begin and the plot starts when the surroundings (the setting), the engaging personas body, psyche, background, and emotional state all are considered. Together the goals, the character, and the setting form a motor that spins the story into a row of events. Obstacles can disturb the events and can spin the story in new directions. Finally the story will reach a solution, either with a happy or an unhappy outcome.

Before finalising the scenario it is reread in order to look for lack of coherence and lack of closure. When a reading takes place, the voice and the media will influence the interpretation. The reader will use their own experiences of the area to try to come to terms with the ideas and these will influence the interpretation, especially if the design area, the engaging persona, or the setting is unfamiliar. If the story lacks coherence and closure the interpretation will either break down or be heavily influenced by the reader's own experiences.

In the next chapter the elements of the narrative will be used to analyse the scenarios produced at the second workshop with AstraZeneca as well as the designers' discussions of the scenarios.



## 12. WORKSHOP ON NARRATIVE SCENARIOS

In April 2003, a reduced group met at AstraZeneca. It was by then three months since the last workshop had taken place and as usual there had been internal shifts in the staff. One was now in Sweden and the PhD student had moved to the Netherlands to continue her PhD. studies. The core group of participants were the Webmaster, the medical advisor, the Head of the e-business group, and the trainee.

In view of the small group and as I considered their reluctance to work in groups, it was decided to focus only on Helle and Gitte and let each participant write one scenario for each persona. The different scenarios would then be discussed in a group session and a final scenario decided upon, that I volunteered to write in the days after the workshop.

**Program 8-4 2003**

10.00-10.30: gennemgang af de 3 modelbrugere efter omskrivning. Gennemgang af scenarierne til de 3 brugere. Ganske kort: hvad er et scenarie.

Prioritering af scenarier for Helle, Gitte og Carsten

10.30-11.30: Scenarie 1 + 2 + 3 + 4

11.30-12.30: Plenum: hvilke funktionaliteter kan der udvikles på baggrund af de 4 scenarier

12.30-13.30: frokost

13.30-14.30: Scenarie 5 + 6 + 7 + 8

14.30-15.30: Plenum: hvilke funktionaliteter kan der udvikles på baggrund af de 4 scenarier

15.30-16.00: Opsummering

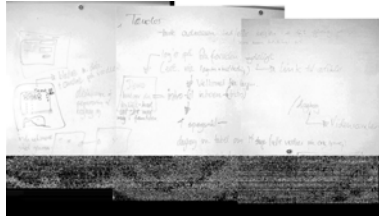
**Ill. 24: Programme for the day**

From the discussion of situations in the persona workshop a list of 10 scenarios was derived. It was clear that it was not possible to write all 10 scenarios in one day. Therefore it was decided not to focus on Carsten as the participants found he was too difficult to get to use LinkMedica.

The group decided that the first scenario to be written should cover Helle and her first use of the system in her own surroundings. The writing was decided to take approximately 45 minutes. Instead it took 75 minutes and the participants worked very hard and intensive with the material.

After lunch a scenario for Gitte was written. This process was far shorter and not so intensive. It was later reported that the participants either felt that they knew Gitte more than Helle or that it was very difficult to swap from one persona to another in one day. And it was felt that Gitte's scenario was written with Helle still in mind.

The group discussions were again a set-up with the group situated around a table and me at the whiteboard taking notes and writing up suggestions



III. 25: White board notes

## 12.1 FIELD DATA AND MATERIAL FROM THE WORKSHOP



III. 26: Group session

During the workshop I videotaped the discussions. As I was the sole person responsible for the video camera I had to use a wide-angle that could cover the entire room and I had problems to register

when the tape needed to be changed. This had the effect that I lack the final discussions of scenarios for Helle's use.

Other materials collected are the participants written scenarios for both Helle and Gitte, photos of various writings on the white board, and the two common scenarios that I wrote after the workshop.

## 12.2 THE SCENARIOS FOR HELLE

As the situation for Helle was agreed to be her coming home and doing her first key-in, the four scenarios have similarities. Interestingly enough most writers have started when she leaves work and not when she is in her home. This lead to an awareness of how domestic life preoccupies the user and how difficult it can be to get anyone to start a computer when at home.

In the following, I will go through each of the four scenarios before analysing the discussion and the common scenario.

### **Scenario written by A:**

**Dramatic development:** The scenario covers the three-acts structure with a beginning that sets the context, the character and the dramatic situation

**Obstacles:** her everyday situation becomes an obstacle, as she never opens the computer after her visit to the medical practitioner.

**Character description and events:** No character development. The character is described through a recognisable description of the everyday life constraints: fear when illness develops, tiredness, and busy when at home



Story development: the story develops through a row of incident separated by the three acts. Act 1: Helle at the medical practitioner, the dramatic situation is presented: she has had an attack and fears future attacks. This is her reason for visiting the medical practitioner. Act 2: Helle at home, her everyday situation is established and she is too tired to use the computer. Act 3: Helle at work logs on to LinkMedica, keys- in, but is too busy to explore the site.

Closure and coherence: most elements in the story are being treated with an ending that closes the incident. An exception is the end where it is implied that she might find it difficult to return for information. This element supports coherence, as it seems reasonable that she is too busy to find any interest in information and she has no need for it.

Design suggestions: three major suggestions are described: The possibility to enter values via SMS. A new view on asthma monitoring where it is no longer the peak-flow that is important but the patient's well-being, redesign of the key-in function that enables values to be entered for more days at a time, and with a response of a Smiley instead of a red, yellow, green message. This is an adjustment of the previous view on monitoring with a daily key-in.

### **Scenario written by E:**

Dramatic development: the scenario covers the three-act structure – 1) at work after the visit at the medical practitioner. 2) At home doing her daily tasks 3) Future use. The structure is broken in the

end when it is suddenly mentioned that she has an appointment with her medical practitioner in a month or so.

Obstacles: Helle is busy at work and needs time to concentrate. At home she starts cooking, which prevents her from logging on. A third obstacle is implied in the end when it is mentioned that she keys-in only at times when she feels her asthma.

Character description and events: Helle is described in accordance with the character description developed in the discussions of the persona and the situations and needs. She is not a secure user and likes to try out a test program before she enters her own data. It is her husband who initiates the use and he is the one to play with the system.

The little quotation almost in direct speech about how her medical practitioner has told her how to create her profile, functions as a link to the discussions earlier on, with relevance to her 'conservative' views.

Story development: it is Helle's domestic activities that drive most of the story forward. As a causal reaction to this, it becomes her husband that starts the procedure of starting the computer. From the moment Helle is in front of the computer it is her actions that drives the story forward. Her husband's presence is also a driver, as she explains to him what the medical practitioner told her, and her use of the system develops because of the explanation.

Closure and coherence: The first and second acts have both closure and coherence. They have an ending that leads to the next act and it seems plausible that it is Helle's husband that initiates the use. The closure is broken by the information about her visit to her medical practitioner in a month or so. The reader must imply that this has significance either for her use or for something else, but the significance is unclear. The end mentions that she is not so good at keying in, but there is no explanation why. The explanation can be that the keying in does not fit into her daily routines.

Design suggestions: A test programme that demonstrates use, a reminder via SMS, use of SMS to key-in.

### **Scenario written by J:**

Dramatic development: the scenario has two acts and no ending. Act 1: Helle on her way to home and at home doing duties. The first act does not establish a situation that can explain her use of LinkMedica, but establishes an everyday situation for a mother. Act 2: Helle is situated in front of the computer.

Obstacles: Some obstacles appear in the story. First she is too busy with her daily tasks that she forgets she has turned on the computer. Then her daughter wakes and is brought into the nursery. A call from her husband interrupts her use. Later her daughter screams and is fed. All obstacles are overcome and, in the later instances, quite easily.

Character descriptions and events: Helle is described according to the persona description and the discussions. She is concerned about security and the video reassures her. What she is reassured about is not clear.

Story development: the story has a causal development from she picks up her daughter till she has a last choice in the system. The development is divided into two parts: before she uses the system, where it is her daily routines that move the story forward, and when the system pushes the development.

Closure and coherence: the daughter is introduced in the set-up and then forgotten. It is as if Helle is absorbed in using the site, this might not correspond with her character traits. When her daughter is hungry she is fed but that does not interrupt Helle's use of the system. The interruptions from the daughter are so easily overcome and takes up no time, which does not seem plausible.

The lack of coherence, as information does not seem convincing this raises a lot of questions: do they have ADSL as Helle is constantly leaving the computer? What happens to her daughter when she is left?

Design suggestions: a card with the URL. An introduction for new users, a video introduction, a wireless peak flow metre with a reminder function and a reminder function on SMS, e-mail, or beeper.

**Scenario written by D:**

Dramatic development: the story falls into two sections. The first section is a small introduction to the circumstances and introduces Helle's use of the site. The second section introduces Helle's domestic surroundings and moves on to her using LinkMedica.

Obstacles: There are no obstacles.

Character descriptions and events: Helle is described with a little detail from the controlling characteristics: while her husband tucks the daughter in, she listens whether he does it properly and it is important for her to have full control over the development of her illness. Later she is described as a not too competent Internet user.

Story development: it is the use of the system that drives the story forth.

Closure and coherence: as it is the use of the system that is focussed on, the resolution comes when she finishes her use of the system and her data is transferred to her journal. The set-up however lacks coherence as the story suddenly moves on to mention the use of fingerprints to identify the user. This causes the understanding of time to collapse as it raises the question of whether we are in a near future or a future further ahead.

Design suggestions: This scenario has several very inventive design suggestions: an electronic chip with the medical

practitioner's information, an integration of the medical practitioner's journal and LinkMedica, an underlining of difficult words in her journal, a shortcut automatically placed on the desktop, use of fingerprints to identify users, personal welcome, an introduction, more key-in methods that e.g. covers her allergy, possibilities of adding functionality, personalisation and the asthma result read aloud.

### 12.2.1 DIFFERENCES AND SIMILARITIES

The main difference in the scenarios is how well they are able to establish the situation, the place and the time. Some scenarios use most part of the writing to establish the context of Helle while others considers her use of the system almost at once. The understanding of the context provides an understanding of her use of the system.

None of the scenarios develop new descriptions of Helle but stays true to the character traits from the persona descriptions and the discussion of situations and needs. The familiarity with her character traits creates coherence when connected to the descriptions of her use of the system.

All developed scenarios lack a character development instead it is either the domestic life or the system that creates the story development.

Most suggestions take a point of departure in a new perspective on asthma monitoring away from the use of peak flow measuring. This can be seen as a follow-up on discussions in the

group and in the medical community of the proper way to monitor asthma.

Some solutions can be seen to integrate the field studies directly e.g. the discussions about alert messages where the solution is to use 'Smileys'.

Several suggestions indicate that the time between the visit at the medical practitioner and the first key-in is crucial: how will Helle remember what to do? How will she remember the URL? How will she be recognised as a user? The solutions are either to use a chip or a card.

Several solutions focus on using SMS to key-in. This feature is directly related to the descriptions of domestic life overruling the use of a computer.

## 12.3 THE SCENARIOS FOR GITTE

The scenarios for Gitte were written as Gitte's meeting with Helle. As J. put it,<sup>25</sup> "it was as if the scenario for Gitte was written from Helle's point of view". Some of the scenarios are very brief and lack obstacles. The influences of the former scenarios are felt, as some of the solutions are the same as described in the discussions and scenarios for Helle.

### **Scenario written by A:**

This scenario is very short and is described more from Helle's point of view than from Gitte's. Helle is the main character to be

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<sup>25</sup> Quote from the final interview.

introduced and there is access to her thoughts “she thinks it is rather cool”.

Dramatic development: the scenario falls into three acts. It begins with a short introduction of Helle’s situation and why she has chosen to visit Gitte. The middle part is Gitte introducing the system to Helle and it ends with Helle leaving Gitte. There is no introduction of the context but it is implied from the knowledge that Gitte is a medical practitioner.

Obstacles: There are no obstacles

Character descriptions and events: the character descriptions draw on the personas description. There is no further information about the characters. The reader has to imply the character traits. The events mainly focus on what happen when using the system. Story development: It is the use of the system that drives the story forward.

Closure and coherence: all events are closed – Helle enters and leaves, the system is used and Helle receives a SMS with a welcome. Coherence is only with the knowledge of previous scenarios and discussions that describe Helle’s use. An outsider will find it difficult to relate to the scenario and to judge it as valid.

Design suggestions: the design suggestions relates to discussions of Helle’s use. There are three design suggestions that function both as a hint to the other participants of which suggestions from Helle’s scenario the writer accepts and as new design solutions.



The three design suggestions are: A button that transfers Helle's data in the medical record to LinkMedica and provides Helle with a password and username. This information is written in a folder that includes an introduction to the system. Helle receives a reminder on SMS that includes her username and password.

### **Scenario written by E:**

**Dramatic development:** the scenario falls into two parts. The first part is an introduction to Helle and her medical behaviour and record and an introduction to Gitte's take on Helle. The second part covers Helle visiting Gitte. This part has a three-act structure: Gitte decides to offer the system to Helle, she hands her a folder and tells her to get instruction from the nurse, Gitte sends her off with an excluding remark that she won't follow her condition in the system, but view it when they meet again in three month's time.

**Obstacles:** Helle is not interested in using the system. This obstacle is overcome when she realises she can use her mobile phone to key-in.

**Character descriptions and events:** both Gitte and Helle are described in accordance with the personas descriptions. Gitte is described as being the asthma specialist of the clinic, she differentiates her view on the patients according to why they visit her, whether they are serious or come with minor matters. Helle is described through Gitte's view of her; she is a serious patient that wants to control her illness. This description agrees with how Helle is described as a persona.

There are few events taking place. The events move on first with a jump in time between the first and the second visit and then in an advancing story. The story is interrupted by descriptions of thought and reflections that takes up more space than the actual story. Gitte's motivation for using the system is described using a flashback.

Story development: as described above the story does not develop as a causal advancing story, but has a narrative that looks back and is interrupted in order to understand motivation for action.

Closure and coherence: the little narrative of Gitte receiving Helle in the clinic has perfect closure. It seems to work for all events but one; there is no explanation of from where the login that Gitte writes in the folder appears.

Coherence is obtained by agreement between the scenario and the character descriptions, and by the constant referring to Gitte's motivation for action.

Design suggestions: Gitte writes the login in a folder. Gitte transfers Helle's data to LinkMedica. The nurse does the introduction of the system.

### **Scenario written by J:**

Dramatic development: the scenario has a three-act structure. The beginning introduces Helle and her problems with breathing. The set-up is established as Helle visits the medical practitioner Gitte; how Gitte examines Helle and learns she has a computer at home.

The second act is the use of the system. In the third act Gitte ends the visit and, when Helle has left, enters a personal message to Helle.

Obstacles: there are no obstacles

Character descriptions and events: the description of Gitte pointing out the security of the system relates to the persona description of Helle as being a controller. The description of Helle not using her computer very often is difficult to relate to the persona description. She is not described as an insecure user but it can be inferred that her everyday life is too busy for her to use it. This is in congruence with the scenario for Helle, but does also put demands on the reader of having read this scenario.

Story development: the scenario has a story that progresses in causal events. The progression is mainly from Gitte's actions. Not so much actions with the system but actions in relation to how Gitte expects Helle to react to what she is telling her. Even though the system is present for most of the story, it plays a minor role in the story development.

Closure and coherence: There is lack of closure as some causal relationships are to be inferred by the reader e.g. Gitte discovers Helle has a computer, next she finds that Helle can benefit from using the system. It is not clear whether these two incidents have any relationship. Coherence lacks when Gitte is described as being impressed by LinkMedica, but there it is no description why.

Design suggestions: only two suggestions appear; an instant SMS reminder and a choice of personalised messages sent from the medical practitioner.

**Scenario written by D:**

Dramatic development: the scenario is divided into two parts. The first part presents the setting and the motivation behind Gitte's decision to offer LinkMedica to Helle. The second part is the visit from Helle that ends with Gitte showing Helle a pollen graph.

Obstacles: the only obstacle described is that Gitte finds it difficult to remember the procedure. This obstacle is apparently overcome.

Character descriptions and events: Gitte is described through events that show her empathy with her patients e.g. she has an awareness of Helle's relationship towards her illness, she is aware of how Helle perceives the introduction video. Helle is described through Gitte's perception of her

Story development: the main driver of the story is the system functionality, when the set-up is established it becomes the interaction with the system that moves the story forward, from the initial log-in to the choice of showing a pollen graph.

Closure and coherence: the second part lacks closure, it is as if time ran out for the author. Otherwise there is coherence in the story. The characters are described in accordance with the

personas' descriptions and the story develops in a congruent manner. Gitte's motivation and her attitude towards Helle are described and each step in the story development is understood from these aspects.

Design suggestions: most of the described interaction is close to the solutions as they are today. New solutions included an ability to enter values for more days at a time and a video introduction to the system.

### 12.3.1 DIFFERENCES AND SIMILARITIES IN THE SCENARIOS

The scenarios for Gitte are much more brief and do not include as many design suggestions as the scenarios for Helle. They are often close to what LinkMedica looks like today and offer none of the investigative and imaginative suggestions seen in the previous scenarios.

The design solutions seem to function as a test of the design solutions from Helle's scenarios, now seen in the perspective of Gitte rather than an investigation of the design area from Gitte's point of view. This correlates with some of the scenarios as they are seen rather from Helle's perspective than from Gitte's perspective.

Different from Helle's scenarios that evolve solely around her use, the scenarios for Gitte's use of the system include Helle. The two characters are described in accordance with the persona

descriptions. In these scenarios there is not as much emphasis on Gitte's motivations for use as there was in Helle's scenarios.

Most scenarios for Gitte have closure as well as coherence. The scenarios unfold in a logical structure where all questions are answered. As stories they seem believable. If we take a closer look at the scenarios for Gitte, it is evident that the written descriptions closely resemble the persona Gitte. Gitte wants to be in control, is thorough and does what she is expected to do. It is the system that drives the story forward, and together with the description of Gitte the system creates the closure of the scenarios. Gitte's manner of actions is coherent with the description of the persona's traits.

An explanation for the lack of both character elaboration and design solutions might be that it was very difficult to swap from one persona to another. It was as if Gitte stayed in the minds of the participants.

J: I think it might have something to do with that you have her (Helle) life ... her life is like in the subconsciousness. And then you return after lunch or the break or whatever and then it is still her life that is in focus because you have it already specified. Because all of us had already written a whole A4 pages with more or less one line spacing, so it was like her life already was in focus. And I believe this was why it was a bit difficult. (final interview)

Another explanation might be that the participants felt that they know more about the medical practitioner's use than of the patient user. They feel a familiarity with the context and the work

practice and do not feel a need to explore the context. The analysis of the discussions sheds light over this.

## 12.4 DISCUSSIONS OF THE SCENARIOS

The discussions were videotaped and in the analysis I will look for recurring issues, differences in user perspectives, new design suggestions for the two scenarios and finally what the discussions brought to the understanding of the written scenarios. The scenarios were discussed one at a time but I have chosen to look at the two discussions together as this provides me with an overview of how the decisions for new functionality were established and the similarities and differences in the two discussions.

The main focus in the discussions was functions. The individual participant discussed with focus on context and the user, and solutions from all the written scenarios were included in suggestions for functionalities.

- A: Her medical practitioner presses on LinkMedica in his medical programme and data from his programme is transferred to the LinkMedica server, and her name and social security number is all we need. Maybe her actual medication and other trifles. But the necessary information it has been transferred. And then D. moves a step further and says there is synchronisation both ways. And I find that obvious. When the medical practitioner updates something in his journal then it is at LinkMedica and when she enters something in her dairy the medical practitioner gets it.

During discussions there were references to stories and functionality from the scenarios but also to the persona.

- J: Yeah but what I thought of is if you have been to the medical practitioner this morning and then I goes home and does all these laundry things and child and, no I'm not able to. And tomorrow I have the same kind of day, same routines, I forget it, but I don't get an SMS. Then I thought at if you entered at the same time every day, for example at seven, until you had keyed-in for the first time and then it stopped.

This excerpt shows that even though the reference is to the scenario the participant tried to put herself in the persona's shoes - she became Helle and went through her evening and considered the functionality from the acting out of Helle's everyday life. This provided the discussion of the functionality with a persuasive argument.

The discussion about Helle's use of a mobile phone was considered entirely from the knowledge established in the persona description.

- E: Does Helle use a mobile phone?  
A+D: Yes she does right at this  
A: You must be insane; she's a control freak and she on the whole  
I: Yes she has husband and child and  
A: Yes and the husband has a mobile phone too because then she can call him when he's shopping. Then she can call and ask if he has remembered everything  
E: Now I'm in



Sometimes the personas disappeared and the main focus was the system. In these instances the user became a label to the system. In the example below the medical practitioner is no longer Gitte but an unknown person.

- D: You could make a function in the medical practitioner's programme where you can write a message and then you can tick if you want to send it to patients as e-mail or SMS.

Even though the discussions were not meant to look at functionalities for both personas, they often did. But during the discussions of Gitte's use functionalities from Helle's scenarios were not always considered.

- A: The solution is to make the system so simple that it is enough to hand the patient a folder and say: do this and then the system is so cool than when the patient looks in the folder then it is completely clear what the patient should do. And when the patient enters the system then it is so cool he won't leave it again. I think that is the solution to the medical practitioners' problem. And it is this I have tried to sketch in my ...

In this excerpt the patient is mentioned as "he" The medical practitioner viewpoint seemed to block for an engagement and transferring of knowledge when the patient user was an unknown entity.

During the discussions there was a constant shift between viewpoints of the two personas, when Helle's scenario was discussed it also included Gitte's use of the system and vice versa.

- J: I think it is important that Helle see the same page as Gitte does. That it isn't two different pages the system comes up with. [Discussion of Gitte's scenarios].

The shift in viewpoint made the participant aware of the complexity of the system, whenever a function or an interaction was thought of it influenced the use for the other persona. This could be seen in the discussions of how to introduce a new user. For both personas the discussions were thorough and this functionality proved to be the most difficult puzzle to solve. For both personas the context has a huge impact on how a new user is introduced. For Gitte, it is the slot for patients that determine her ability to introduce a new user. For Helle it is her daily life and her technical abilities that are the determining factor.

In Gitte's scenario the discussions of systems and the day of a typical medical practitioner framed the discussions of functionality (system integration and introduction) while it was the descriptions of Helle's everyday life that framed the discussion for her use (reminder and motivation).

The participants seemed to consider themselves familiar with the daily routines of a medical practitioner and it came to influence large parts of the discussion. They have met medical practitioners at conferences and courses and are familiar with their systems and practices. An integration of LinkMedica with the medical practitioners' systems became a huge want during the discussions and was often the point of departure for other discussions around functionality.

The discussion of Gitte's scenarios also related to the familiarity with the daily routines. Gitte was discussed from a persona point of view but also from the viewpoint of a typical medical practitioner. The discussions of functionality related both to her and to an unknown medical practitioner.

D: The pre-talk how will you avoid it?

A: I won't avoid it, I just claim that when I try to write it then I understand why the medical practitioner now chooses ... because what I have written until now that it the perfect system we sit and design. There she must sell the idea that this is very, very simple a LinkMedica with one page. But I know that today LinkMedica has many pages and is very difficult. So now I understand why the medical practitioners don't bother to use it.

I: That you must understand that the medical practitioners must be dressed to be able to take these talks, that becomes important?

A: And that LinkMedica is dressed so the medical practitioners don't have to take the talks because if you ...

D: That's why, that's why I have suggested a small programme you can start that does the introduction, then you can start it and you can stop if it is...

This excerpt shows how solutions are listed in the discussions. It begins with a sudden realisation of why the medical practitioners don't want to use the system as it is today. During the discussion several solutions are offered. The solutions are: 1: Help the medical practitioner to cope with the introduction of the system. 2: Create a system that makes the introduction unnecessary. 3: Create a programme that makes the introduction. The different

solutions are tested against knowledge of a typical medical practitioner not against Gitte.

From the discussions of context it was not only the context of the personas that had influence on systems design but also how the organisational context influences the use. The way the course that introduces LinkMedica are performed and the way the sales representative are instructed influence the use of the system.

A.: That would be beautiful. And it would be so that the medical practitioner could use the system without joining a course. Because some want this and some want that. And they could use it immediately if a consultant said: try this.

I: Could you get the consultant to do that?

A: Yes we could, but we haven't had any luck because the system is too complicated. That's my explanation anyway, but...

E: And the organisation is not tuned to do it. It is the wrong people who ...

D: And some are told they're not going to spend time on that

The individual scenarios led to a feeling of ownership of ideas.

D: That's why I have suggested the small program you can get to introduce and you can start it and stop it if ...

A: I'm not sure that the medical practitioners would bother during the visit.

Even though the "owner" argued for his or her idea, the idea was challenged during the discussion and only solutions that were considered stable by all participants became accepted.

### 12.4.1 A PROBLEM WITH COHERENCE

During the discussions of both Helle's and Gitte's scenarios, most functionality was placed in the medical practitioner's system. This created a problem that had to do with both the way Gitte was portrayed in the persona description and the actions the participants described in the scenarios.

The portrayal of Gitte created problems for the later structure of the scenario. Gitte was described with only one character trait and was a stereotype rather than a multifaceted character. Her one character trait describes how she wants to be in control because she is afraid of being inadequate. To this picture, a peculiarity is added - she sings in a choir. Gitte lacks an oppositional trait, her character is flat and her actions highly predictable. As I showed in Chapter 7 it is difficult to engage in a flat character, and the predictable behaviour makes it difficult to question the information in the scenario, as it almost seems to write it self.

However, the written scenarios are all unrealistic and it was not the scenario as such that revealed this, but during discussions knowledge of the design area revealed the problems. In the discussions of the scenario, it became clear that although the story had closure, it did not have coherence – stories like these will never happen, as no medical practitioner will ever have enough time to introduce the system to a patient.

A: A medical practitioner will not even bother to spend time on LinkMedica together with a patient. It is fine if Helle gets an instruction from the nurse afterwards, is introduced to the

system and sees the video together with the nurse. But Gitte won't open LinkMedica, that's a mistake. Medical doctors don't have the time. Gitte must do something simple such as pressing a button and then Helle's registration is created. And Helle can walk out the door with a username and a password.

Because Gitte was described as a one-dimensional character none of the participants questioned her very intense and thorough introduction of the system at first glance. The scenario with the patient would have developed very differently if the character had included an oppositional trait e.g. the trait revealed by the field studies where she would never touch an area if she felt insecure, and if she felt secure, she would never have the time to make a proper introduction to the system. Following this scenario, Gitte would either feel insecure and never suggest that Helle should use the system or she would feel secure but not have the time to introduce the system properly to Helle.

During the discussions the mistake in the scenarios were realised, but it took some time, as the stories seemed to evolve smoothly and follow the story structure perfectly.

By comparing the stories with findings from the field studies of medical practitioners' insecurity towards IT and the participants' knowledge of the field, it became clear that the introduction of the system to a new user should never take place at the medical practitioner's office, but rather in the user's home.

While Gitte's scenario during discussions got rejected, Helle's was accepted. Even though Helle's persona description had the characteristics of a stereotype, her persona developed through both the discussions of her persona and during the scenario writing she was given the lacking character traits. Her context is familiar to most of the participants and they found it easy to engage in her as a character. The scenarios were perceived as authentic and as being coherent and they were in the discussion accepted as believable.<sup>26</sup>

## 12.5 DECISIONS OF FUNCTIONALITY

In this chapter I will look at the decisions taken for functionality. The material consists of the common scenarios I wrote and photos of the whiteboard taken after the discussions.

The writings on the whiteboard served as a means to agree on a new functionality, when functionality was written on the whiteboard the participants had reached some sort of agreement. Functionalities were deleted and added during the discussion.

In order to sum up the discussions, I promised to write all scenarios into one and include ideas that had come up during discussions. The final scenarios function as containers for design ideas in a narrative form and were supported by drawings.

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<sup>26</sup> An exception was the scenario from J. who has no children and her description of child caring described as: "A: This has nothing to do with reality"

I produced these scenarios immediately after the workshop. They were created from the design solutions that derived from the discussion and the screen dumps.

The main decisions were:

- A separation of the two sites in a site for patients and a site for health care professionals.
- A decision of another take on asthma monitoring where it no longer is necessary to use the measurement of peak-flow but where the overall condition is considered
- An integration of LinkMedica in the medical practitioner's own system
- The sender is the medical practitioner and not LinkMedica
- The diary is no longer perceived as something used on a daily basis but a tool for a treatment plan (for the medical practitioner) and for reflection about health (the patient). Views are for the last 14 days and more values can be entered anytime.
- The diary needs to be simple both for patients and health care professionals. Functionalities can be added but are not implemented as default.
- The entering of a new user should be very simple and not restrain the medical practitioner.
- Reconsidering the alert message
- Entry of data via SMS
- An e-learning introduction



While the scenarios focussed on specific functionality the discussions also included decisions on a more abstract level. The decision to move away from a view on the Asthma Control Centre as being used every day for a direct message of daily treatment to a view on the diary as being used in specific situations to create an overview for the patient and used for reflection, has more implications than design of new functionality. It implies a very different perception of the system and of the treatment.

## 12.6 SUMMARY

During the writing process the participants were able to explore the design area and come up with design solutions through an engagement in the persona. The story structure provided the writing process with an initial driving force and is was very easy for the participants to engage in the method.

The individual scenarios created an awareness of the importance of context and it seems that the engaging persona and the scenario, as character and story, make focus on context inevitable.

The scenarios helped the design group to focus on the user, her needs and her context. As stories, there were almost no flaws in the personas or the scenarios, and at a first glance they seemed believable, but the scenario as a written document can hide a lot of presumptions made by the writer, which have nothing to do with any form of reality and the story structure is such a strong and persuasive structure that the reader can perceive it as believable and credible even though it may have no resemblance

to reality. This became evident in the scenario for Gitte. In the creation of the persona, the participants had relied heavily on their own knowledge of people similar to Gitte and had created a flat character without the ability to engage readers. The scenarios made perfect stories that unfortunately had no resemblance to reality. Fortunately, they came to work as minus scenarios (Bødker 1999) in the discussion.

This shows that knowledge of the design area is important and that the scenarios have to be discussed. The written scenarios created design solutions from the persona perspective and allowed each participant to engage in the persona. At the same time the written scenarios enabled obstacles to be overcome quite easily. The discussions created awareness of other obstacles to be considered and opened up for a united understanding of functionalities and the problem spaces connected to the functionalities. During the discussions functionalities were confirmed and/or rejected from an understanding of the context and problems in the design area.

The discussions made the participants' aware of the complexity of the system, of the fact that whenever a function was decided on from the perspective of one persona it had implications for the other persona.

When the discussions moved away from a personas perspective and into a perspective of an unknown and general user the system rather than the user in connection with the system was focused on.

The individual scenarios led to a feeling of ownership for good ideas, but the ideas were challenged in the discussions. A joint scenario might have missed this.

Personas and scenarios are part of a design process that enhances discussions about users, the users' needs, and the use situations. As design tools, they may be viewed as concrete design suggestions and tools to improve communication but they should be seen as part of a process and not viewed as the final material.

When I view the workshop in the light of the four goals for scenarios in strategic planning, I introduced in the beginning of the pervious chapter, all four goals have been fulfilled.

- To change the mental models of the decision-makers. - It is evident that the mental models of the participants have been changed. They had after the last workshop a shared understanding of the core user being Helle and how difficult it is for the medical practitioner to use the system.
- To be able to take an off set in the decision makers existing mental models – Each participant had an understanding of the existing system and of the user that they used during the workshop. Sometimes the participants used their own individual mental model but in the joint sessions these were tested against the field data and the engaging persona and narrative scenarios.
- To use scenarios as predictions that can create an understanding of the insecure elements connected to the

future. – The understanding of how difficult it will be to get the medical practitioners to use the system and how the core user's everyday life influence the use are insecure elements that both influence future use but not least today's use. In order to overcome these obstacles the designers must realise that these are the problems in use the designers face when redesigning the system.

- Through new perspectives to create new viewpoints. – It is evident that without the workshops the above-mentioned viewpoints would not have been created. What is lacking is the ability to create change. At the time for the last interview, there was no incentive for the company to create changes in the system as will be shown in the next chapter. The e-business group lacked arguments for change, but they have been handed understandings that can serve as guidelines for future projects.

# 13. THE PARTICIPANTS' REFLECTIONS

## 13.1 INTRODUCTION

The reflections on the workshops took place in a series of interviews conducted at my office except for N. whom I interviewed at his home. The interviews were conducted within the first month after the final workshop took place.

N., who did not participate in the scenario workshop, was interviewed about the personas workshop and had read the common scenarios from the scenario workshop. He had to remember a workshop that had taken place half a year before the interview, but seemed to have it quite clear in his mind. The scenarios had no doubt triggered his memory and he had reread the personas before I did the interview.

The interviews had three main themes: the personas workshop, the scenario workshop, and the method. Each theme was considered in accordance to the participants' judgement of what had happened and their evaluation and opinion about whether or

not future projects could benefit from the method. Finally, they were asked to describe an ideal design process.

## 13.2 PERSONA WORKSHOP

The participants expressed an overall satisfaction with the first workshop. They found personas and scenarios a structured method that enabled them to discuss matters they felt should have been discussed earlier in the process. Both in connection to the development of the site but also in connection to the development of a strategic marketing plan.

N: It does change things. If only we had had such a session earlier on, because I was in a position one and a half years ago, where I did have a bag of money larger than we normally have, to market LinkMedica. If I could have used it much more targeted and much more usefully on something, such as we did here, I think it would have succeeded more.

During the process N. realised that it would have benefited the project if he had belonged to the e-business group when he was responsible for marketing instead of the marketing department.

The largest benefit from the methods is the ability to be specific in the understanding of the users both in the descriptions and in discussions.

"A: Well it is as if we. It is like Kirkegaard says, to put oneself in someone else's place. To begin from there that is very useful."

To some the most surprising outcome of the workshop is the realisation that they have never had any discussions about the users.

D: It was like I wrote to you, that we had never done this before. We had never discussed who is behind the screen. Never”

There are diverse opinions about how thorough the pictures of the users they painted were during the workshop. Some find that they can easily recognise the three personas, others that they are too stereotyped and that without the discussions they would not have worked. But the participants agree that the focus on concrete but fictitious users was of value

And there is a notion that the choices they made about whom to target and how to describe the users might not be well enough grounded. A different choice of types and personas might have had implications

A: But there is an insecurity, not that I feel we ever made any epoch-making decisions that meant if we had chosen another path and said; she is blonde and have no children, then what? What type had she been then? But I'm sure we still would describe an okay person”

Even though there is a slight insecurity, the positive effect of the method is that it forced the group to take decisions and the choices made are better informed and more focussed than previous decisions.

- E: It is not saying; but we might continue to meet insecurities but if we stand still and think we can hit all then we might as well drop it. We can say that if we move along one road and try to attune it to the information we have then we can move slightly wrong but then correct and move slightly wrong again. This will be closer to the truth than if we didn't do it.

### 13.2.1 TO CONSTRUCT

The participants agreed that to construct a persona was a very easy task. They used words such as “fun”, “it went well”, and “life-like” to describe the process of writing. It is as if the ideas come by themselves in an almost fluid process; when they start one idea the next follows. As it was shown in the analysis the story structure captures the construction.

- H: You enter a circle where, she was from the beginning a bit dull and a bit naïve, so she's an annoying type. But if you had said: she's great she's the head of the family and fantastic, she can do everything. I think you would have entered another circle.”

The descriptions are true to both life and the user inquiries and it is of value to have a description of the persona to consider future development against.

- E: And the description we worked on in pairs, they will, they can say: but Helle will do this and that because now we have a picture of someone like her. And it is of value to have a complete picture of a specific person. Like i have a picture of you sitting there. This will provide must more insight into what we shall do in the future and we can cut through things that are not relevant.



The lifelike descriptions are considered to originate from the discussions, as in hindsight, most of the participants found the personas were written as stereotypes or caricatures.

- D: Subsequently what hit me was that the personas are rather cliché-like, not as real people. It can be a result of our lack of sympathetic insight or lack of knowledge about our users. I don't know if this has consequences for the scenarios that follows, that our personas are like unambiguous cardboard figures. On the other hand I did experience that we had some very interesting discussions while we wrote the personas. For the first time we had a real discussion of whom we think are our users. (Excerpt from a written comment)

But the discussions and the scenarios compensate for the caricatures and, as it will be seen in the next chapter, create more engaging personas.

- D: But Helle I think she's more realistic. And it might have been because we spent more time on her. She was more multifaceted.

The focus on the engaging persona creates an awareness of how targeted the site should become, that it cannot function as a solution for everybody.

- E: And it became apparent to me - I think. For the LinkMedica.dk as a solution for everybody that is what I know is the normal way, that what everybody else who has been connected to LinkMedica.dk in the organisation, salespersons towards the patients for example. They have

got it wrong, I think, or they will get it wrong, because they have introduced it as a tool to control your illness.

But instead the discussions of whom to reach becomes a necessity. A necessary discussion neither the group nor the company had ever taken.

### 13.2.2 THE PHOTOS

The photos are considered to have an impact; they help concretise the inner picture of the engaging persona and created a tangible and shared understanding of the persona.

J: I don't know. I think it gave a common understanding of whom you were talking about. Because Jacob and I could easily have written about the person Helle until it got dark - almost. But to get the same understanding of the face, that might have been important. Well that's her; it is not just somebody casual.

They were also considered to be an aid for the memory, but both the photo and the written text aid the memory as it can be seen in the excerpt.

"A: I have a very bad short-term memory but if I have a picture to aid my memory I remember better. Carsten, I can just see him standing in the snow with the sunglasses on. You can hear that I remember him. And her, the mother, who is rather well covered."

The photo of Carsten did show him in the snow with sunglasses, but the photo of Helle shows a rather slim person, but the written

description described a slightly overweight person. Both photos and written texts create the image remembered.

### 13.2.3 THE FOUR USER TYPES

The four user types from the initial field studies; “controllers”, “neglecters”, “emotional mother” and “controlling mother” are well remembered. They are recognised and used in the almost daily confrontation with health care professionals and in correspondence with users of the LinkMedica Forum. The engaging personas seem at times to substitute or get mixed up with the four types.

- D: We still use them, when we speak we use the expressions that came: the emotional and the professional mother. And the things that came from it that we got the types, some recognisable types, some faces added. Or some types we didn't have before. Before it was just an undistinguished mass.”

The reports works as a basis for the personas and creates a notion of a scientific basis for the projects as well as notion of validation that stems from the participants experiences and recognition of the types. They are recognised but the types also create a common language when the design group talks about the users.

## 13.3 SCENARIO WORKSHOP

The participants expressed satisfaction with the workshop and found it a natural extension to the persona workshop. The workshop created a focus on the difficulties with the present

solution that had not existed before and gave ideas for improvement.

E: And I find that last Tuesday placed a focus on that there are some things we haven't noticed before and it also found it interesting what it was for things that were exposed, because otherwise you will never consider everything. If we haven't had Helle or Gitte as persons we wouldn't have generated those discussions and some of the ideas that were brought forward, because I don't think it will come out of the blue.

All participants considered the writing process easy. Even though some felt they could not describe themselves as competent storytellers, they found the engagement in the persona and the writing of the scenario easy.

J: Yes and it was very funny and especially as I say that I have never been good at composing or writing an exercise, but this went surprisingly easy. One and a half hour went and we thought it was only a half.

### 13.3.1 THE SCENARIOS

Helle was considered by all participants to be the best described and the most credible both when considering the persona and the scenario. Questions left unanswered by the scenario can in the future be answered by considering her persona.

E: I will say that when considering Helle I find that we have reached far, so far that there is no reason to get further with the description of her. When it is written together there is enough to get a picture of her and when we have some sort

of question; how would Helle do this? Then we will be able to answer the question from her description.

The patient users communicate their dissatisfaction with the site to the Webmaster and the participants felt more in contact with this user group. The participants feel a familiarity with the patient users and they can use their own experiences when considering Helle's situations.

D: And I get a lot of feedback from the patients and I know them better. They complain if there is something they don't like. And I often ask them to describe what they think of the solution and what they think about the diary. So I get a lot of messages, text messages in return.

The medical practitioner Gitte was considered to be less developed, almost unfinished.

E: Yes it was the visualisation; I was looking forward to get a complete description of a person. And we still lack that for Gitte, but with Helle I find that we have reached far.

The reason seems to have two aspects:

- It is difficult to swap persona, as the first persona seems to stay in the mind of the writer. This made the scenario for Gitte more of a scenario for Helle meeting Gitte than a consideration of Gitte's needs.

E: Yes for Gitte I don't find that we have created her properly. We need one more session. I wasn't aware of that you engage so much in the persons that they are hard to get out

again. I haven't really thought that through, but that I know now.

- It is a widespread opinion that the design team does not understand the medical practitioners' needs either because the medical practitioners do not know what they want or because the design group does not understand them as users.

I: Do you think it could be because Gitte is not so well written?

D: No it is hard to say. But I think, as far as I'm concerned then I can't understand what they want out there. Or maybe they don't want anything. They want something very simple but nobody has said it and we have asked them "what do you want?" and such likes. They are a very diverse group and we don't know them well enough. We actually don't.

Another explanation, which adds to the previous explanation but cannot replace it might be that the method is very intense and in the second part of the workshop the participants were exhausted.

J: But it was quite long days. I thought of it the last couple of hour when we did Gitte and it can influence the outcome because you are tired.

### 13.3.2 SOLUTIONS

More than actual solutions the scenarios provided the participants with an overall understanding of what is wrong with the present system and what should be the main focus in the future – a shift from a high tech solution to a low tech solution.

D: And we did find what that it should be something simple that it should do. And the rest we should leave or take away completely.

I: What is it that has been of significance?

A: The user situation has been of significance. The experience that we have a high-tech solution and we should move towards a, not a low-tech solution, but a solution that demands as little interaction as possible. We have known it all along but it became evident. And we have had some concrete ideas. (...) So it has clearly had an impact to put one-self in the users place.

It provided the group with some concrete solutions mainly from the patient users' perspective.

A: And we have had some concrete ideas. An example is to be able to answer by SMS: enter four numbers and the four numbers are the answers to their questions.

It provided the participants with an understanding of how the introduction should be removed from the medical practitioner and instead takes place in the homes of the patient user.

A: I didn't find it hard, but I find basically that it was uninteresting. Gitte mustn't think more on LinkMedica than she does on her stethoscope. It isn't something she considers. She takes it and she uses it when she must and then puts it back. It isn't something she considers.

## 13.4 THE METHODS

In looking back and evaluating the process the workshops are considered to have been of importance and to have given something to the participants, they have lead to an understanding of how important it is to consider the user and the users' needs during the design process. Even though the participants feel they have gained a valuable insight and understanding of the importance of considering the users in the process they feel it will be difficult to spread this perception to the rest of the organisation. It is considered that the e-business group can change the way they work and they can change priorities in smaller projects, but the company as such uses the same strategy towards net-media as they do when selling a medical product.

The workshops were considered to be of influence both on present and on future projects and the overall lesson learned, in consideration to LinkMedica, is to create smaller projects that consider the user needs at an appropriate level.

- A: But I will say that these two workshops have had a strong influence on how this sandbox project has been described and on how cheap it will be. Clearly, you know the whole solution for LinkMedica.dk and the technical solution is so beautiful – technically, but there are so many things that must have cost millions to develop and they aim complete at needs that don't exist. Then there are other obvious things that aren't there. We can do that much better today. Among other things; because of the two workshops.

The three-month span between the workshops was considered by all participants to be a problem.



### 13.4.1 METHODS

The evaluating of the methods considers the process as well as the change in mindset of most value. This goes for both the individual participant and for the e-business group as well as for the projects. The methods offer a very concrete way to put oneself in somebody's shoes with grounding in user inquiries, which provided the group with a structured common understanding of the users and the use situations.

- E: And just to look at it in another way and you can get closer to reality and get people convinced about it. You can do that with case-stories like that. (...) You open your eyes more for the practical issues, the details in, what you believe is not going to happen, the whole development is shot down. This way, you haven't considered that so you won't progress you turn it off. They are tired when they return home after work, as we found, they don't turn the computer on. We knew it, but why didn't we consider that from the beginning?

The concreteness of the methods is an advantage but can also be viewed as a weakness, because it leaves room for the thought that the choices made might be wrong. This goes both for the choice of whom to target and for the personas descriptions.

- A: But there might be the danger that you describe the wrong users. And there might be the danger that your descriptions are wrong.

To make a decision is to dismiss other choices and the overall impression is that the method forces enlightened choices based on a solid foundation of user inquiries, but the need for valida-

tion and testing of the choices occurred. This perception created an awareness of the importance of user participation in the process. Both personas and scenarios need to be tested against real users.

E: We have to ask Helle if this really helps. If we don't do that we start a dangerous practice, by saying well its logical. I suddenly permit myself to articulate what helps Helle. It can help me get the ideas for what helps Helle, but it is only Helle who can answer if it really means anything.

Ideas for future development of the method and how users could be involved in the development and design process were created. All participants seem to want user participation in the process. The group has discussed how to achieve this and have tried to arrange sessions but apparently without success.

D: But we haven't gathered teams of medical practitioners for a whole day and discussed. We have talked about it many times - ten users, ten medical users, and discuss the same way we did. We haven't done it, so maybe that...

To change an existing design process is quite difficult and more so in an area relying on medical practitioners' goodwill and it seems that the e-business group has got the will but little power to do so.

D: In this instance ten people with a risk of cardiovascular disease. What will motivate you to change your lifestyle? What tools? Should it be questionnaires, should it be something else? We haven't done that; you can say we repeat the error.

The participants found the methods progressive and this they considered an advantage; the move from user inquiries to personas to scenarios makes a logical and fluent process that considers the previous step and uses it to progress towards ideas and an initial description of the system to be built. The progressing steps fit the perception of an ideal design process described figuratively by E. as a spiral. The spiral considers both an actual development of the projects and a development of the group and their capabilities. The spiral moves until a decision to stop is taken and a new spiral, a new project, and a new group development begin.

- E: That you considered the scenarios on the way is something we get something out of. It is not just that you can write your PhD, or something. That is not what it is about. It is about the benefit that occurred. Which benefits do we get when we continue to do such things and continue to do at a pace we want. If we didn't we would come to a standstill, there would be an inertia. There wouldn't be any in-put that made us progress. That is why I say that I believe in the spiral and that is something we really consider to continue.

The persona and scenario methods provide a mindset that follows up on the reports in a structured way and help focus on the users in decision processes and even though the four reports have been studied intensely and have been used in meetings with medical practitioners, they are not considered to be able to stand-alone.

- E: Yes and if we had had only the reports. No, no that would have been, the risk was that they would clearly have been

read and I can use where I am now and now it is perfect and now we are going to write up and I have just had contact to someone who also thinks we can do this or that and this shows it too, so let's do it. Then this has been closer to, because you have already shown that there is much more flesh on it than can be expressed in the report.

Participation in the workshops rather than the written personas and scenarios was considered to be of most value. When asked if anybody else should have participated in the workshops, the answers differed. The core group, (D., E., A.) would have liked to include the web company and some programmers in the process as it is the participation in discussions and the creative work that anchors the perception of users and scenarios. The two persons more loosely connected to the group, (J., N.) did not find any need for this and they do not seem as familiar with the design process as the core group.

- I: How should the webdesign company be included? Should they have been part of it from the beginning or should they come later?
- N: I see it, that might be naive, but they can deliver almost anything. So I can't find the reason why they should participate.

The written personas and scenarios descriptions are not considered to be of value to outsiders unless they are familiar with the methods. An outsider can interpret the personas and scenarios as they like, and D. points to another factor that can influence the reading process: the reader might be afraid to

acknowledge the user description if they do not have any experience with IT.

- D: I don't want to create some sort of alienation when people think you are extremely clever on the Internet and IT and they hardly dare to be natural and say and use the Internet as the usually do at home. It become like very performance oriented and I feel that people might not speak freely and say that they know Carsten or they don't know Carsten. It depends on the perceptions people have about Internet use and the perceptions they have of use. Some speak more or less freely.

Together with the process it is the focus on users and the knowledge gained of the users that have inspired and informed the group most. The necessity of performing user inquiries and of user participation in the design process was made evident through the workshops.

- E: We can say that, many of the user inquiries that we must have more of in the future, they have become essential and they will provide us with a clearer picture, certainty to reject something in the future. Instead of saying well that sound like a good idea, that sounds logical, that must be easy enough.

Even though it is the participation that is most praised, the personas and scenarios are now part of the daily routines and when they consider future developments.

- D: We haven't used the three types in our internal discussions but maybe they are somewhere in the back of the head.

They are in the back of my head when I write or do or suggest new things, then they are there. That way they are quite present.

A: And we (...) have been discussing it. It is exactly to use some of the things imbedded in LinkMedica.dk and for example use some of the scenarios to get moving and say; let's imagine her, the medical practitioner, what precisely is her situation, and what obstacles are there.

The personas came to life during the workshop and for the participants this created an understanding of the methods and what the methods could give to the design process.

A: I find that I have a description of one user of LinkMedica and it is a user that might exist. She works when we imagine her and can say this is the basis we use it to progress.

J: Yeah I think what happened was that I realised what a model-user can be used for and how you can draw actions. Somehow paint a picture of the way the model-user is going to act and that something new comes forward about the user interface, about the algorithms that's part of the system and these are discussions you don't necessarily have early on because you more or less unconsciously don't believe they are there.

The methods created both a room for imagination and creativity where only aspects in relationship to the user and the user's context had to be considered and the commercial aspects were left out.

D: And it is great to sit and fantasise over how it could be if it was ideal instead of thinking about where it should be marketed and the practicalities. Instead to think creatively and think: how would it look if it was really, really good. We haven't done that before. Not that either and it is grotesque when considering that we are a department that sits and develop such things.

But the focus on the personas can create an insecurity of how appropriate the choice is: what if the focus had been slightly different what would have happened then?

E: Maybe we had some of the information earlier on, if they were wrapped up, described differently, this meant that we, when we should describe. I don't know if we would have described it differently.

For an outsider who did not participate in the discussions, like N., the decisions are impenetrable and in the reading process it was difficult to understand the arguments behind the choices.

N: Why didn't we aim for "ask expert" patients?

I: Is that the type of question that appears when you read this [the scenarios]?

N: No it was when you asked if anything was missing. And I feel that I do. When I'm sitting here I can see that it is not an "ask the expert" Helle. It is rather a ....., and it sounds sensible. And the same with Gitte, she is not as worked through. (...) It was just an example that I would like to have been there to hear the discussions after the first time. And I lack that,

The creativity and the engagement in the personas and scenarios are both strengths and weaknesses of the methods. The strength lies in the ability for solutions to be derived from the users' situations and the weakness in the difficulties to persuade the managers to use a creative method.

D: I was considering something. I understand that Microsoft uses the techniques. If you could come up with a couple of articles where it says it does the trick, then it would be easier to use as an argument to get more money. That the way you argue – big, bigger, biggest - and measurable.

As the methods are not part of the overall development process it was, by one of the participants, considered to be easily forgotten when the daily routines continued.

But the overall impression is that the fruitful discussions and ideas that followed each step of the method were provoked by these and would not else have taken place.

### 13.4.2 THE PROCESS

The process of developing personas provided the participants with awareness of how important it is to know the users and understand their needs. This awareness leads to an understanding of the importance of a focussed action towards a delimited segmentation of the users.

N: We can't just aim wide. We can't and we have got that many resources, then we have to be even better at aiming correctly.



E: (...) all it's about is the next step. To say that to be without symptoms, to be healthy, that haven't got anything to do with controlling your ... It is the change before actually and there you are go level down actually. It must really be a basic need for specific types. That's what we have to meet.

The awareness of the importance of knowing the user and the user needs is considered to have influence on the mindset of the participants and the work tasks in future projects.

D: You don't make a thing like this without investigating in who's out there. That's fundamental. That's something you have to know. But you know next, that this error will not be repeated. We have learned that, that's for sure."

There is a common perception that judges the previous development process and the existing application as failures. The new awareness of the importance of a project development with a focus on users increases the perception of failure.

The structured process of the workshops that forced the whole group to consider the users and their needs while being together in joint sessions was also seen as valuable. Previously, in their daily routines the participants have had discussions when important issues arose but discussions were often not structured and not part of a progressing structure.

I: What has been the biggest output of this other way of thinking?

N: To be forced to have thoughts that I wouldn't otherwise think and in a structured way. Really to sit down and think it through and work for many hours together with somebody else and consider what is it actually that happens away from

us where it should succeed? Of course, you think thoughts like that when you draw up material but not in the same thorough way. And especially not together with a whole group.

I: Then it meant something that you were together?

N: Yes I think so. Because we have different attitudes and different, very different, backgrounds. And apparently we have taken the time to do it in the same way. It has been day-to-day solutions and we have had a meeting about how we do it best. There has been an approach to use a process when we had meetings, but we never manage to do it, we have never been allowed to.

### 13.5 THE ORGANISATION

To work in a medical environment is to work with a philosophy of science that is based on the natural sciences and this leaves little room for other approaches. In the terms of Schutz, the members of the group meet the organisation in a 'they-orientation' (Schutz and Luckmann 1973) p. 80 where they imagine the organisation having typical properties such as a natural scientific mindset and a project understanding that derives from the development of pharmaceuticals. The organisation becomes an anonymous entity, which is very difficult to penetrate with new ideas. In contrast to this, the participants view the e-business group as consisting of fellow men with the same perception of science and project development, and oriented towards the humanities. They are viewed in a 'we-relation' with shared beliefs and understandings. The method seems to enlarge the view on the organisation in a 'they-relation', or at least not diminish, the gap between the two relations.

N: But I think it would have been difficult if you asked us to do it at another place in the organisation with other people. I think it could quickly end with us moving nowhere. It must be somebody who has been involved or has had a teacher or ...

A: If you place yourself in front of twenty specialists and introduce this and they think they are to use their knowledge and then they have to do group work, really, you can almost smell the incense and the herbal tea. Luckily many specialists are old from the 60's. So I won't say it can't be done, but it is a weakness. That's where the project can be run down. If you meet somebody who says: I won't work in groups. For me, personally, I hate group work, it is just because I'm such a nice person that I put up with it and actually get something from it.

The method is suitable for the e-business group because they are the type of persons they are: talkative and ready for experiments. While the rest of the organisation (with a few exceptions) are considered traditional in their mindset and victims of traditional medical marketing strategies.

D: No but we don't know if we did it right. We did what we thought we should, but we are used to imagine things and that was perfect. To say stupid things, to say can't we do this or that. I don't know maybe we're just used to babble.

I: It wasn't something you considered?

D: No I know that A. doesn't have trouble dreaming up and neither have I and J. doesn't lack words and E. talks more than the rest of us together. Nobody sits quiet and doesn't talk.

A. is considered to be part of the group and at the same time part of the natural scientific way of thinking. This is the way he considers himself too.

D: It is like this. A. had problems understanding it, he fought with your method. He would so much like to understand it, but he is very influenced by the system he grew up in, where it is the natural scientific mindset. Yours is different it is like, it is different, it's the humanities and I know that world, but it isn't what characterise us out here.

The methods help the group to consider themselves, as a unique group, but they also spur a distance to other groups in the organisation. This distance seems to be part of a larger experience for the group and has nothing to do with the methods, but it seems as if the methods can be used internally to give the feeling of belonging and externally to give a feeling of separation.

The e-business group also finds themselves in opposition to the rest of the company because the design of an Internet site demands different processes than medical production.

E: They consider it as if you have a product and then you can sell it and then there will be a decline at a given time and then it disappears.

N: It was like marketing and it was pressed into a form that we use when we work with our pharmaceuticals.

E: I do understand it for small stand- alone solutions, where I say I can show that I get a certain contact to customers via an internet solution and if I had to get the contact in another

way. Then I could balance the expenses towards each other. And this one costs 20.000 to do. And I have gained it if I could use it towards some customers. Then it is a cheap investment. And I have gained it according to the expenses. And then it is return of investment. I have gained the money it has cost. But you can't do that with such a giant system.

The medical production process and the natural sciences dominate the company and make it difficult to develop design processes appropriate for the web media.

E: We haven't made it easier to reason with the in-houses, to move along this road. I feel clearly inside myself that it is better than the usual road.

D: But the problem is that we act inside a world of scientific arguments - measure and weigh and such likes. That is what dominates our world out there.

The group cannot come up with measurable arguments for a change in perception of the design process, but they have a feeling that the knowledge they now possess about the users is persuasive, it can work as a breakthrough for further user inquiries and new ways of working.

E: Listen can you [the management] show me one single project, with the danger that they could, can you show me one single project in our organisation where you can describe your target group as specifically as we do - in quotes - through our work with the model-users.

## 13.6 SUMMARY

The persona workshop gave the participants an experience of how different the development process could have been if they had started with discussions of whom to target and had written personas. The acknowledgement of how a well-structured process can contribute to the design created a certainty that the previous development process never will be repeated.

The insecurity of the choices made is compensated by the positive effect of a feeling of knowing the user.

The statements and the analysis provide insight into two supplementary problem areas:

- The satisfaction with the workshop concentrates on the idea of getting a concrete view on the users. Users both in the sense of whom to target and how to get a feeling of who is behind the screens. This is reflected in the analysis of the discussions where the participants engage in the personas.
- The negative statements concentrate on the difficulties in reflecting the discussion in the written text. This is reflected in the analysis of the personas as being one-dimensional and lacking more character traits.

It seems as if somebody who can help keep the discussions on track should govern the process in order to get field data to support the engaging personas and a professional persona writer could help overcome this.

For the participants, the scenario workshop has provoked both reflections and solutions and it can guide future development and provide a common focus on design solutions that has previously been lacking.

The scenario workshop did also create an understanding of how little the design group actually knows about medical practitioners and their needs. Even though they have had a substantial number of medical practitioners on LinkMedica courses they still feel that this user group is beyond reach. The design group came up with two reasons for this; either they do not have knowledge enough about the group or medical practitioners as a group do not know their own needs.

The scenarios are considered easy to develop and easy to handle, but the shift from one persona to another should not take place during the same day as the engagement in the persona is so intense that the persona, as one of the participants expressed, stays 'inside the head'.

The downside of the scenarios produced by this group is that they might be difficult for outsiders to understand. The key factor is the discussions and N. as an outsider, found it difficult to follow the discussions by just reading the scenarios.

This can be explained with both a personal interest in the problems and solutions and with a poor written description, but

is seems that in this case it is the lack of coherence<sup>27</sup> that influences the reading process.

The workshops provided the participants with a row of very concrete perceptions of fictitious users and use situations they can use when considering improvements to LinkMedica.dk.

They provided the participants with an insight into another way of beginning a design process that fits their perception of an ideal design process.

As such the workshops have not changed anything towards the actual application LinkMedica.dk as there is still no money for improvement, but they have provided the e-business group with an idea of how a process of building an application that consider user needs and user situations could work and how valuable this is.

The workshops also provided the participants with a common understanding of methods and processes that distinguish them from other parts of the company. An understanding they use to perceive themselves as a unique group and to evaluate other parts of the company as either being prepared to share the mindset of the e-business group or being different and difficult to cooperate with.

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<sup>27</sup> See Chapter 12.



The workshops and the outcome are considered a success that needs to be repeated as it provides the participants with an engagement in the users that create focussed design solutions.

The methods are considered easy to handle and the joint discussions and work is considered of great value.

But the positive effects fade when considering how the workshops can influence future projects. The participants have gained an insight that is not easily transferred to the rest of the company. The background in pharmaceutical production hinders a design process that considers the users, as it is difficult for managers to understand the particularities of the web media.

This provides the participant in the e-business group with an ostracised and polarised feeling towards the rest of the company. They are different from the others, but internally, as a group, identical.



## 14. CONCLUSION

In many ways I have in this journey followed two paths simultaneously: I wanted to integrate the methods for creating personas and scenarios and develop the methods further by using narrative theory and methods. I also wanted to use the developed methods in practice to see how they could work in and influence a design practice.

To follow two paths simultaneous has so far been unproblematic. I have used narrative theory and methods to develop the methods of personas and scenarios and find that this as well as the integration of both methods has been successfully accomplished. The use of the methods in practice provided a series of practical areas to reconsider.

The initial motivation came from the need to solve a real problem that the LinkMedica web-designers faced. The outcome goes somehow to solving a very practical problem in that; how do

designers get a shared understanding of the users and the use situation?

As I stated in the beginning, I have worked with the designers via the workshops in order to get them to engage in and understand the user. I have worked not as a usability consultant but as a facilitator with knowledge formed both from the user inquiries and from the development of the persona/scenario creating methods.

I set out to answer the following three questions and will provide answers in the rest of this chapter. Finally, when I have answered the questions, I will discuss the model of engaging personas and narrative scenarios that I have developed.

1. Can the methods of engaging personas and narrative scenarios provide the participants with an understanding of users and use situations?
2. Can the concrete work with engaging personas and narrative scenarios inform the methods in use?
  - Was the practice appropriate?
  - What lessons can be learned from theory and practice?
3. How will engaging personas and narrative scenarios influence the perception of the design process in the design group at AstraZeneca?

**Research question 1: Can the methods of engaging personas and narrative scenarios provide designers with an understanding of users and use situations?**

The methods included two distinctively different sessions that provided the participants with an understanding of the users and the use situations: the process of writing and the process of discussion.

**The writing process**

Being forced to undergo a writing process made the participants explore the design area and develop design solutions through an engagement in the persona.

The personas' descriptions, created in small groups, took a point of departure from the user inquiries and the individual written scenarios created an awareness of the importance of context.

Individual scenario writing, with the personas in mind, creates a focus on context because personas and scenarios are seen as character and story. It also creates design solutions that are considered from a personas point of view.

The participants did not consider the process of writing difficult but the analysis of the videotaped discussions during personas creating gave a clear image of how great the loss of information was in the transition from discussions to writings.

Not only is it difficult to get all nuances of the personas included in the written descriptions but the writing as such might provide

an obstacle as not everybody are familiar with the a creative writing process or are able to provide a written description that can engage a reader. If the descriptions are to be disseminated between a larger design group the solution might be to involve creative writers.

For the narrative scenarios, the participants were familiar with the story structure and it provided the writing process with an initial driving force that made it easy for the participants to engage in the method. The written scenarios helped the design group to focus on the user, the needs and the context. Even though the participants were familiar with the story structure the finer details, such as story-obstacles, were not explored.

### **Participant discussions**

The group discussions after the writing process, played a central role as they compensated for the loss of information that was part of the transformation from discussion to persona writing. The collective process of personas discussions enabled a group perception and the participants felt joint ownership of the material.

In order to understand the persona it became necessary to find the personas motivation for use and the discussions of the description of the engaging persona furthered the understanding of the motivation. Even though the participants used their own experiences to support the creative process when they engaged in the personas and understood their motivations for action, the other participants held the individual experiences up against the

user inquiries and the personas descriptions. This way they validated and accepted features during a process of negotiation.

The discussions created an awareness of design obstacles to be considered and opened up for a united understanding of potential system functions and the problem spaces connected to those functions. From an understanding of the context and the problems in the design area, system functions were confirmed and/or rejected during the discussions.

The discussions made the participant's aware of the complexity of the system. For instance, whenever one function was decided on from the perspective of one persona, it was realised it had implications for another persona.

The individual scenarios created a feeling of ownership of ideas. These were questioned in the group session and either accepted or rejected.

Group discussion raised differences in perception and even though the participants' used their own background and experiences to argue for decisions, the groups achieved consensus with regard to a common language for discussing the user and a common understanding of the design problems.

### **The methods as process**

The three steps as defined in the model encourage designers to have discussions at every steps therefore the process can be defined as having five stages.

The method of creating the engaging persona provides a thorough description that enable designers to consider the persona's motivation and hence elaborate on the persona's needs and situations in accordance to the specific design area.

The notion of the rounded character and engagement as defined by the five characteristics of the persona provides a guideline for persona creation that frames the process of construction and the subsequent discussions.

Both methods for creating the engaging personas and the narrative scenarios are entwined. This became apparent when the group discussed the situations that was be considered the starting point for the scenarios, they then required a frame of reference that considered both the needs of the persona and the motivation for actions that actually stem from the character descriptions.

The scenarios are easy to develop and easy to handle and engagement in the persona is intense. This can make it difficult to swap from one persona to another.

As the method is intense and discussions play an important part in the process of creation those not involved in the process might find it difficult to understand the written description.

The difference in the engaging persona and narrative scenarios in comparison with personas and scenarios per se is the focus on process and not so much on the actual development of personas and scenarios descriptions. It is the process that creates room for discussions and it is the structured process that enables the



designers to get an understanding of the users and the use situations.

Working in a structured process where the steps; engaging persona, needs and situation, and narrative scenarios create room for specific discussions that are concrete, anchored in, and focussed on the user. The discussions widen the knowledge about the user and make it possible to reveal stereotypes and inferences and offer opportunities for adjustment. Whereas a perception that takes place as an individual process will not reveal inferences.

To answer the first research question: can the methods of engaging personas and narrative scenarios provide designers with an understanding of users and use situations? The methods described for creating engaging personas and narrative scenarios do provide the participants with an understanding of the users and the specific use situations. This greater understanding does influence the design solutions.

The described methods place the user at the centre of the design process whereas general descriptions of users shift the focus to the system.

In research example given i.e. LinkMedica, the methods provided the participants with a series of very concrete perceptions of fictitious users and use situations they can use for future consideration for improvements.

**Research question 2: Can the concrete work with engaging personas and narrative scenarios inform the methods in use?**

- **Was the practice appropriate?**
- **What lessons can be learned from theory and practice?**

**Appropriate practice**

When looking at the practice it is evident that the information from the user inquiries did not match the five areas of the engaging persona. The data was presented as statistics and facts and lacked the vivid, rich and colourful experiences I had when interviewing and observing users. In order for the designers to engage in the personas they had to infer the users' character traits, backgrounds, and emotions. Other methods to communicate information that enables an engagement e.g. photos or sound bites can be used and might support the communication.

The initial labelling of the users went against the notion of engagement and instead furthered creation of stereotypes.

The problems highlighted above influenced the process but the five stages in the model that was used in the workshop overcome the problem spaces.

**Lessons learned**

Following the process, the transition from discussion to the written form is difficult and needs to be considered. As human beings we are familiar with story telling and this eases the scenario writing process however we are not familiar with the

descriptive process of character writing which influences the persona descriptions.

The narrative theory has informed the model for creating engaging personas and narrative scenarios. That relevance of the model could be seen in the following occasions:

**The notion of the rounded character and the five areas in the personas:** The rounded character keeps, in the narrative, the focus on the character rather than on actions. The importance of this was highlighted in the instances where the user became an abstract entity and the focus was on the system as opposed to the user.

The five areas (i.e body, psyche, background, emotions and cacophony), which form the building blocks of the engaging persona, were derived from narrative theory. My research shows that they were important for understanding and engaging in the personas as the designers used the five areas as a basis for their personas creations. If the user inquiries did not provide the data relevant to the five areas, the designers inappropriately used inferences to cover the missing areas.

**The distinction between constructing and perception:** The model considers both construction of the engaging personas and narrative scenarios and the perception of the given descriptions. Perception is incorporated in the theoretical considerations of how to engage and with the notion of the fabula as consisting of both text and inferences.

**The problems with coherence:** The model includes awareness on closure and coherence as these serve to create a unified and whole narrative and supports the reading of the scenario. In the understanding of the reading process it is important to pay attention to the implied understandings that the individual readers use for interpretation and creation of the fabula.

**Research question 3: How will engaging personas and narrative scenarios influence the perception of the design process in the design group at AstraZeneca?**

The initial interviews showed that the design group developing LinkMedica lacked a common understanding of the user and had no shared reference that could judge arguments and decisions around design issues.

After the workshops the participants had formed a joint understanding of the users and had discussed and taken decisions about whom to target. This process enabled them to change their focus from the medical practitioners to the patients

The workshops created a new understanding of how a design process should evolve and the interviews showed that all the participants shared a perception of the process; that included user inquiries, engaging personas and narrative scenarios and had user tests in all further stages of the design process.

The workshops provided the participants from the e-business group with a common understanding of methods and processes

that distinguish them from other parts of the company. This understanding they use to perceive themselves as a unique group and to evaluate other parts of the company as either sharing the mindset of the e-business group or having a different mindset in reference to design thus being difficult to cooperate with in future design projects.

The e-business group considered the proposed design methods easy to use and easy to adopt and the resulting work was considered of great value. The workshops and the outcome was considered a success that needs to be repeated as it provides the participants with an engagement in the users and creates focussed design ideas.

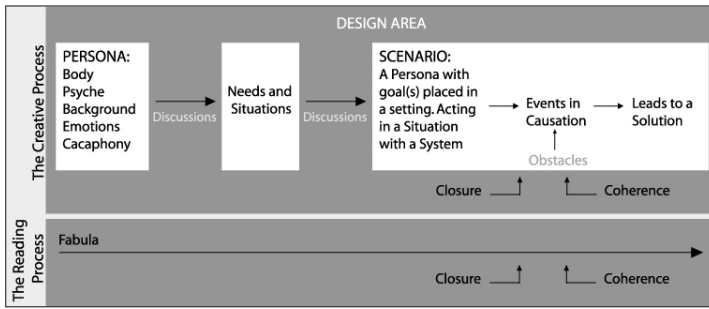
The statements and the analysis provide insight into two supplementary problem areas:

- The satisfaction with the workshop concentrates on the idea of getting a concrete view on the users. Users both in the sense of whom to target and how to get a feeling of who is behind the screens i.e. using the system.
- The negative statements concentrate on the difficulties in reflecting on the personas in the written form as opposed to the rich discussions.

The acknowledgement of how a well-structured process can contribute to the design was expressed with certainty in that the previous development process never will be repeated. The persona workshop gave the participants an experience of how different the development process could have been if they had

started with discussions of whom to target and had written personas. It is evident that the mental models of the participants have been changed and they now have a shared understanding of the core user.

## 14.1 CONTRIBUTION



The focus on narration offers a theoretical as well as practical approach to the process of creating personas and scenarios and it also highlights the process of perceiving the personas and the scenarios.

What does the model offer?

- It provides a process that creates opportunities to constantly refine and broaden the understanding of the user and situations of use
- As a tool for communication it shifts the focus from the written descriptions to the process of understanding the user and exploring the design area
- Through engagement it provides awareness on both the writing and the process of perception

- The notion of the rounded character keeps, in the narrative, the focus on the character rather than on actions.
- It moves the focus away from tasks and supports an understanding of the user in relation to context, considered as both surroundings, situations, and needs
- It provides instructions on what to look for in user inquiries in order to consider both writing and perception
- It highlights the implied understandings that the individual readers use for interpretation and creation of the scenario

## 14.2 CONCLUDING REMARKS

The research I did leave spaces to be investigated in future studies. Some of these suggested studies include:

The model provides an understanding of the user and is a tool for communication but what methods comes before and after is not covered in this study.

The grouping or segmentations of users is an area that is not covered in the study and needs to be further investigated.

Working with personas demands an identification with and engagement in the persona that can be problematic with a large number of personas where it can become difficult for the individual designer to delve into more characters and understand them as much as the model proposes.

For this dissertation the knowledge of engaging personas and narrative scenarios stayed within the group, but the problems with disseminating the understanding to a larger group needs further investigation.

The journey I set upon is now finished and I rest on a shore that hopefully will become known as I look around. I feel on firm ground but the boundaries are uncertain and need to be investigated further.



## 15. DANSK SAMMENFATNING

Da jeg i december 2001 blev kontaktet af AstraZeneca for at hjælpe dem med at få kendskab til brugerne af [www.LinkMedica.dk](http://www.LinkMedica.dk), var det startskuddet til denne afhandling. Afhandlingens formål er, dels at se på om metoderne engagerende personas og narrative scenarier kan hjælpe designere til at få en forståelse af brugerne og dels at udvikle på systemdesign-metoderne personas og scenarier.

LinkMedica.dk er et website, der retter sig mod astmapatienter og deres pårørende. Sitet findes både i en dansk og i en engelsk version, der hver bestyres af en lokal web-gruppe. Sitet er unikt idet astmatikere kan monitorere deres astma og få tilbagemelding på, hvor meget astma medicin de skal tage i forhold til den rapporterede tilstand. Denne feature hedder Astmakontrolcenter. Både patienten og patientens praktiserende læge har adgang til Astmakontrolcenter. Sitet består desuden af en artikelbase – Videnscenter – og et område, hvor man kan spørge eksperter til råds og læse svar på spørgsmål andre har stillet – Forum.

For at kunne hjælpe AstraZeneca med at forstå brugerne på LinkMedica.dk stod jeg for fire brugerundersøgelser. En kvantitativ undersøgelse af brugerne af LinkMedica.dk udført i samarbejde med Claus Bornemann og Torkil Clemmensen samt en kvalitativ undersøgelse af astmatikere herunder deres forhold til sygdommen og brug af Internettet. En kvantitativ undersøgelse af sundhedspersonales kendskab til, brug af og vurdering af LinkMedica.dk lavet i samarbejde med Jacob Anhøj samt en kvalitativ undersøgelse af praktiserende lægers brug af Internettet og forståelse af patienters brug af Internettet. Resultatet fra disse undersøgelser dannede baggrund for de to workshops jeg senere lavede med AstraZeneca.

De tre forskningsspørgsmål jeg har arbejdet med er:

1. Kan metoderne engagerende personas og narrative scenarier give designere en forståelse af brugere og brugssituationer?
2. Kan det konkrete arbejde med engagerende personas og narrative scenarier informere metoderne? Herunder:
  - a. Var praksis passende?
  - b. Hvad kan man lære fra teori og praksis?
3. Vil engagerende personas og narrative scenarier influere på opfattelsen af designprocessen i designgruppen hos AstraZeneca?

For at kunne svare på spørgsmålene har jeg interviewet nogle af de involverede i LinkMedica projektet. Dette for at forstå deres opfattelse af brugerne og for at afdække den designpraksis, der blev brugt i forbindelse med LinkMedica projektet. Efter at have

gennemført disse interviews arrangerede jeg to workshops for designere fra AstraZeneca og afsluttende med at interviewe deltagerne.

Ved siden af dette arbejde fortsatte jeg med en teoretisk udvikling af metoderne personas og scenarier til, det jeg i dag kalder, en model for engagerende personas og narrative scenarier. Denne model er brugt som input til workshopperne og som analysemetode til de konkrete persona og scenarier beskrivelser, der blev produceret på de to workshops.

Gennem hele afhandlingen har jeg anvendt kvalitative metoder. Dels interviews og dels aktionsforskning i forbindelse med de to workshops jeg gennemførte sammen med e-business gruppen i AstraZeneca.

Jeg vil i det følgende kort gennemgå de empiriske og analytiske afsnit i afhandlingen, hvor jeg fokuserer på resultater.

**Bruger kategorier.** Baggrunden for at skabe en brugerforståelse var de fire brugerundersøgelser. Disse falder udenfor denne afhandling, men danner udgangspunkt for workshopperne. Bruger kategorierne indeholder hhv. patienter, pårørende og læger.

Patienterne karakteriseres som hhv. kontrollerende - en der føler, at vedkommende får det bedre ved at kontrollere sin sygdom - og som negligerende - en der føler, at vedkommende får det bedre ved ikke at fokusere på sin sygdom.

De pårørende var alle kvinder og de kategoriseres som hhv. professionelle - en der opsøger alle medier for at få viden om den pårørendes sygdom - og som emotionelle - en pårørende, der står i en ny situation og som har brug for at få en begrænset viden og som især har brug for handlingsanvisninger.

Lægerne karakteriseres som hhv. en, der bruger eller har prøvet at bruge LinkMedica og som af forskellige årsager er holdt op igen og som en, der er interesseret i at bruge LinkMedica fordi der er potentialer i systemet.

Brugerne har to måder at bruge systemet på, disse kan karakteriseres som hhv. en indefra-ud måde og en udefra-ind måde. I indefra-ud måden bruges Astmakontrolcenter og brugeren orienterer sig derfra ud til andre områder af sitet. I udefra-ind måden kommer brugeren udefra de andre områder af sitet og går dernæst ind på Astmakontrolcenter.

**Projektet LinkMedica.** Interviewene blev afholdt med danske og svenske medlemmer af projektgruppen, med en svenske projektleder fra det design bureau, der havde stået for den tekniske og æstetiske udvikling af sitet samt med en dansk læge, der havde stået for et tidligere dansk site (doc-to-doc) der indeholdt nogle af de samme features som LinkMedica. I interviewene fandt jeg, at de interviewede alle havde forskellige opfattelser af hvem brugerne af sitet er og at det aldrig var diskuteret, hvem brugerne var. Alle havde en individuel opfattelse af hvem en patientbruger var, og denne så ud til at hænge sammen med den interviewedes eget køn og egen alder,

samt med deres viden om, hvem der bruger Internettet. Samtidig havde der i projektforløbet været en række modsætningsforhold mellem de forskellige involverede partnere.

Modsætningsforholdene handlede først og fremmest om en manglende fælles forståelse af målet med sitet og hvem der skulle bruge det. Der var ikke nogen samlet opfattelse af design processen, af forholdet mellem læge og patient, der var forskelle i erfaringer med Internet projekter samt uenighed om, hvor meget der skulle bestemmes fra centralt hold. Disse uenigheder medførte, at der ikke var noget, der kunne gælde som et ræsonnabelt argument, men at det var den, der råbte højest eller havde størst magt, der vandt argumentationer.

**Engagerende personas.** En personas er en fiktiv karakter, der samler brugerundersøgelser i et portræt af en bruger. Der kan i en designproces være en eller flere brugere som sitet skal rette sig mod.

I arbejdet med at udvikle begrebet engagerende personas har jeg brugt narrative teorier og metoder, hvoraf flere er hentet fra området for filmmanuskript skrivning.

Samtidig med at beskrivelsen af brugeren skal relatere sig til brugerundersøgelser, skal beskrivelsen også være så rig at designerne kan engagere sig i denne. Rige, korte og præcise beskrivelser af brugere findes i filmmanuskripter, der retter sig mod fortællinger, hvor det er karakterernes udvikling, der driver handlingen frem snarere end en lang række actions, der driver fortællingen frem.

I arbejdet med den engagerende persona nåede jeg frem til, at en beskrivelse skal indeholde fem områder for både at kunne male et rigt billede af brugeren og for samtidig at det skal være muligt for designeren at engagere sig i beskrivelsen. De fem områder er: krop, psyke, baggrund, emotioner og kakofoni. Det sidste kan beskrives som to modsatrettede karaktertræk.

**Workshop om engagerende personas.** I analysen af workshopperne og materialet derfra, blev det klart, at der går mange informationer tabt i skriveprocessen. Tabet af informationer blev der i nogen grad kompenseret for i diskussionerne af personas beskrivelserne. Beskrivelserne kan betegnes som stereotyper og de manglede de kvaliteter, der gør at designerne kan engagere sig i dem.

Betegnelserne som kontrollerende og negligerende var i nogen grad med til at skabe stereotyperne. Samtidig manglede formidlingen af dataene fra brugerundersøgelserne mange af de fem områder, der skal til for at beskrive en engagerende persona. Deltagerne brugte deres egne erfaringer til at skabe mere nuancerede billeder af personaerne, og gennem dette fik de en fælles forståelse af de beskrevne personas.

**At etablere situationer.** Først der kan skabes scenarier, er det nødvendigt at overveje hvilke behov personaen har og i hvilke situationer denne er i, når applikationen bruges. På denne måde bliver behov og situationer afsættet for at scenariet kan begynde.

**Workshop om situationer.** I analysen af diskussionerne af behov og situationer dannede designgruppen en større forståelse af, hvem de beskrevne personas var. Diskussionerne førte til, at en af personaerne fik tilføjet et manglende karaktertræk. Når designerne diskuterede situationerne, kunne de ikke gøre dette uden at referere til personaens motivation for handling, der stammede fra personas beskrivelsen.

**Narrative scenarier:** I eksisterende beskrivelser af scenarier mangler der en skelnen mellem at skrive scenarier og at læse scenarier. Dette forsøger modellen over engagerende personas og narrative scenarier at tage højde for. Samtidig tilbyder modellen en udvikling fra den statiske beskrivelse af en engagerende persona til en dynamisk beskrivelse af den engagerende persona i et narrativt scenarie.

I det narrative scenarie skelnes der mellem fabula og sjuzet - mellem den inter- subjektive fortælling og den eksakte tekst. Der lægges specielt vægt på begreberne lukkethed og kohærens, der begge understøtter læseprocessen.

Det narrative scenarie følger fortællingens struktur med begyndelse, midte og slutning og det indeholder mål, plot og løsning.

**Workshop om narrative scenarier.** Scenarierne blev skrevet individuelt og senere diskuteret i gruppen. Det var nemt for deltagerne at skrive scenarierne. I de individuelle scenarier blev deltagerne opmærksomme på personaens kontekst. Scenarierne hjalp deltagerne til en opmærksomhed omkring brugeren, dennes behov og kontekst. Samtidig viste det sig, at fortællingen som

struktur kan skjule i hvilken grad forfatteren begynder at fabulere og bevæge sig væk fra realiteten. Dette blev klart i scenarierne til læge-brugeren, der i første omgang virkede troværdigt, men i diskussionerne blev det afdækket, at de ikke var realistiske. Derfor er det vigtigt hele tiden at holde scenarierne op imod den virkelighed som designet skal befinde sig indenfor.

I diskussionerne af scenarierne blev deltagerne opmærksomme på, hvor komplekst systemet er og at en beslutning, der har konsekvenser for den ene målgruppe kan have unødige konsekvenser for andre dele af målgruppen.

Scenarierne skabte et fælles ståsted for gruppen og de fik en fælles forståelse af brugerne og for brugen af systemet og der kom flere designforslag frem, der kan bruges ved fremtidige ændringer af systemet.

**Deltagernes afsluttende refleksioner.** Overordnet udtrykte deltagerne tilfredshed med workshoppernes forløb. De udtrykte en ensartet forståelse af designprocessen der, hvis den skal være ideel, bør indeholde dels personas og scenarier, men også skal inddrage brugere flere gange i design forløbet. Dette sidste understøtter en uro som nogle gav udtryk for, at man i workshopperne kan have valgt forkerte personas eller forkerte situationer. Denne uro opvejes dog af, at man for første gang har udført en bevidst og informeret beslutning om, hvem det er sitet skal rette sig imod og hvordan disse skal bruge det.



Workshopperne gav således gruppen en fælles forståelse af, hvem der skal designes til, og samtidig en fælles forståelse af, hvordan en design proces bør struktureres.

**Konklusion.** Når jeg vender tilbage til de tre forsknings-spørgsmål, står det klart, at de kan besvares positivt, men at der i praksis er en række forhold, man som designer eller koordinator af designforløb, bør forholde sig til.

1. Kan metoderne engagerende personas og narrative scenarier give designere en forståelse af brugere og brugssituationer?

Både skriveprocessen og diskussionerne var med til at give designerne en forståelse af brugerne og brugen. Deltagerne syntes ikke selv, at det var svært at skrive, men analyserne viste, at der var et stort tab af informationer i skriveprocessen og brugerne blevet beskrevet som stereotyper. De tre trin i modellen skabte faser, hvor det var nødvendigt at diskutere og disse faser kompenserede for tabet af informationer og skabte en fælles forståelse af brugerne og brug. Dermed blev der skabt et fælles sprog og en fælles opfattelse af designprocessen.

2. Kan det konkrete arbejde med engagerende personas og narrative scenarier informere metoderne? Herunder:
  - a. Var praksis passende
  - b. Hvad kan uddrages fra teori og praksis

Praksis havde visse mangler idet brugerundersøgelserne ikke havde taget højde for informationer, der kunne belyse de fem områder til den engagerende persona. Samtidig var de benævnelserne, der kom frem i brugerundersøgelserne uhensigtsmæssige og fremmede stereotyp dannelser.

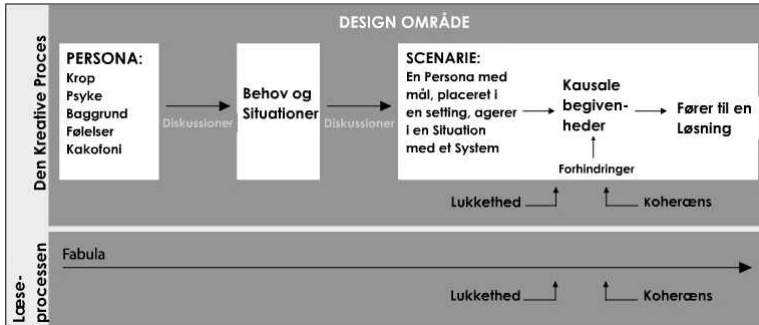
Begge disse problematiske områder blev der dog kompenseret for i diskussionerne. Praksis viser, at det er svært at lave rige og engagerende beskrivelser af brugerne. At det er i diskussionerne at kendskabet til brugerne og brugssituationerne udvikles. Praksis viste også, at når brugeren omtales som en anonym person og ikke som en engagerende persona, så diskuteres der ud fra systemet og ikke ud fra brugerens behov.

Praksis viste, at der i processen er behov for en styrende person, der har kendskab til historie fortælling.

3. Vil engagerende personas og narrative scenarier influere på opfattelse af designprocessen i designgruppen hos AstraZeneca?

I de afsluttende interviews stod det klart, at workshopperne har affødt en fælles forståelse af, hvordan en ideel designproces bør være. Samtidig har de affødt refleksioner om det præcise i brugen af personas og scenarier, der gør at deltagerne skitserer en designproces, der inddrager brugerne aktivt i hele forløbet. Gruppen har således ikke bare fået en fælles forståelse af brugerne, men også en fælles forståelse af designprocessen.

**Bidrag.** Det væsentligste bidrag er udviklingen af modellen.



Modellen tilbyder:

- En proces, der gør det muligt hele tiden at udvide og forfine kendskabet til brugeren og brugen
- Et redskab til kommunikation, der flytter fokus fra skriftlige beskrivelser af brugerne til processen med at forstå brugeren og undersøge design området
- Gennem engagement skabes opmærksomhed om både den kreative skriveproces og den perciperende proces
- I fortællingen flytter den runde karakter fokus fra handlinger til fokus på brugeren
- Fokus flyttes fra brugerens opgaver og understøtter en forståelse af brugeren i samspil med dennes kontekst, forstået som både omgivelserne, situationer og behov
- Anvisninger på, hvad brugerundersøgelser også skal indeholde for at kunne understøtte skrive- og læseprocessen
- Skaber opmærksomhed på designernes forud opfattelser, både af brugere og af design ideer

Fra dette studie er der opstået nogle spørgsmål, der falder udenfor studiet, men som bør studeres i fremtiden:

- Hvilke designredskaber og systemudviklingsmetoder er velegnede i samspil med engagerende personas og narrative scenarier?
- Hvordan kan man segmentere brugerne så der kan skaber personas?
- Hvor mange brugere kan man som designer håndtere, når man samtidig skal kunne engagere sig i disse?
- Hvilke problemer opstår der, når viden om engagerende personas og narrative scenarier skal formidles til andre designgrupper, kunder eller udviklere?

## 16. LITERATURE

Abbott, H. P. (2002). "The Cambridge Introduction to Narrative". Cambridge, The Cambridge University Press.

Anderson, D. J. "Lifestyle Snapshots" 2003. 25-03-03.  
<http://www.uidesign.net/2000/papers/lifestylesnapshot.html>

Anhøj, J. and L. Nielsen (2004). "Evaluation of LinkMedica: An Internet based asthma monitoring tool" *Journal of Medical Internet Research* (To be published).

Aristotle "Poetics" 2001. 26-06.  
<http://classics.mit.edu/aristotele/poetics.mb.txt>

Baskerville, R. (1999). "Investigating Information Systems With Action research" *Communication of the Association for Information System* (2): Article 19.

Baskerville, R. and A. T. Wood-Harper (1996). "A Taxonomy of Action Research Methods" *PAP012-0.05*.

Bliss, D. "Narrative scenarios as a design tool." 2002. 12-8 2002.  
[http://www.davidbliss.com/viewEntry.asp?unique\\_id=232](http://www.davidbliss.com/viewEntry.asp?unique_id=232)

Blomquist, Å. and A. Mattias (2002). "Personas in Action: Ethnography in an Interaction Design Team". *Proceedings of NordiChi 2002*, Århus, ACM. pp. 195-198

Borchmann, S. (2002). "Sprognormer og konfigurerings af personer i fiktive fortællende tekster" *Kultur&Klasse* (94): pp. 94-124.

Bordwell, D. (1997). "Narration in the Fiction Film". London, Routledge.

Brandt, E. and C. Grunnet (2000). "Evoking the Future: Drama and Props in User Centered Design". *Proceedings of PDC00*, New York. pp.11-20

Branigan, E. (1992). "Narrative Comprehension and Film". London, Routledge.

Brechin, E. "Reconciling market segments and personas" 2003. 20-3. [http://www.cooper.com/newsletters/2002\\_02/reconciling\\_market\\_segments\\_and\\_personas.htm](http://www.cooper.com/newsletters/2002_02/reconciling_market_segments_and_personas.htm)

Brooks, P. (1984). "Reading for the Plot - Design and Intention in Narrative". London, Harvard University Press.

Bruner, J. (1990). "Acts of Meaning". London, Harvard University Press.

Bødker, S. (1999). "Scenarios in User-Centered Design - setting the stage for reflection and action" *Proceedings of the 32nd Hawaii International Conference on System Science*.

Bødker, S. and E. Christiansen (1997). "Scenarios as Springboard in CSCW Design". *Social Science, Technical Systems and Cooperative Work*. S. S. G. Bowker, W. Turner, L. Gasser. London, Lawrence Erlbaum Ass. Publ: pp. 217-234.

Campbell, R. L. (1992). "Will the Real Scenario Please Stand Up?" *SIGCHI Bulletin* (24)2: pp. 6-8.

- Carroll, J. M. (1999). "Five Reasons for Scenario-Based Design" *Proceedings of the 32nd Hawaii International Conference on System Science*.
- Carroll, J. M. (2000). "Making Use - scenario-based design of human-computer interactions". Cambridge, Mass, The MIT Press.
- Carroll, R. "Scenario-Based Usability Engineering"
- Chatman, S. (1978). "Story and Discourse". London, Cornell University Press.
- Chatman, S. (1990). "Coming to Terms. The Rhetoric of Narrative in Fiction and Film". London, Cornell University Press.
- Clausen, H. (1993). "Narratives as tools for the system designer" *Design Studies* (14)3: pp. 283-298.
- Clausen, H. (2000). "Informationsteknologiens menneskelige grundlag". København, Teknisk Forlag.
- Cobley, P. (2001). "Narrative". London, Routledge.
- Collin, F. and S. Køppe (1995). "Indledning". *Humanistisk Videnskabsteori*. F. Collin and S. Køppe. Copenhagen, DR Multimedie: pp. 9-36.
- Constantine, L. and L. Lockwood "Structure and Style in Use Cases for User Interface Design" 2003. 31-3 2003.  
<http://www.foruse.com/articles/structurestyle2.pdf>
- Cooper, A. (1999). "The Inmates Are Running the Asylum". Indianapolis, SAMS.
- Cooper, G. and J. Bowers (1995). "Representing the User: Notes on the disciplinary rhetoric of human-computer interaction". *The Social and interactional Dimensions of Human-Computer Interfaces*. P. J. Thomas. Cambridge, Cambridge University Press: pp 48-66.
- Cooper, L. (2003). "Bridging the Gulf between User Research and Scenario-based Design: Theory & practice" (Unpublished).

- Dahler-Larsen, P. (2002). "At fremstille kvalitative data". Odense, Odense Universitetsforlag.
- Dancyger, K. and J. Rush (1995). "Writing Beyond the Rules". Boston, Focal Press.
- Denzin, N. K. and Y. S. Lincoln (1998). "Introduction: Entering the Field of Qualitative Research". *The Landscape of Qualitative Research*. N. K. Denzin and Y. S. Lincoln. Thousand Oaks, Sage: pp. 1-34.
- Diaper, D. (2002). "Scenarios and task analysis" *Interacting with Computers* (14)4: pp. 379-395.
- Djajadiningrat, J. P., Gaver, W.W., Frens, J.W. (2000). "Interaction Relabelling and Extreme Characters: Methods for Exploring Aesthetic Interactions" *ACM*: pp.66-71
- Ducatel, K. and M. Bogdanowicz "ISTAG - Scenarios for Ambient Intelligence in 2010" 2003. 30-7.  
<ftp://ftp.cordis.lu/pub/ist/docs/istagscenarios2010.pdf>
- Edelstein, L. (1999). "The Writer's Guide to Character Traits". Cincinnati, Writer's Digest.
- Egri, L. (1960). "The Art of Dramatic Writing". N.Y., Simon and Schuster.
- Erickson, T. (1995). "Notes on Design Practice: Stories and Prototypes as Catalysts for Communication". *Scenario-Based Design Envisioning Work and Technology in System Development*. J. M. Carroll. New York, John Wiley and Sons, Inc.: pp. 37-59.
- Field, S. (1984). "The Screenwriter's Workbook". New York, Dell.
- Frensham, R. (1996). "Screenwriting". London, Hodder Headline.
- Glaze, G. M. "Personas for the S2S Project" 2003. 02-04.  
<http://www.cs.utexas.edu/users/almstrum/cs373/general/personas.html>



- Goodwin, K. "Perfecting your Personas" 2003. 20-03.  
[http://www.cooper.com/newsletters/2001\\_07/perfecting\\_your\\_personas.htm](http://www.cooper.com/newsletters/2001_07/perfecting_your_personas.htm)
- Goodwin, K. "Getting from Research to Personas: Harnessing the Power of Data" 2003. 20-03.  
[http://www.cooper.com/content/insights/newsletters/2002\\_11/getting\\_from\\_research\\_to\\_personas.asp](http://www.cooper.com/content/insights/newsletters/2002_11/getting_from_research_to_personas.asp)
- Grudin, J. and J. Pruitt (2002). "Personas, Participatory Design and Product Development: An Infrastructure for Engagement". *Proceedings of PDA 2002*, Malmoe. pp. 144-161.
- Guba, E. G. and Y. S. Lincoln (1998). "Competing Paradigms in Qualitative Research". *The Landscape of Qualitative Research*. N. K. Denzin and Y. S. Lincoln. Thousand Oaks, Sage: pp. 118-137.
- Halkier, B. (2001). "Kan pragmatisme være analytisk?" *Kvalitative metoder*. Frederiksberg, Roskilde Universitetsforlag: pp. 41-59.
- Hasdogan, G. (1996). "The Role of User Models in Product Design for Assessment of User Needs" *Design Studies* 17: pp. 19-33.
- Hasdogan, G. (1997). "Scenario-Building in the Product Design Process". *The Challenge of Complexity*. P. McGrory. Helsinki, University of Arts and Design, UIAH: pp. 134-141.
- Head, A. J. "Personas Setting the State for Building Usable Information Sites" 2003. 9-11 2003.  
<http://www.infotoday.com/online/jul03/head.shtml>
- Heijden, K. (1996). "Scenarios - The Art of Strategic Conversation". Chichester, John Wiley and Sons.
- Hinton, P. R. (2000). "Stereotypes, Cognition and Culture". East Sussex, Psychology Press.
- Holtzblatt, K. "Personas and Contextual Design" 2003. 10-4.  
[http://www.incent.com/community/design\\_corner/02\\_0913.html](http://www.incent.com/community/design_corner/02_0913.html)

Holtzblatt, K. and H. Beyer (1996). "Contextual Design: Principles and Practice". *Field Methods Casebook for Software Design*. J. Ramey. New York, NY., John Wiley & Sons: pp. 301-333.

Horton, A. (1999). "Writing the Character-Centered Screenplay". L.A., University of California Press.

Iacucci, G., C. Iacucci, et al. (2002). "Imagining and Experiencing in Design, the Role of Performances". *Proceedings of NordiChi 2002*, Aarhus. pp. 167-177

Jacobsen, J. K. (1993). "Interview. Kunsten at lytte og spørge." København, Hans Reitzel: pp. 20-24, 111-143.

Jarke, M. (1999). "Scenarios for Modeling" *Communication of the ACM* (42)1: pp. 47-48.

Jordan, P. W. (2000). "Designing Pleasurable Products". London, Taylor & Francis.

Jordan, P. W. (2002). "How to make Brilliant Stuff that People Love". West Sussex, John Wiley and Sons.

Karat, C.-M. and J. Karat (1992). "Some Dialogues on Scenarios" *SIGCHI Bulletin* (24)4: pp. 7-17.

Karat, J. and C. M. Karat (2003). "The Evolution of User-Centered Focus in the Human-Computer Interaction Field." *IBM Systems Journal* (42)4: pp. 532-541.

Kensing, F. (2003). "Methods and Practices in Participatory Design". Copenhagen, ITU Press.

Kjørup, S. (2003). "Menneskevidenskaberne". Roskilde, Samfundslitteratur.

Kvale, S. (1997). "InterView". København, Hans Reitzel.

Kyng, M. (1992). "Scenario? Guilty!" *SIGCHI Bulletin* (24)4: pp. 8-9.

- Larsen, S. E. (2002). "Narratology and Narrative: History and Perspective" *Almen Semiotik* (16): pp. 130-145.
- Macrae, N. C. and G. V. Bodehausen (2001). "Social Cognition: Categorical person perception" *British Journal of Psychology* (92): pp. 239-255.
- McGraw, K. L. and K. Harbison (1997). "User-Centered Requirements: The Scenario-Based Engineering Process". Mahwah, New Jersey, Lawrence Earlbaum ass.
- Mikkelson, N. and W. O. Lee (2000). "Incorporating User Archetypes into Scenario-Based Design." *Proceedings of UPA 2000*, Usability Professionals Ass.
- Mäkelä, A. and T. Mattelmäki (2002). "Collecting Stories on User Experience to Inspire Design - a Pilot". *Pleasure with Products*. S. Green and P. W. Jordan. London, Taylor & Francis: pp. 334-343.
- Nardi, B. A. (1992). "The Use of Scenarios in Design" *SIGCHI Bulletin* (24)4: pp. 13-14.
- Nardi, B. A. (1995). "Some Reflections on Scenarios". *Scenario-Based Design Envisioning Work and Technology in System Development*. J. M. Carroll. USA, John Wiley and Sons, Inc: pp. 387-399.
- Nielsen, J., R. Orngreen, et al. (2002). "Learning Happens - Rethinking Video Analysis". *Learning in Virtual Environments*. L. Dirckinck-Holmfeldt and B. Fibiger. Frederiksberg C, Samfundslitteratur: pp. 310-339.
- Nielsen, L. "Scenarier som udviklingsværktøj." 1998.  
<http://design.emu.dk/artik/98/scenarier.htm>
- Nielsen, L. (2002). "From User to Character". *Proceedings of Designing Interactive Systems - DIS2002*, London, ACM Sigchi. pp. 99-104
- Nielsen, L. (2002). "Undersøgelse af brugere og evaluering af website (praktiserende læger). Kvalitativ delrapport". København.

Nielsen, L. (2003). "Constructing the User". *Proceedings of Human Computer Interaction International - HCII2003*, Crete, Lawrence Erlbaum Ass. pp. 430-434

Nielsen, L. and J. Anhøj (2002). "Undersøgelse af brugere og evaluering af Linkmedica.dk (læger). Kvantitativ delrapport". København.

Nielsen, L., T. Clemmensen, et al. (2002). "Undersøgelse af brugere og evaluering af website (patienter og pårørende). Kvantitativ delrapport." København, AstraZeneca.

Nünning, A. (2001). "On the Perspective Structure of Narrative Texts: Steps toward a Constructivist Narratology". *New Perspectives on Narrative Perspective*. W. C. Van Peer, Seymour. Albany, State University of New York: pp. 207-223.

Olsen, H. (2002). "Kvaler eller kvalitet?" *Nordisk Psykologi* (2)54: pp. 145-172.

Potts, C. (1995). "Using Schematic Scenarios to Understand User Needs". *Proceedings of DIS*, MI USA, ACM. pp. 247-256

Preece, J., Y. Rogers, et al. (2002). "Interaction Design", John Wiley and sons.

Pruitt, J. and J. Grudin "Personas: Theory and Practice" 2003. 05-03.  
<http://www.research.microsoft.com/research/coet/Grudin/Personas/Pruitt-Grudin.doc>

Rasmussen, L., V. Backer, et al. (2003). " Preliminary Data from a Clinical Trial: Does Use of an Internet Based Asthma-Monitoring Tool Increase Lung Function and Asthma Control?" *Proceedings of The American Thoracic Society 99th International Conference*, Seattle, Washington, USA. <http://www.abstracts2view.com/ats/>

Rasmussen, T. A. (1997). "Video mellem samtale og observation". *Videoobservationer*. H. Alrø and L. Dirckinck-Holmfeldt. Ålborg, Ålborg Universitetsforlag: pp.

Reisner (1992). "Further Uses of "Scenario"" *SIGCHI Bulletin* (24)4: pp. 15.

Rosenberg, D. (1999). "Use Case Driven Object Modelling with UML". Reading Mass., Addison-Wesley.

Rosson, M. B. and J. M. Carroll (2002). "Scenario-Based Usability Engineering". D. Tutorial. London, DIS 2002.

Rosson, M. B. and J. M. Carroll (2002). "Usability Engineering". San Fransisco, Morgan Kaufmann Publishers.

Rukov, M. (2003). "Persona Workshop". L. Nielsen. Copenhagen, Sigchi.dk.

Schuler, D. N., A. (Eds) (1993). "Participatory Design: Principles and Practices". Hillsdale, NJ, Lawrence Erlbaum Ass.

Schutz, A. (1976). "The Stranger". *Collected papers - Studies in Social Theory*: pp. 91-103.

Schutz, A. and T. Luckmann (1973). "The Structures of the Life-World". Illinois, Northern University.

Schwandt, T. A. (1998). "Constructivist, Interpretivist Approaches to Human Inquiry". *The Landscape of Qualitative Research*. N. K. Denzin and Y. S. Lincoln. Thousand Oaks, Sage: pp. 118-137.

Schön, D. A. (2001). "Den reflekterende praktiker". Århus, Klim.

Sharrock, W. and B. Anderson (1994). "The User as a Scenic Feature of the Design Space" *Design Studies* (15)1: pp. 5-18.

Smith, M. (1995). "Engaging Characters: fiction, emotion, and the cinema", Clarendon Press.

Suri, J. F. and M. Marsh (2000). "Scenario Building as an Ergonomics Method in Consumer Product Design" *Applied Ergonomics* (31)2: pp 151-157.

Sutcliffe, A. (2003). "Scenarios, Models and the Design Process in Software Engineering and Interactive Systems Design". *Proceedings of HCII 2002*, Crete, Lawrence Erlbaum ass. pp. 579-583

Thomas, P. D. (1995). "The Social and Interactional Dimensions of Human-Computer Interfaces". Cambridge, Cambridge University Press.

Toulmin, S. and B. Gustavsen (1996). "Beyond Theory". Amsterdam, John Benjamins.

Young, R. M. and P. J. Barnard (1992). "Multiple Users of Scenarios: A Reply to Campbell" *SIGCHI Bulletin* (24)4: pp. 10.

Aagaard Nielsen, K. (2001). "Eksperimentelle metoder og aktionsforskning". *Kvalitative metoder*. Frederiksberg, Roskilde Universitetsforlag: pp. 41-59.